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Governance and Economic Development in the Arab Region: A Global Perspective

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University of Plymouth

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**UNIVERSITY OF
PLYMOUTH**

**Governance and Economic Development in the Arab Region: A
Global Perspective**

By

Islam Ibrahim Abdelbary

A thesis submitted to the University of Plymouth
in partial fulfilment for the degree of

DOCTOR OF PHILOSOPHY

Faculty of Business, Plymouth Business School

2019

"O David, indeed We have made you a successor upon the earth, so judge between the people in truth and do not follow [your own] desire."

[Translation of the Holy Quran (38:26) 'Sahzch International']

Dedication

This thesis is dedicated to;

To the spirits of those who sacrificed their lives for freedom, human dignity and the establishment of a state of justice.

To my family, who shared the responsibility, and worked hard to provide the time and space necessary for me to work on my research. I appreciate all the sacrifices you made, and I am grateful for all the support you showed. I could not have done it without you!

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Author's declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award.

Work submitted for this research degree at Plymouth University has not formed part of any other degree either at Plymouth University or at another establishment.

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I. Publications:

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Islam Abdel Bary

List of Abbreviations

2SLS	Two-Stage Least Squares
2SLSW	Two-stage least square weighted
3SLS	Three stages least squares
ACs	Arab Countries
ALO	Arab Labour Organization
BOP	Balance of Payments
BERI	Business Environment Risk Intelligence
CA	The Current Account
CPI	Consumer Price Index
CPI	Corruption Perceptions Index
CSA	Central & South Asian countries
DPD	Dynamic Panel Data
DER	Distribution of economic power
DW	Durbin-Watson
EAS	East Asian Countries
EC	European Commission
ECS	European countries
EFA	Education for All
EIU	Economist Intelligence Unit
EU	European Union
FAO	Food and Agriculture Organization
FDI	Foreign direct investment
FE	Fixed Effect
FH	Freedom House
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GLS	Generalised Least Squares
GMM	Generalised Method of moments
GMM1	One-step generalised method of moments
GMM2	Two-step generalised method of moments
GNI	Gross National Income
GNP	Gross National Product
HIPIC	Heavily indebted poor countries
ICRG	International Country Risk Guide
ICT	Information and communication technology
ILO	International Labour Organization
IMF	International Monetary Fund
IPS	Im-Pesaran-Shin
IV	Instrumental Variables
LCN	Latin America countries
LICs	Low-Income Countries
LLC	Levin-Lin-Chu

LM	Lagrange Multiplier
LMS	Least Median of Squares
LSDV	Least Squares Dummy Variables
M & E	Monitoring and Evaluation
MDG	Millennium Development Goal
NAC	North American Countries
NGOs	Non-governmental organisations
NIE	New institutional economics theory
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Square
OPEC	Organization of Petroleum Exporting Countries
PMG	Pooled Mean Group
POLS	Pooled OLS
PP	Phillips-Perron
PPP	Purchasing Power Parity
R&D	Research and Development
RE	Random Effect
RPLA	Resource-poor, labour-abundant
RRLA	Resource-rich, labour-abundant
RRLI	Resource-rich, labour-importing
SSA	Sub-Saharan Africa countries
SUR	Seemingly unrelated regression
SV	Shapley value
SWFs	Sovereign wealth funds
TFP	Total Factor Productivity
TSLS	Two-stage Least Square
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VIF	Variance Inflation Factor
WB	World Bank
WDI	World Development Indicators
WGI	Worldwide Governance Indicators
WHO	World Health Organization

Abstract

Governance and Economic Development in the Arab Region: A Global Perspective

Islam Ibrahim Abdelbary

The Arab region enjoys a strategic geographical location, an abundant natural resource base, a demographic gift of an expanding pool of young and educated labour force, and a dynamic and entrepreneurial population. Despite these, the region has been unable to achieve sustained and inclusive growth. This failure has strongly been attributed to igniting a wave of protests, popularly referred to as the 'Arab Spring', which spread throughout most of the region. Hence, the study aimed to identify the economic and especially institutional reasons that led to the Arab uprising by evaluating reform programmes that took place over the past two decades in the region.

In order to achieve this objective, the study applied two stages of quantitative analysis on a panel of 78 countries, including 17 from the Arab region (categorised into four groups) over the period 1995 to 2014. Firstly, a comparative heuristic approach to examine the outcomes of economic, social and political reform in the Arab countries with those in other world regions. Secondly, an examination of these relationships by utilising an augmented neoclassical growth model framework derived from a production function and a dynamic panel LSDCV estimation, which incorporates aggregated reform indicators generated by principal component analysis (PCA).

The outcomes prove that the Arab region had experienced a growth deficit, with low per capita income growth. This growth performance has been weaker than that achieved by most other regions of the world. Success in economic and social reforms have been disappointing, attributable mostly to the poor institutional environment, which includes, political instability and dictatorial rule, civil wars, lack of accountability and widespread governmental corruption. The econometric analysis supports this and suggests that in addition to improvements in the institutional environment, monetary and financial policy mechanisms should be activated, in addition to diversification of the economy to achieve growth.

Based on these the thesis proposes frameworks that may lead to more comprehensive and integrated development in the Arab world, based on some key economic, political and social variables, and taking into consideration the distinctive features of each Arab group. These frameworks can be used as a vital tool to increase the effectiveness of reform programmes in meeting targeted inclusive growth outcomes.

In conclusion, the study confirms that reform is simultaneously political, social and economic. Economic reform should not be seen in a vacuum, in isolation from political and social choices that society makes. Looking forward, the Arab reform agenda must address critical governance issues that hinder the effectiveness of reform policies. Better institutions will establish an incentive structure that reduces uncertainty and encourages efficiency, thereby contributing to sustained and inclusive growth.

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Chapter One

Introduction

Chapter One: Introduction

1.1 Research Background and Rationale

Arab countries (ACs)¹ are a diverse set in terms of size, geography, level of income, natural resource endowments, economic structure, human capital and skills, social structures, economic policies and institutions. Their total land surface areas are 44% larger than China or 3.8 times the size of the European Union, and hold half of the world's known oil reserves and its natural gas (BP, 2014). Therefore, the oil sector has provided the basis for economic and social development throughout the region, not only for oil-producing economies but resource-poor Arab economies as well, through remittances, trade, capital and aid flows. The region has also been linked by economic policy, with similar models of economic development adopted by ACs since the 1950s and 1960s, based upon state-led planning, with strong social policies designed for redistribution and equity (Bibi and Nabli, 2010). Economic indicators have, however, been poor, a reflection of several factors, including poor-quality institutions.

The characteristics of socioeconomic reform after independence have been shaped by different themes. In the 1950s and early 1960s, the development model in ACs was based on strong governments, central planning of economic and social priorities, and wide-scale policies for redistribution and equity. During the 1970s oil boom, ACs, especially the Gulf Cooperation Council (GCC) countries, launched ambitious programmes of public spending on infrastructure and services. Nevertheless, by the mid-1980s, this progress faced pressures for change because of the significant role played by oil revenues. In the 1990s and 2000s, many ACs launched economic reform programmes prescribed by the International Monetary Fund (IMF) and the World Bank. These reforms were mainly concerned with structural adjustment policies, macroeconomic stabilisation and structural reforms (Abbott et al., 2010).

Despite implementing all these reforms, they did not significantly affect the standards of living of Arab citizens. Indeed, over the last fifteen years or so, the growth performance of the Arab region as a whole has been disappointing. According to Makdisi et al. (2006) the economic growth pattern is inextricably linked to several characteristics of most of the countries in the region notably; their heavy dependence on oil, weak economic base, high population growth and unemployment rates, low rates of returns on investment in physical and

¹ Please see the map of Arab countries in Appendix 1.1

human capital, low level of integration in the world economy and underdevelopment of market institutions.

A significant constraint to growth is the lack of adequate infrastructure, an exception being the GCC countries. Following the World Bank's Investment Climate Assessments, almost half of the private businesses in the region complain that infrastructure is moderate to a major obstacle to conducting business. Telecommunications and transportation, two necessary services, are also significantly underdeveloped (Nabli, 2007).

Furthermore, across the region, the lack of improvement in labour markets and living conditions are another key constraint on growth. Unemployment is one of the major sources of economic failure in most Arab countries. According to the Arab Labour Organization (ALO) in 2007, the overall average unemployment rate for the ACs was about 14.4 per cent of the labour force compared to 6.3 per cent for the world as a whole. A cross-country study of developing countries including Egypt, Morocco, Tunisia, and Jordan found that the first three of these countries have significant gaps relative to other developing countries with regard not only to youth employment but also the quantity and quality of education and skills mismatches (EBRD, 2015; Jelassi et al., 2015) . Of the seven Arab countries assessed in the World Economic Forum's Global Competitiveness Index, five scored worst in the labour market efficiency category in 2014 – 15, and three of these countries (Algeria, Egypt, and Tunisia) have been in the bottom decile of rankings of labour market efficiency for the previous three years.

The countries in the region continue to fail to use human capital efficiently because of the nature of the education system, which distorts incentives. Pissarides and Végonzonès (2006), argued that education systems in the region are more aligned to the needs of the public sector, with the result that acquired skills do not match those required in growth-enhancing activities in the private sector. Excessive regulation of the private sector and a highly controlled labour market, have further removed the incentives for employers to recruit, train and retain skilled workers.

Moreover, a report by UNDP (2011), which examined the sectoral economic growth and long-term structural transformation in the region, found that heavy sectoral weights of extractive industries lead to dependence on global oil prices. The structure of production limits employment generation for skilled and semi-skilled labour. Low-skilled services and informal activities absorb the workforce and have adverse effects on aggregate productivity and living

standards. The slow emergence of manufacturing capacities distinguishes the economies of the Arab region from other developing countries, such as those in Asia.

Economists in recent years have come to a broad consensus that economic performance is not always warranted by economic characteristics alone, but it is often shaped by the political and institutional environment in which economic activities take place (Kaufmann and Kraay, 2008). Regarding the Arab region, besides the poor economic conditions, there are weak governance and institutional framework. Regardless of the different approaches used by institutional and commercial agencies, they all conclude that ACs are generally poor in all these indicators including the governance aspects in general and especially in democracy (Kaufmann et al., 2010; Marshall et al., 2012; PRS Group, 2011).

According to the Freedom House (2015), the region as a whole had the worst civil liberties scores of any region, and most of its countries classified as partly free or not free. Arab nations are among the worst performers in estimates of global Corruption Perceptions Index (CPI) (Transparency International, 2011). They also observed that corruption is the main challenge in the region, with three of the bottoms ten countries CPIs in 2014 coming from the region.

High-level corruption is exemplified by the ruling elites who control both the polity and key segments of the economy. They abuse formal and informal institutions to control the accumulation and distribution of resources and jobs in order to extend their power and amass illicit wealth. In fact, corruption was an instrument for the capture of the economy. Despite attempts towards the process of transition to the liberal economy as a kind of an economic reform similar to what happened in Morocco, in Tunisia, Jordan and Egypt, the elite's power and hold over resources expanded during periods of "economic liberalisation". For instance, privatisation and public procurement operations carefully managed to ensure that close associates of the rulers would control these assets. This has led to an entrenched rent-seeking system of crony capitalism (Kaufmann, 2011).

There is no doubt that these political and economic institutional conditions had reflected directly in economic performance and business activities. Emara and Jhonsa (2011) and Nabli (2007) have argued that the low efficiency of capital in the Arab region can be attributed to the fact that most countries in the region provide an unfriendly business environment and insufficient institutional support for private investment. Makdisi et al. (2006) have also highlighted the importance of the quality of institutions in explaining the weak productivity performance of Arab countries in comparison with the rest of the world in general.

Furthermore, Aysan et al. (2007) addressed the issue of the low level of private investment in the region, with an empirical result showing that governance plays a significant role in private investment decisions. The same effect in the case of "administrative quality" in the form of control of corruption, bureaucratic quality, the investment-friendly profile of administration, law and order, as well as for "political stability." The estimations also stress that structural reforms like financial development and human development affect private investment decisions directly, through their positive effect on governance.

In the light of the above, the ACs with regard to polity is characterised by a top-down, personalised, highly concentrated and non-contestable mode of governing. Economically, the region exhibited highly skewed income and wealth accumulation as well as resource allocation, and distribution of political power linked with a highly centralised power of the ruling elite. In particular, under this politically and economically captured system, neither the middle nor the poor class were beneficiaries.

Under this dark image of living conditions, a broad wave of protests spread throughout most of the Arab region² popularly referred to as the 'Arab Spring'. The Arab street seemed to have made clear that it is no longer willing to accept these development models and the control and distribution of the region's resources. A primary goal of the protesters everywhere from Tunisia to Bahrain was easy to capture from major slogans of the demonstrators in the Arab world. The first one was, "The people want to overthrow the regime" and the second "Bread, freedom and social justice". These slogans represented what Arab people have suffered from, especially during the last two decades. They aim to create more participatory and representative political systems, a fairer economic system, and independent judiciaries (Alimi et al., 2016).

Regarding the first slogan, Tunisians succeeded in overthrowing their president, and so did the Egyptians, the Libyans, and the Yemenis (Hissouf, 2014), while the second one which underlines the interdependence of inclusive governance, economic and social inclusion, still require more time to achieve. It needs more strategic thinking towards exploring alternative solutions and a range of development policy options to help redress the underlying causes that gave rise to the widespread popular grievances and discontent.

² By the end of February 2012, rulers had been forced from power in Tunisia, Egypt, Libya and Yemen; civil uprisings had erupted in Bahrain and Syria; major protests had broken out in Algeria, Iraq, Jordan, Kuwait, Morocco, and Sudan; and minor protests had occurred in Mauritania and Oman (Green, 2015).

The movement for change that has spread through the socio-political landscape of the Arab region asks for new development pathways that give greater prominence to the interlocking issues of democratic governance, social justice and decent employment. A successful transformation is contingent upon understanding and paying heed to the demands of the Arab street for political, economic and social inclusion (UNDP, 2011).

Following the Arab Spring, the need for a new Arab development model has become essential. The developmental country is capable of transforming the considerable potential and natural resources of the region into an inclusive growth base that respects human rights, reduces poverty, creates suitable work opportunities and consider social expenditure as a real investment for the future (Malik and Awadallah, 2013).

1.2 Research questions:

The study attempts to answer the following questions:

1. What is the effect of implementing a series of economic reforms on economic development in Arab countries?
2. How do Arab governance systems and institutional structures affect their social and economic development?
3. Why have Arab states failed to achieve sustained and inclusive growth?
4. What are the main features of a new Arab region economic development framework?

1.3 Aim and research objectives:

The primary aim of the study is to identify the economic and institutional reasons that led to the Arab uprising by evaluating the reform programmes that took place over the past two decades in the region(1995-2014). Following the analyses, the study proposes a new development framework that could be adopted by Arab countries to help achieve sustainable development, raise the standard of living for Arab citizens and thus avoid the occurrence of similar revolutions in the future.

The objectives of the study are to:

1. Determine the pattern of economic growth of the Arab world.
2. Assess the economic development status in ACs and the effect of economic reforms on it.
3. Classify the winners and losers of ACs based on progress in the economic reform programmes.

4. Investigate the institutional and political aspects of Arab reform.
5. Examine the input and output factors of the governance system in the Arab region.
6. Measure empirically the effectiveness of reform programmes in achieving sustained growth in Arab countries.
7. Assess the similarities and differences in the reform agenda between Arab countries.
8. Develop and recommend a “New Developmental framework” for ACs that is based on a new social contract of mutual accountability.

1.4 Research Hypotheses:

1. The growth in Arab countries has the same pattern of growth and development as other regions of the world.
2. Economic reforms programmes have been insufficient to boost the growth performance of the ACs
3. Better governance policies will positively affect the living standards of the population.
4. There is a positive relationship between economic stability, structural reform and economic growth.
5. Improving the institutional environment helps to achieve and sustain inclusive growth.
6. Institutions can explain significant variation in economic development across countries and over time.

Table 1.1, presents a brief summary of the research structure relating to the links between the research objectives, research questions and hypotheses. That is, the extent to which the research questions are addressed by the research objectives, and hypotheses helping to achieve the research objectives.

Table 1.1: The linkage between the research questions, objectives, hypothesis

Research Questions	Research Objectives	Research Hypotheses	Chapter Covered
1. What is the effect of implementing a series of economic reforms on economic	1.1 Determine the pattern of economic growth of the Arab world.	1.1 The growth in ACs has the same pattern of growth and development as other regions in the world.	Ch.5

development in Arab countries?	<p>1.2 Assess the economic development status in ACs and the effect of economic reforms on it.</p> <p>1.3 Classify the winners and losers of ACs based on progress in the economic reform programmes.</p>	1.2 Economic reforms programmes have been insufficient to boost the growth performance of the ACs.	
2. How do Arab governance systems and institutional structures affect their social and economic development?	<p>2.1 Investigate the institutions and political aspects of Arab reform.</p> <p>2.2 clarify the input and output factors of the governance system in the Arab region.</p>	2.1 Better governance policies will positively affect the living standards of the population.	Ch.6
3. Why have Arab states failed to achieve sustained and inclusive growth?	<p>3.1 Measure empirically the effectiveness of reform programmes in achieving sustained growth in Arab countries.</p> <p>3.2 Assess the similarities and differences in the reform agenda between Arab countries.</p>	<p>3.1 There is a positive relationship between economic stability, structural reform and economic growth.</p> <p>3.2 Improving the institutional environment helps to achieve and sustain inclusive growth.</p>	Ch.7
4. What are the main features of a new Arab region economic development model?	4.1 Develop and recommend a “New Developmental framework” for ACs that is based on a new social contract of mutual accountability.	4.1 Institutions can explain significant variation in economic development across countries and over time.	Ch.8

1.5 Overview of the Research

The thesis consists of an abstract and nine chapters with a summary of the rest of the chapters as follows:

Chapter 2: Governance and Development: Theoretical Review

- Defining different perspectives of governance and identify the fundamental governance indicators.
- Provide an in-depth analysis of the main governance indicators following the Worldwide Governance Indicators of the World Bank Institute.
- Examine critical concepts, elements and theories of economic development, which focus on institutions, policies, laws and regulations.
- Explore several theories and applications of governance and development emanating from various disciplines in the social sciences, as well as from interdisciplinary perspectives.

Chapter 3: Governance and Development: Empirical Evidence

- Critically examine the debate on the effects of various measures of governance and their impact on development by presenting and evaluating the growing body of empirical literature that has examined this relationship.
- Discuss the empirical evidence of incorporating the governance of states in explaining development and growth across countries.

Chapter 4: Methodology

- Presents the methodological issues related to the investigation carried out in this research, and discuss the methods that underpin the analysis in this study
- Describe the econometric techniques, including any modelling issues and problems, as well as provides techniques for solving these problems.

Chapter 5: Socioeconomic Reform and Development Challenges for the Arab Countries

- Determine the pattern of economic growth of the Arab region and compare it to other regions in the world in order to understand the possible explanation of why the growth performance of the region has been disappointing.
- Quantify the contribution of socioeconomic reform programmes in the Arab region over the past two decades on the growth pattern and development, which include economic reform indicators, as well as the physical infrastructure and human capital indicators.
- Describe the development challenges facing Arab Countries and examine the constraints of the old development model in the region in terms of meeting these development challenges.
- Evaluation of the winners and losers of the Arab countries based on progress in structural reforms and macroeconomic stability

Chapter 6: Institutions and Political Aspects of Arab Reform

- Explore and analyse the pattern of governance indicators in Arab countries overtime from 1995 until 2014, then compare it to the other regions and the rest of the world.
- Discuss the particular relationships concerning Arab governance, which raise interesting issues in recent research.

Chapter 7: The Impact of Economic and Institutions Reform Programmes on Economic Growth: An Econometric Analysis

- Examine empirically the effectiveness of economic, social and institutional reform programmes in achieving sustained growth through using conditional convergence equation for six regions; advanced economies, developing countries, Arab countries, Arab Gulf countries (GCC), Arab emerging countries (Arab reformers) and Arab countries under civil war.
- The analysis will follow the methodological procedures specified in Chapter 5, as several tests will be done before the estimation of the final models before testing the existence of a long-run cointegrating equilibrium among the variables, the

integration properties of each panel will be examined. Additionally, four potential econometric problems which could affect panel data analysis of least squares regression models; multicollinearity, heteroscedasticity, autocorrelation, and endogeneity, will be checked with appropriate tests.

- Moreover, Shapley Value decomposition will be utilised to confirm the results of the previous analysis by determining the contribution of each component in the growth rate.

Chapter 8: Towards an Inclusive Development Framework for Arab Reform

- Based on previous analyses, the chapter summarises the reform experience in the Arab world and address some of the determinants which have inhibited the implementation of a reliable reform program.
- The chapter proposes new frameworks for comprehensive and integrated development based on the economic, political and social growth for the Arab world in general, taking into consideration the distinctive features of each Arab group. These frameworks recommend public policies practices, through a set of transitions that constitute the contours of a new development model and, outline the fundamental changes needed for making this transition from different perspectives.

Chapter 9: Conclusion, Limitation and Future Research

- The chapter reviews the findings of each chapter as well as setting them in the context of the study's objectives.
- The chapter highlights the main contributions to knowledge and policy-making as well as identifying the research limitations and providing recommendations for avenues of future research.

Chapter 2

Governance and Development: *Theoretical Review*

Chapter 2: Governance and Development: Theoretical Review

2.1 Introduction:

Economic development is one of the most controversial issues of economic history. The experience in development research of the past fifty years has demonstrated that development is possible but not inevitable. While few developing countries have succeeded in rapid societal and economic growth, narrowing the gap between themselves and the more advanced countries and bringing millions of their citizens out of poverty, many more countries have seen the development gap grow and poverty increase.

Governance over the last few decades has moved into the spotlight of development economists. The relationship between governance and development has been a highly debated topic. While some authors argue that governance shows positive effects on growth, others are of the view that it is not the case.

Therefore, the main purpose of this chapter is to critically examine the evidence on the governance-development relationship by providing systemic reviews of recent theoretical debate. This chapter is divided into three main sections. First, the chapter will trace the concepts, elements and theories of economic development, starting with Adam Smith and his classical school and finally recent theory on development which focus on institutions, policies, laws and regulations in the realm of “New Institutional Economics”. The second section examines different perspectives of governance and identify key governance indicators, following the “Worldwide Governance Indicators” by the World Bank Institute, and provide an in-depth analysis of these indicators. The final section explores selected theories of governance and development emanating from several disciplines in the social sciences, as well as from interdisciplinary perspectives, in addition to discussing the theoretical implications of incorporating the governance of states in explaining development and growth difference across countries.

2.2 The Concept of Economic development

2.2.1 What is development?

Economic development, in its simplest form, aims to create the wealth of a nation. Before the 1970s, rapid economic growth was considered a good proxy for development and its other

attributes (Todaro and Smith, 2011). In this direction, economic performance is measured by the market value of all officially recognised final goods and services produced by a country in a year referred to as the gross domestic product (GDP).

However, the GDP indicator reflects the value of a country's output, which measures well-being and development exclusively based on material wealth. Improvements in welfare such as better health, education and more housing for large parts of the poor population are not appropriately captured. The experience of the 1950s and 1960s (post-World War II), when many developing nations did reach their economic growth targets, but the levels of living of the masses of people remained, for the most part, unchanged, signalled that something was very wrong with this narrow definition of development. Scholars and policy-makers with a focus on developing countries realised that income growth was only one dimension of development; a new economic view of development seems to have arrived. An increasing number of economists clamoured for more direct attacks on widespread absolute poverty, increasingly inequitable income distributions, and rising unemployment (Dang and Pheng, 2014; Todaro and Smith, 2011).

The keen academic interest in development issues after the Second World War was met by an equally keen political interest in the subject matter in the newly-initiated United Nations (UN). While the impetus behind establishing the UN was to put in place a durable framework for international security, the preamble of the UN Charter also included calls for the organisation to “promote social development and better standards of life in greater freedom (Nielsen, 2011).

In response, the United Nations issued a report on International definitions, determinants and measurements of standards of living. The report distinguished between standards of living (a normative concept) and levels of living (a positive concept). Although the report considered that “measurements of differences and changes in levels of living could be carried out satisfactorily without reference to norms” (United Nations, 1954, p. 3), it recognised that positive measures of levels of living must indicate generally accepted purposes for social and economic policies at the international level in particular areas such as health, education, employment, nutrition and housing.

During the 1970s, the millions of people living under poverty conditions further turned the concentration of development economists to people’s lives rather than their incomes. Several developing countries have experienced high growth rates in terms of per-capita income but a limited change in the living conditions of a majority of the population. In other words, while

per-capita income increased, poverty, inequality and unemployment were getting worse. Therefore, the purpose of development during the period was not narrowed to economic growth but to focus on the reduction of poverty, unemployment and inequality (Seers, 1969;1979).

In the 1990s, economists increasingly recognised that it was the quality of life that determines whether people are from developing countries or not. Diseases, malnourishment and death that happen in the everyday lives of those from the developing countries changed the view of development goals dramatically. By then, many researchers around the world contributed to shifting the development goals set by governments in developing countries to broader objectives. A broader perspective of development goals is hence necessary as reflected in the World Bank's Development Report (World Bank, 1991, p. 4) as "to improve the quality of life it encompasses as ends in themselves such as better education, higher standards of health and nutrition, less poverty, a cleaner environment, more equality of opportunity, greater individual freedom, and a richer cultural life."

These changes in development goals posed the need to construct alternative composite indices to reflect the quality of life. These directories should take into account not only financial indicators but also non-financial indicators to reflect the development levels achieved. For these reasons, the United Nations Development Programme (UNDP) has published the Human Development Index (HDI) annually since 1990 in an attempt to provide an aggregate measure of life expectancy, education, and income.

Over time, the attention of development economics has shifted. For instance, Sen and Clapp (2000) argued that development expands freedom by removing barriers to freedom such as hunger and tyranny, that leave people with limited choice and opportunity. This humanistic approach to development leads one to explore what constitutes satisfactory minimum living conditions. For example, an acceptable minimum economic standard could include a person's ability to consume sufficient nutrients to avoid being malnourished and to live in a dwelling with specific essential characteristics (in terms of size, access to improved drinking water, electricity, etc.). By costing this standard of living, the minimum income needed to achieve the standard can be determined.

The World Bank currently define economic development as "qualitative change and restructuring in a country's economy in connection with technological and social progress" (Soubbotina and Sheram, 2000, p. 96), while the most inclusive definition perhaps of economic development is the one given by Todaro and Smith (2011, p. 5) as "an increase in living

standards, improvement in self-esteem needs and freedom from oppression as well as a greater choice”.

Therefore, the current research agrees with the economic approach that believes “economic growth is one aspect of the process of economic development. Growth is a necessary but not a sufficient condition for development because GDP per capita might be rising, at the same time, most people don’t see any actual improvements in living standards due to poverty might be increasing, inequality rising and massive environmental damage might be occurring” (Sen, 1983, p. 748).

To sum up this debate, the concepts of economic development and growth are currently oriented towards creating a suitable environment where individuals can strive to enhance welfare, make use of available technology and acquire new knowledge in a secure environment (Colombatto, 2006).

Economic growth and development have a strong relationship. Economic growth supplies the resource to drive a rise in development and enhancements in human development that guarantee economic progress by the increment in the quality of the labour force.

Economic development is therefore argued as the improvement in the standard of living of a population with sustained growth from a simple, low-income economy to an advanced, high-income economy. When the quality of life betters this, it generates development, which includes processes and policies that raise the economic, political and social well-being of the nation’s society. The purpose of development policies is to accumulate several productive factors to begin a sufficient economic growth that causes improvements in the standard of living, reduction of inequalities, and increases the welfare of population (Ranis et al., 2000).

Thus, the current study defines economic development as the promotion of economic growth in such countries which result in improving the standard of living factors such as health, education, working conditions, poverty reduction, improved functioning of markets, and in particular, reform of public institutions which is the core of this study.

2.2.2: A Brief History of Economic Development Thought

Comprehending the main forces behind long-term economic growth has spurred a large body of theoretical as well as empirical research. Identifying the sources of growth is critical for the design of economic policies that would lead to sustained growth and thus higher standards of living. Although development economics became established as a discipline within economics

only in the 1950s, several economists had written extensively about the nature of economic society and prosperity. In the following section, the study will briefly illustrate a comparison of major economic theories highlighting key characteristics and the criticisms of each of them, and also as they relate to economic development (See Appendix 2.1 for a summary)

- **Adam Smith and the classical school**

Adam Smith believed that the division of labour could create better productive processes. The mechanism for enhancing the nation's wealth, therefore, is through specialisation and exchange. Smith argued that under competition, private investors while pursuing their own interests guided by the "invisible hand" would maximise national output and thus promote public interests (Nafziger, 2006). In this system, government interference is seen as inefficient in driving economic activities. Free trade, private property and competition are seen as the foundations that would push economic development, reduce poverty and bring on social and moral improvements of humankind. Nevertheless, freewheeling capitalism is often criticised for bringing wealth only to the rich, whereas the poor get poorer. In addition, Smith focused only on capital accumulation and growth without explaining the impact on development (Bell, 1992).

- **Karl Marx and socialism**

Karl Marx argued that the feasible system should be based on social or public ownership of property. He emphasised that the wealth of the capitalists come from the exploitation of the surplus value created by the workers (Bardhan, 1985). Hence, private property and the free market were seen as causes of poverty for workers and therefore argued that private property should be completely abolished. A nation's economy should be planned and managed by the state to serve the interests of the masses — the theory linked to development through illustrating the importance of human development and how the socioeconomic environments could change the shape of developments. Moreover, it provides an extensive theoretical framework for the reduction of poverty and disparities in society.

Nevertheless, the socialist philosophy was not viable either. The experience of socialist economies showed little or even no improvement in the living conditions of the poor (Parthasarathy, 1994). The collapse of the Soviet Union and the central planning paradigm appeared to prove that the model would not provide answers to dealing with poverty and inequality seen in human society (Meier, 2001).

- **The Linear Stages of Growth Models**

The initial generation of economic development models was formulated following World War II. These early models focused on the utility of massive injections of capital to realise quick GDP growth rates. For instance, the Harrod–Domar (1947) model emphasised that the prime mover of the economy is investments. Given a targeted growth rate, the required savings rate should be available. If domestic savings were not sufficient, then foreign savings should be mobilised (Todaro and Smith, 2011).

Although these growth models were right about the vital role of investments that it is most closely connected with the economic growth rate, this is not the only condition for a country to develop. The key weakness of these models lies in their simplifying assumptions. A single production function is assumed for all countries, while the economic growth path and development process is highly nonlinear (Dang and Pheng, 2014). In addition, the model's emphasis on the growth perspective as it only increases in production output but neglected human and social aspects of development.

- **Neoclassical Counter-Revolution Models**

The 1980s neoclassical counter-revolution economists can be divided into three component approaches; the free-market approach, the new political economy approach (Public-choice theory), and the market-friendly approach. **The free-market analysis** argues that markets alone are efficient— prices for goods and services are set freely by the forces of supply and demand and are allowed to reach their point of equilibrium without interference by government policy.

Public-choice theory, goes even further, to argue that governments can do (virtually) nothing right. This is because public-choice theory assumes that politicians, citizens, bureaucrats, and states act solely from a self-interested perspective, using their power and the authority of the government for their own selfish ends. **The market-friendly** approach recognises that there are many deficiencies in developing countries' product and factor markets and those governments do have a pivotal role to play in facilitating the operation of markets through “nonselective” (market-friendly) interventions. For example, by investing in physical and social infrastructure, educational institutions, and healthcare facilities, and by providing a suitable climate for private enterprise.

The neoliberal theory proposes that social justice can be achieved through “trickle-down” effect. The idea is that providing economic benefits to those with upper-level incomes will

ultimately benefit society as a whole, through the new wealth being invested into the economy and therefore providing wealth for lower-income earners (Aghion and Bolton, 1997). Another strand of neoclassical free-market thoughts called the traditional neoclassical growth theory originated from the Harrod–Domar, are the Solow and Swan models. Expanding upon the Harrod–Domar formulation, Solow (1956) and Swan (1956) neoclassical growth models stress the importance of three factors of output growth: increases in the quantity and quality of labour, increases in the capital (through savings and investments) and improvements in technology (Dang and Pheng, 2014).

Technological change in Solow’s model is incorporated exogenously. Thus, with the same rate of technological progress, the economic growth rate would be expected to converge across countries. By opening up national markets, developing countries can draw additional domestic and foreign investments, thus increasing the rate of capital accumulation and returns on investments. Consequently, developing countries will tend to converge to higher per-capita income levels (World Bank, 2000).

The Neoclassical Counter School argued that policies of liberalisation, privatisation, foreign trade, private international investments and foreign aid flowing into developing countries could be expected to accelerate the economic efficiency and economic growth of these countries. Empirically the models did not bring about the expected results. The growth rates per capita have diverged among countries, with weak and inadequate regulatory framework, not to mention the different institutional, cultural and historical context of the developing countries - a free market in these countries fails to stimulate economic development (World Bank, 2000).

- New Growth Theory (Endogenous growth theory)

In the late 1980s and early 1990s, the endogenous growth theory explained the weak performance of many less developed countries, which have implemented policies as prescribed in neoclassical theories. Different from the Solow model which considers technological change as an exogenous factor, the new growth model notes that technological change has not been equal, nor has it been exogenously transmitted in most developing countries (World Bank, 2000).

The theory linked technological change to the production of knowledge. The new growth theory emphasises that economic growth result from increasing returns to the use of knowledge rather than labour and capital. Lucas (1988) argues that the higher rate of returns as predicted in the Solow model is greatly eroded by lower levels of complementary investments in human

capital (education), infrastructure, and research and development (R&D). Meanwhile, knowledge is different from other economic commodities as it could grow boundlessly. Knowledge or innovation can be reused at zero additional cost. Investments in knowledge creation, therefore, can bring about sustained growth.

Moreover, knowledge could create spillover benefits to other firms once they obtain knowledge. However, markets failed to produce enough knowledge because people cannot capture all of the gains associated with creating new knowledge by their own investments. Policy intervention is thus considered necessary to influence growth in the long term (Aghion and Howitt, 1992).

The new growth models believed in the development process through promoting the role of government and public policies in complementary investments in human capital development and improvement of foreign investments in knowledge-intensive industries such as computer software and telecommunications (Romer, 1990b). On the other hand, the theory was criticised for ignoring the importance of social and institutional structures (Meier, 2001). In addition, allocational inefficiencies are common in economies undergoing the transition from traditional to commercialised markets. However, their impact on short- and medium-term growth has been neglected due to the new theory's emphasis on the determinants of long-term growth rates. Finally, empirical studies of the predictive value of endogenous growth theories have to date offered only limited support (Todaro and Smith, 2011).

- New Institutional Economics (NIE)

By the end of the twentieth century, the importance of institutions and governance for development increased notably after the failure of applying the pure concepts of neoclassical ideas in developing countries. Policies such as liberalisation, privatisation, and tax reforms, in fact, created severe instability, inequity and inefficiency, because they were carried out without the appropriate regulatory and legal frameworks, and government rules and structures, and thus make banking systems, corporate governance, and tax collection work efficiently only in advanced industrial countries.

Institutions are “the rules of the game” (North, 1990) that shape human behaviour in a society. The New Institutional Economics (NIE) combines economic theory with the analysis of institutions. The theory focuses on the belief that humans develop to explain their environment and the institutions (political, economic, and social) that they create to shape that environment (North, 2005). The NIE does not assert that neoclassical theory is wrong, but simply that it is

incomplete. When institutions work well, one can largely ignore them in economic analysis, and standard neoclassical arguments remain valid. However, when institutions work poorly, they must be considered explicitly.

Furthermore, the NIE focuses on the evolution of institutions rather than on the limits that they pose to economic development. In general, it is somewhat optimistic about the possibilities for the evolution of efficiency-enhancing economic institutions, but it also adapts to situations of political or cultural restriction on the evolution of institutions (Bodmer and Kobler, 2004).

Consequently, the NIE is linked to development by emphasising the elements of development management such as accountability, publicly known rules, information, and transparency. Moreover, the institutional framework needed to provide these public goods must be managed efficiently. Productive institutional arrangements will vary between countries by their cultural traditions and historical relationships. These will also continue to evolve as the economy grows and becomes more complex and more integrated with international markets (World Bank, 1992).

2.2.3: Development and Religion

According to McCleary and Barro (2006), religion has a two-way interaction with political economy. Friedman (2011), argues that the evolution of economics as we know it today has been shaped by changes in religious beliefs since Adam Smith who was the first to mention the role of the church and religions competition in *The Wealth of Nations*. Smith argued that religious competition is eventually good for the consumers of religion because it reduces the capacity of religious organisations to extract rents caused by weak governance. He was concerned that a monopoly of religious institutions could undermine a state.

Indeed, the relationship between religion, institutions and economics, is a debatable issue in the literature. The first group of arguments claim that religion has a positive influence on economic performance, while the other group is of the notion that religious norms are a key reason behind the backwardness for many countries.

For instance, Weber (1930) argued that the economic development of Western countries is a clear result of a Protestant way of life that encouraged its believers to take part in worldly activities and contribute to economic prosperity; thus, religious awareness was the driving force of the economic success that the West has attained. McCleary and Barro (2006) suggest that religious rewards and punishments could be seen as significant motivational factors behind

productive behaviour. They argue that believing in these institutions increases productivity via fostering individual traits such as honesty and work ethic. In their empirical analysis, a belief in hell comes to the fore as an influential factor for having preferable workplace ethics. In addition, Woodberry (2012) related missionary activity to the establishment of democratic institutions. He argues that "conversionary Protestants" influenced the development of democracy around the world because they supported particular activities which encouraged democracy, including liberty, education, printing, newspapers, voluntary organisations and reforms, and creating preconditions for the success of democratic institutions. Based on a sample of 142 countries, he noted that Protestant missions explain about half the variation in democracy in Africa, Latin America, Asia and Oceania.

On the other hand, Lerner (1958) argument mainly centres on the notion that there is an apparent trade-off between a capitalist economy and religious values since they are not compatible with each other. He explained that religion discourages human capital formation, limits experimentation and innovation, promotes hostility to commerce, and distorts markets by facilitating authoritarian governance.

With the availability of new data, most research in economics and religion has focused on the Western world (Iannaccone and Bainbridge, 2010; Iyigun, 2008). There is still a great need for studies in developing countries. From the perspective of emerging communities, religion is valuable because it illustrates how social norms might act as an informal coordinating mechanism. The kind of spontaneous social coordination that religion creates through increasing trust, morals, informal incentives or through imposing social sanctions are essential in these societies, especially when there is an absence of well-developed legal systems and formal markets (Chaney, 2013; El-Gamal, 2006; Iyer, 2016; Kuran, 2010).

Religion also affects community development by providing access to services. For instance, many religious groups have offered social services, such as education (Chaves, 2004; Hungerman, 2005). In the developing world, Hamas in Philistine has provided spiritual services alongside social services in the regions they operate (Berman, 2011). In India, religious networks are essential not only for the religious services they provide but equally and especially for their non-religious services, particularly concerning education and health (Iyer et al., 2014). Moreover, as religious institutions perform these functions, these networks might then determine the extent to which education or health-care is taken up, especially where these services are less well-provided for by the state (Nagaoka, 2012).

Therefore, the interaction between religion and development has been used to analyse the economic divergence between countries, especially for those states that have a religious character, and religion is embedded in the laws and daily transactions of individuals such as the Arab region (Erkoc 2019). The majority of people in the region adhere to Islam, and the religion has official status in most countries approximately one-quarter of the 1.5 billion Muslims in the Islamic world, and *Shariah* (Islamic law) exists partially in the legal system in all countries (Ismail, 2015).

Following the evolution of Islamic economics, we find that the first root is extended to the seventh century with the thoughts of earlier Muslim scholars such as Al-Ghazali, Ibn-Khaldun, and Ibn-Qayyim, however, a contemporary Islamic economics paradigm flourished in the second half of the twentieth century, after the independence of Muslim countries (Aström, 2011). Ahmed (2002) defined Islamic economics as “the science that studies the best possible use of all available economic resources, endowed by Allah, for the production of maximum possible output of Halal goods and services that are needed for the community now and in future and the just distribution of this output within the framework of shariah and its intents”. Asutay (2007) defines Islamic economics as a ‘system’ which owns its framework paradigm to the value system, foundational axioms – such as the doctrine of oneness (*tawhid*), justice and charity (*adl wa’l-ihsan*), self-development (*tazkiyah*), responsibility (*fardh*) - operational principles, specific methodology and functional institutions. Because of these characteristics, Islamic economics is seen as an alternative paradigm. Islamic economics kept the capitalist system responsible for the failure of development and the consequences of these failures, due to ignoring the cultural, religious heritage and their implications for the economy and economic development (Zaman, 2005).

On the other hand, s others have argued that Islam has a negative influence on the economic development of Muslim countries. For instance, Kuran (2018) explains why the west have done better economically than the Middle East or Muslim majority countries, as on the average, GDP per capita in the Organisation of Islamic Cooperation (OIC) was \$10,015 in 2014, whereas the world average was \$17,500, and \$42,216 for countries in the Organisation of Economic Cooperation and Development (OECD). Kuran suggests the Middle East institutions show many signs of economic backwardness mainly due to its social mechanisms and legal institutions which had stagnated. It is also argued that the difference between Islamic countries and the West is due to the ‘conservative nature of Islam, which hinders risk-taking in financial activities (Campante and Yanagizawa-Drott, 2015).

In contrast, Asutay (2007), however, describes a framework for an Islamic economic system that ‘provides the value system through which it [*Islam*] governs all forms of economic interaction in society’. Hence, the ethical base of Islamic economics promotes all stakeholders in society to comply with Islamic values in economic transactions. The failure of Islamic nations to compete with their Western counterparts in economic growth and development is the outcome of flawed capitalist economic development strategies, which do not take the nature of human beings into consideration. Asutay also states that institutions of Islamic economics and finance have effective tools to alleviate the adverse consequences of the ‘flawed capitalist system’ and establish moral standards within society.

Additionally, Rubin (2017) ruled out the very idea that ‘Islam is at the root of the divergence or, on the contrary, that Christianity is the cause of European success’. Rubin argued that the political authorities in the Islamic states used religion to maintain their status and rule; thus, the economic underdevelopment in this world depends heavily on the institutional trajectory rather than religion. This is the argument followed by this study that the quality of institutions is fundamental to a sustainable and inclusive development irrespective of the type of religion or no religion of a country, and this was what is carefully examined in this study.

2.3 The concept of Governance:

2.3.1 Defining Governance

Governance has its root in the word “govern” and is usually thought of as “government” though it transcends the former due to its complexity and as a universal force existing in all societies. The concept of governance is not novel. Initial discussions go back to at least 400 B.C. to the Arthashastra, a fascinating treatise on governance attributed to Kautilya, thought to be the chief minister to the King of India. In it, Kautilya presented key pillars of the ‘art of governance’, emphasising justice, ethics, and anti-autocratic tendencies. He further detailed the responsibility of the king to defend the wealth of the State and its subjects; to enhance, maintain and also safeguard such wealth, as well as the interests of the subjects (Kaufmann and Kraay, 2008, p. 7).

Although the concept of governance is usually discussed among policymakers and academics, there is yet no strong consensus around a single definition of governance or institutional quality. Various authors and organisations have produced a wide range of definitions. Some are so broad that they cover nearly anything, such as the definition to “manage human interaction and activities with several realities of the term ranging from related notions such as state governance, corporate governance, local governance, global governance, etc.” offered by Akpan and Effiong (2012). Others more narrowly focus on public sector administration issues, including the definition presented by the World Bank in 1992 as “the manner in which power is exercised in the management of a country's economic and social resources for development” (Kaufmann et al., 2010, p. 3).

The United Nations Development Programme (**UNDP**) describes governance as “the exercise of economic, political and administrative authority in the management of a country’s affairs at all levels. It comprises the complex mechanisms, processes and institutions through which citizens and groups articulate their interests, mediate their differences and exercise their legal rights and obligations” (Maurseth, 2007, p. 8). Whereas the **European Commission (2005, p. 5)** refers to governance as “the rules, processes and behaviour by which interests are articulated, resources are generated, and power is exercised within a society”. The **World Bank**, through its Development Institute’s Task Force on Governance views governance from both an analytic and operational framework (Resnick and Birner, 2006).

Therefore, governance can be defined as, “the traditions and institutions by which government in a country is exercised for the common good”. This includes the process by which those in

authority are selected, monitored and replaced; the capacity of the government to effectively manage its resources and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them (Kaufmann et al., 1999; Resnick and Birner, 2006) .

Following the above discussion, the current study will follow the Kaufmann et al. (2004) definition of governance as it include three key elements; (i) **political institutions** of a society - the process of collective decision-making and the checks on politicians, and a capable state operating under the rule of law, with emphasis on the role of democratic accountability of governments to their citizens; (ii) **state capacity** - the capability of the state to provide public goods in diverse parts of the country, and; (iii) **regulation of economic institutions** - how the state intervenes in encouraging or discouraging economic activity by various actors.

2.3.2 Sources of Governance Indicators

One of the most critical issues is Monitoring and Evaluation (M & E) of governance interventions and measurement of indicators of governance (i.e., metrics). This issue is seen as a necessary policy and programming thrust by many international organisations, investors, and aid donors to raise awareness, strengthen administrative systems, monitor the quality of governance, gauge the impact of interventions, justify the allocation of substantial funding to development assistance and to report on the effective use of funds to their constituencies. As international institutions development analysts have increasingly come to understand the importance of governance, they have sought to render the concept operational for decision-making purposes.

Governance indicators are a measure of the state of governance in a country and is often narrowed down to specific features such as levels of corruption, civil and political liberties, human rights, etc. Until recently, finding quantitative measures of any characteristics of governance was impossible, and no easy task as several of these characteristics are, in principle, multidimensional (Akpan and Effiong, 2012).

Many studies such as Kaufmann and Kraay (2008); Maurseth (2007); Oman and Arndt (2006); Williams and Siddique (2008) attempt to survey a large number of different indicators available. In the next few sections, we find it useful to look briefly at five of the most sources widely used in empirical research³.

³ Appendix 2.2 presents a comparative summary of the five different sources of governance indicators.

1) Freedom House

One of the most important sources of governance indicators is the Freedom House, whose annual ratings of political rights and civil liberties in 192 countries are widely used by journalists, analysts, and academics (Freedom House, 2015).

In its core publication “Freedom in the World”, Richter (2015) rates both a country’s political rights and its civil liberties on a scale of 1 to 7 (1 is the highest (best) level and 7 the lowest), and the average of the two ratings is used to designate the country’s status as “free” (a score below 3), “partly free” (3 to 5) or “not free” (above 5). The ratings are calculated based on in-house experts’ subjective perceptions organised according to a checklist of questions reportedly inspired by the 1948 United Nations’ Universal Declaration of Human Rights. The checklist on political rights comprises ten questions divided into three categories: the electoral process; political pluralism and participation; and the functioning of government, while the checklist on civil liberties comprises 15 questions in four categories: the freedom of expression and belief, people’s rights to associate and organise, the rule of law, and personal autonomy and individual rights. For each of the 192 countries (plus some disputed territories) it currently rates, Freedom House publishes both ratings and the country’s status annually as “free”, “partly free” or “not free”.

The Freedom House index does have its criticisms. According to Redek and Susjan (2005), the subjectivity involved when building the index brings in some measure of error and bias. Democracy is a multifaceted theme, and the index is argued to be based on a checklist, which includes limits on suffrage, freedom of the press, and restrictions on individuals running for office. In addition, the overall ranking done by the Freedom House can be debated to be entirely impressionistic. Nevertheless, as argued by Dridi (2013), the index is fashioned with the intention of consistency across time and countries, and this makes it suitable to use in a panel data set.

2) International Country Risk Guide

Another very important governance indicator since its inception in 1980, certainly for international investors, is the privately-owned International Country Risk Guide (ICRG) rating system. ICRG has furnished an international clientele with ratings affecting political risk, economic risk and financial risk for a universe of 140 developed, emerging, and frontier markets. Forming the basis of an early warning system, over 30 metrics are used to assess these types of risk, with projections framed in “best case” and “worse case” scenarios. This

provides managers with a probabilistic future in which to make judgments about risk management or insurance needs.

The Political Risk index is based on 100 points, Financial Risk on 50 points, and Economic Risk on 50 points. The total points from the three indices are divided by two to produce the weights for inclusion in the composite country risk score. The composite scores, ranging from zero to 100, are then broken into categories from Very Low Risk (80 to 100 points) to Very High Risk (zero to 49.9 points).

The system is based on a set of 22 components grouped into three major categories of risk: political, financial, and economical, with political risk comprising 12 components (and 15 subcomponents), and financial and economic risk each comprising five components. Each component is assigned a maximum numerical value (risk points), with the highest number of points indicating the lowest potential risk for that component and the lowest number (0) indicating the highest potential risk.

The ICRG staff collect political information and, financial and economic data, converting these into risk points for each individual risk component based on a consistent pattern of evaluation. The political risk assessments are made based on subjective analysis of the available information, while the financial and economic risk assessments are made solely based on objective data. In addition to the 22 individual ratings, the ICRG model also produces a rating for each of the three risk factor groups plus an overall score for each country.

After a risk assessment (rating) has been awarded to each of the 22 risk components, the components within each category of risk are added together to provide a risk rating for each risk category (Political, Financial, or Economic). The risk ratings for these categories are then combined by a formula to provide the country's overall, or composite, risk rating. However, as are all governance indicators, ICRG ratings are subject to non-negligible measurement errors. ICRG does not provide estimates of the size of those errors.

3) The Worldwide Governance Indicators

The World Governance Indicators (WGIs) dataset developed by World Bank researchers, Daniel Kaufmann, Aart Kraay and Pablo Zoido-Lobaton is the most comprehensive dataset on governance because it is an aggregation of a wide variety of data on 250 measures from 25 separate data sources including the Freedom House's civil liberties and political rights indices, and the ICRG (Kaufmann et al., 1999) .

The governance dataset captures three dimensions of governance: **(a)** the process by which governments are selected, monitored and replaced; **(b)** the capacity of the government to effectively formulate and implement sound policies; and **(c)** the respect of citizens and the state of institutions that govern economic and social interactions among them. The dataset measures six indicators (two each) corresponding to these dimensions by reducing the measures through an unobserved components model and is available since 1996.

The aggregate WGI measures in two ways: (i) in the standard normal units of the governance indicator, ranging from around -2.5 to 2.5, and (i) in percentile rank terms ranging from zero (lowest) to 100 (highest) among all countries worldwide. In addition, these six dimensions of governance should not be thought of as being somehow independent of one another. One might reasonably think for example that better accountability mechanisms lead to less corruption, or that a more effective government can provide a better regulatory environment, or that respect for the rule of law leads to fairer processes for selecting and replacing governments and less abuse of public office for private gain (Kaufmann et al., 2010).

4) Polity IV ⁴

Polity IV is one of the most popular governance dataset, which is compiled by the Center for International Development and Conflict Management at the University of Maryland in the USA that assesses the extent to which democracy is institutionalised. The Polity IV Project continues the Polity research tradition of coding authority characteristics of states in the world system for purposes of comparative and quantitative analysis (Marshall et al., 2012).

The Polity IV dataset covers all major, independent states in the global system since 1800 (i.e., states with a total population of 500,000 or more in the most recent year; currently 167 countries). With the support of the Political Instability Task Force, the Polity IV Project has been transformed into a living data collection effort, meaning that it constantly monitors regime changes in all major countries and provides annual assessments of regime authority characteristics, changes, and data updates.

Regarding the existence or absence of institutional features of the nation-state, competitive executive recruitment is measured by leadership selection through popular elections contested by two or more parties or candidates. Secondly, the openness of recruitment for the chief executive is measured by the extent to which all citizens have the opportunity to attain the position through a regularised process, excluding hereditary succession, forceful seizure of

⁴ For more information see: <http://www.systemicpeace.org/polity/polity4.htm>

power, or military coups. By contrast, autocracies are seen as regimes which restrict or suppress competitive political participation, in which the chief executive is chosen from within the political elite, and once in office, leaders face few institutional constraints on their power (Marshall et al., 2012).

In addition, the dataset constructs a ten-point democracy scale by coding: the competitiveness of political participation (1-3), the competitiveness of executive recruitment (1-2), the openness of executive recruitment (1), and the constraints on the chief executive (1-4). Autocracy is measured by negative versions of the same indices. The two scales are combined into a single democracy-autocracy score varying from -10 to +10 (North, 2005).

5) Transparency International ⁵

Probably no governance indicator attracts more media attention than the Corruption Perceptions Index (CPI) published annually since 1995 by Transparency International (TI)⁶. It is also widely used by investors, donors, analysts, and academics.

The CPI is constructed by compiling the results of different surveys of perceptions of resident and non-resident business people and expert assessments in order to provide a snapshot of perceptions of the degree of corruption prevalent in a country and then ranking the countries covered. The CPI ranks 180 countries by their perceived levels of corruption, as determined by expert assessments and 16 opinion surveys undertaken by ten different organisations. CPI consists of information taken from 14 sources developed by 12 independent institutions. The different sources measure the extent of perceived corruption both in the public and political sector. All the sources provide a ranking of countries. To determine the mean value for a country, a standardisation procedure is followed using the ranking of countries. This allows all scores to remain within the bounds used in the CPI, between 10 (no corruption) and zero (widespread corruption). Averaging over several sources will tend to reduce the standard deviation in the sampling. Therefore, a special procedure (a beta-transformation) is performed to increase the spread of the distribution (Porter et al., 2002).

- Concluding Remarks

The review of the various governance-related indicators in this section serve to highlight the fact that, even though there may be a wide acceptance that ‘governance matters’, there are still some important methodological issues that researchers need to bear in mind when trying to

⁵ For more information see: <http://www.transparency.org/>

⁶ Originally founded in Germany in May 1993 as a non-profit organization.

study these indicators. Undoubtedly, searching for a ‘perfect’ measure of governance is an exercise in futility, and it is unlikely such a measure will ever be developed. Nevertheless, the fact that a perfect measure is unattainable should not preclude us from trying to get as representative a measure as possible.

Therefore, researchers need to be aware of both the strengths and limitations of these governance measures, and to make sure that they are specific in which aspect of governance they are purporting to investigate, and whether the data they are using is as accurate a representation of this as possible. In addition, it must be noted that there is no ‘best’ or ‘worst’ governance measure to use. Given their respective strengths and limitations, it is left to the individual researcher to decide upon the most appropriate one for their particular study.

The current study will use the Worldwide Governance Indicators (WGIs) in the analysis, as it deals with governance with the same perspective that is a comprehensive system that includes inputs, process, and outputs. The six WGIs can also be classified as political, administrative and judicial. For example, the indicators for ‘voice and accountability’ and ‘political stability’ fall into the political category. The second dimension of governance pertains to the administrative capacity to implement policies. The two indicators that fall into this category are ‘government effectiveness’ and ‘regulatory quality’ which reflect a government’s ability to decide on and implement public policies. The last dimension of governance concerns the rules of society, property rights and anti-corruption policies, which represents through ‘the rule of law’ and ‘control of corruption’.

In addition, these indicators had been developed by a reputable international organisation (the World Bank) and had been widely used among policymakers and academics especially in empirical research, as we will mention later in the next chapter. Moreover, access to its dataset is easy and free. Next section will present a detailed discussion of the WGIs in terms of concept, its model and assumptions. In addition, some concerns about using the WGIs and how these were addressed in the current study.

2.3.4 The Worldwide Governance Indicators: A revisit

The six Worldwide Governance Indicators (WGIs) of the World Bank Institute, often also abbreviated by their original authors, Kaufmann, Kraay and Zoido (KKZ), are the most popular governance indicators. Publicly available and easily accessible, they are widely used to compare the quality of governance over time and across countries, for aid-allocation decisions, for risk ratings, for academic analysis and media articles. They summarise data from more than

30 expert assessments and household and firm surveys and have been available since 1996 for more than 200 countries (Oman and Arndt, 2006).

The discussion in this section will take an in-depth look at the strength and weaknesses of the WGIs. The first part explains why and how the WGIs were constructed and the second part discusses five concerns with the WGIs, of which it has been argued that users seem to be widely unaware.

2.3.4.1 Overview of the indicators

The WGIs indicators refer to a concept of governance that does not emerge from or imply, a theory of governance. The authors define governance simply as “the traditions and institutions by which authority in a country is exercised”, which is close to the current study definition. They interpret governance as six separate indicators, which follow the political process from the formulation of policy to its execution, and implementation. It is a three-step process, with two indicators for each. Inputs into the policy process are measured by voice and accountability, and political stability, while government effectiveness and regulatory quality measure the process of making and implementing policy, and the outputs are measured by the rule of law and control of corruption as follows (Kaufmann et al., 1999, pp. 7-8):

1) The Inputs into the policy process - The process by which governments are selected, monitored and replaced:

- **Voice and Accountability (VA):** The extent to which citizens of a country can participate in the selection of governments. Includes indicators are measuring various aspects of the political process, civil liberties and political rights, and the independence of the media.
- **Political Stability (PS):** Perceptions of the likelihood that the government in power will be destabilised or overthrown by possible unconstitutional and violent means, including domestic violence and terrorism.

2) The process of making and implementing policy - The capacity of the government to effectively formulate and implement sound policies:

- **Government Effectiveness (GE):** Perceptions of the quality of public service provision, quality of bureaucracy, the competence of civil servants, independence of the civil service from political pressures, the credibility of the government’s commitment to policies.
- **Regulatory Quality (RQ):** The incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development.

3) The outputs - the respect of citizens and the state for the institutions that govern economic and social interactions among them:

- **Rule of Law (RL):** Measuring the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence.
- **Control of Corruption (CC):** Perceptions of corruption defined as the exercise of public power for private gain, including both petty and grand corruption and state capture. The sources of data include surveys of firms and households, as well as the subjective assessments of a variety of commercial business information providers, non-governmental organisations, and some multilateral organisations and other public-sector bodies. Appendix 2.3 identified the full set of 38 sources of the WGI, and each of these data sources and provided with a set of empirical proxies for the six broad categories of governance⁷.

Some data sources provided by various nongovernmental organisations, such as Reporters without Borders, Freedom House, and the Bertelsmann Foundation, are also included. Finally, an important category of data sources is commercial business information providers, such as the Economist Intelligence Unit, Global Insight, and Political Risk Services. These last two types of data providers typically base their assessments on a global network of correspondents with extensive experience in the countries they are rating.

The aggregate WGI is measured in two ways: in the standard normal units of the governance indicator, ranging from around -2.5 to 2.5, and in percentile rank terms ranging from 0 (lowest) to 100 (highest) among all countries worldwide. The six dimensions of governance described above using a statistical tool known as an unobserved component model (UCM)^{8, 9}

2.3.4.2 Concerns

Although, the WGIs is a very useful first snapshot of experts' perceptions of a country's quality of governance, users often overestimate their explanatory power and use them for purposes they are not suited for. One major cause for the widespread misuse of the WGIs is that users are often unaware of one or all of the following five interrelated problems with the WGIs: i) violation of the key assumption of non-correlation of disturbances; ii) lack of transparency of the ratings; iii) subjective or objective measures; iv) whose perceptions are measured?; v) lack of comparability over time and across countries. These points were raised

⁷ For more information see www.govindicators.org

⁸ Unobserved components models were pioneered in economics by Goldberger (1972), and the loosely-related hierarchical and empirical Bayes models in statistics by Efron and Morris (1971 and 1972)

⁹ For more details see (Kaufmann et al., 1999)

in the book, “Uses and Abuses of Governance Indicators” by Arndt and Oman (2006). Kaufmann et al. (2007) refuted the criticism in their working paper, “The Worldwide Governance Indicators Project: Answering the Critics”. This debate can be summarised as follows:

I. Correlation of disturbances

The key assumption behind the weighting of sources and the computation of the standard error is that the measurement error is uncorrelated across sources and countries. There are several reasons why measurement errors tend to be correlated:

1. Experts who supply perception data used in one source are often informed of and influenced by the assessments of experts supplying such data for other sources
2. Experts who supply perception data for diverse sources are often informed of and influenced by perceptions and assessments from the same third parties.
3. Perceptions used as inputs for the WGIs are often influenced, significantly and in similar ways, both by crises (financial and/or political) and by perceived changes or longer-term trends in a country’s economic performance, FDI inflows, etc.
4. Because the interpretation of survey questions is context- and culture-specific, perception errors of different sources that rely on respondents from the same country or culture are likely to be correlated.

II. Lack of transparency

Some donors have come to give high importance to the use of relatively non-transparent indicators like the WGI or the CPI, paradoxically, trying to give transparency to their aid-allocation decisions. The reasons for the WGI’s lack of transparency are threefold: i) high complexity; ii) lack of reproducibility, and; iii) lack of underlying theory of governance.

III. Subjective or objective measures

The data are collected from many surveys and expert opinions that measure peoples’ perception of governance. Although objective criteria are believed to be better sources of information than perceptions, the reasons why perception-based indicators have become so common for governance indicators are, for some types of information, objective criteria are hard to collect, or they will be too expensive for cross-country studies. For instance, objective data on time spent on bureaucracy to start a firm can be collected by starting different types of firms in all countries. Clearly, it is simpler and cheaper to ask businessmen about their experience with it.

IV. Whose perceptions are measured?

In many governance indicator sources, surveys are based on questions to business people and very often to the “elite” among business people. Often, they are representatives of multinational companies, which may give biased results, while the good governance for companies need not be good governance for people.

They present three arguments on why they include surveys from the international business community as sources.

- First, they note that their composite indicators also rely on national surveys.
- Second, many of the firms included in the cross-country surveys of firms are small and national.
- Third, the extent to which the critique is right depends on the extent to which there are differences between the perceptions of business people and other people.

V. Lack of comparability over time

The WGIs cannot be used for direct comparisons of the quality of governance over time. An actual change in the level of governance is only one of three possible reasons for a change in a country’s rating on the WGIs.

A first possible reason is a change in the sources’ perceptions of the quality of governance without an actual change in the quality of governance. Secondly, a possible reason for a change is that other countries’ governance ratings changed. Since Kaufmann et al. (1999) construct each of their composite indicators in such a way that the average value of the indicator across all countries, worldwide, is always zero and its standard deviation is always one, changes in one country’s rating change the ratings of other countries, other things equal. A third possible reason is a change in the number and composition of sources from one year to the next.

In conclusion, regarding the concern about the reliability of the data, following review of the long debate of the methodology of governance indicators from different sources, the current study opines that no measure of governance can be 100% accurate or reliable. There are margins of error in any survey. Information on a country’s governance practices or its institutional and legal structures may be inaccurate, and the situation “on the books” may correspond poorly with reality.

The Worldwide Governance Indicators are unique in that they recognise and explicitly acknowledge these uncertainties. As discussed above, the estimates of the six dimensions of governance are accompanied by margins of error that indicate their degree of precision. Virtually no other governance datasets report margins of error. However, the absence of transparently reported that uncertainty is not evidence of accuracy. Because all efforts to

measure governance involve imprecision, caution should be used when making comparisons across countries and over time.

2.4 Governance and Economic Development: Theoretical Framework

As mentioned before in section 2.2.2, there are several economic development theories, and the most suitable and prominent for this study is the new institutional economics theory which highlights the importance of institutions and governance in development. This section provides an overview of the NIE theory with a concentration on the levels of analysis in institutional economics.

2.4.1 New institutional economics theory

2.4.1.1 Overview: The basic concept

Given the different ways that one can think of good governance, there are obviously a huge number of different potential theoretical mechanisms linking governance to development. The relationship between governance and growth can best be explained using the institutional economics theory. While the New Institutional Economics includes a diverse group of economists with significant differences and ongoing debates¹⁰, the theoretical foundations of the original institutionalists still matter and have re-emerged in the mainstream economic thought following the works of North (1990).

As mentioned earlier in this chapter, the new institutionalism extends the range of neoclassical theory by highlighting the importance of institutions that are fundamental to the effective functioning of market-based economies, such as law and order, property rights, contracts and governance structures. According to North (2005), the institutional structure is a combination of formal rules (constitutions and laws), informal constraints (norms of behaviour, conventions, codes of conduct), and their enforcement characteristics. The new institutionalists argue that institutions matter in shaping national economic behaviour and overall performance. A further illustration of this is provided by Redek and Susjan (2005) showing that institutional economics is complementing modern growth theory in explaining the process of economic growth. They argued that development is caused by a society adopting institutions and policies that create incentives for its citizens to save, invest, and innovate.

¹⁰ Williamson (2000) includes six Nobel Laureates among key figures in the new institutional economics: Kenneth Arrow, Friedrich Hayek, Gunnar Myrdal, Herbert Simon, Ronald Coase, and Douglass North.

Economic institutions and policies are endogenous and are determined by the collective choices of society. Governance refers both to these choices, such as whether to build an effective bureaucracy or establish the rule of law. It also refers to parts of the institutional nexus, which leads to these choices by influencing who has power and how it can be exercised. Clearly, there is no guarantee that all individuals and groups will prefer the same set of economic institutions because; different economic institutions and policies lead to different distributions of incomes and power. Consequently, there will be a conflict of interest over the choice of economic institutions. In such a situation, it will be the inherited distribution of political power in a society that determines what institution has been chosen. The group with more political power will tend to secure the set of economic institutions and policies that it prefers (Baland et al., 2010).

2.4.1.2 Levels of Analysis in Institutional Economics

The NIE consists of four different levels of analysis, which is emphasised by Williamson (2000, p. 597) to unify the aspects of the jurisprudence, the economics and structural theory. Each level has a controlling influence on the level below it, and there are also some feedback effects from lower levels to higher levels, as shown in Figure 2.1. The upward arrows connecting a higher level with a lower one indicates that the higher level sets limits to the level directly below it. The downward arrows, connecting the lower levels with the higher ones, represent the feedback. The theory has focused primarily on analyses of aspects of institutional arrangements that fall in level 2 and level 3 of this hierarchy (or both).

This framework developed by Williamson is widely recognised, not only because it distinguishes between different levels of analysis that correspond to different types of institutions, but also because it links the different levels with different frequencies of change in observable characteristics, different possibilities of purposeful institutional design as well as different theories to investigate institutions at the different levels.

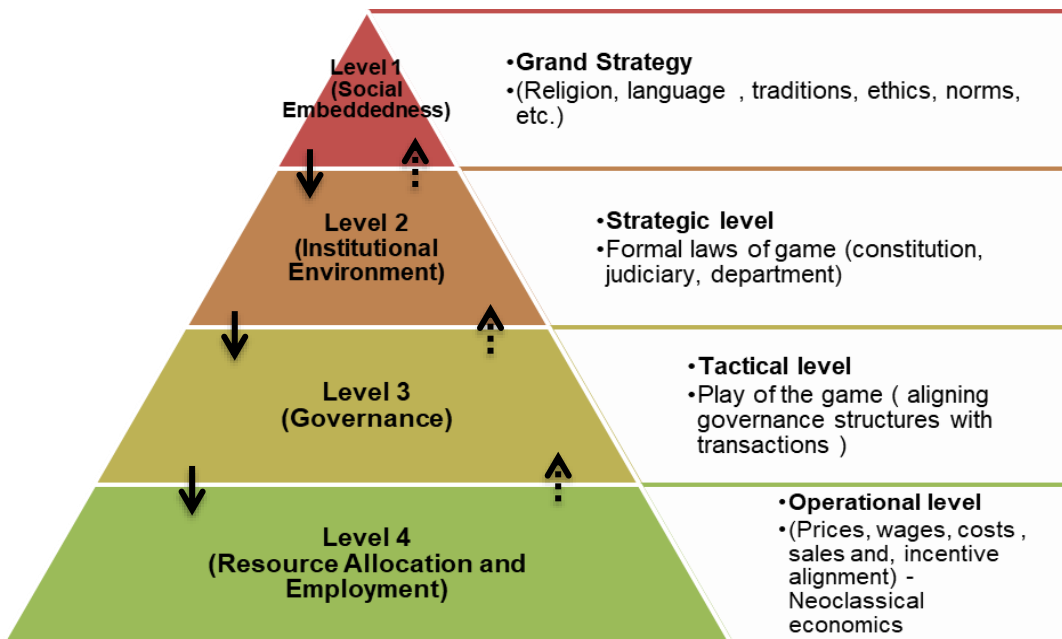
- **Level One: Embeddedness¹¹ or Social/Cultural Foundations.** The highest level of the institutional hierarchy encompasses informal institutions, customs, traditions, ethics and

¹¹ **Embeddedness** refers to the degree to which economic activity is constrained by non-economic institutions. The term was created by economic historian Karl Polanyi. He argued that in non-market societies there are no pure economic institutions to which formal economic models can be applied. In these cases, economic activities such as "provisioning" are "embedded" in non-economic kinship,

social norms, religion and some aspects of language and cognition. This level provides the basic foundations for a society's institutions. These basic social and cultural, institutional foundations change very slowly over time.

- **Level Two: Institutional Environment.** Within the constraints imposed by the embeddedness level, the “formal laws of the game” develops into the institutional environment. At this level are defined constitutions, political systems and basic human rights; property rights and their allocation; and related institutions to enforce political, human rights and property rights, basic financial institutions, and the government’s power to tax; laws and institutions governing migration, trade and foreign investment rules; and the political, legal and economic mechanisms that facilitate changes in the basic institutional environment. The nature of the basic institutional environment at any point in time reflects, among other things, the attributes of a society’s basic social and cultural foundations. Changes in this level occur more quickly than changes in the cultural or social foundations (Level 1), but change is still relatively slow and partially constrained by the slow rate of adaptation of the underlying social and cultural foundations.

Figure 2.1: Levels of social analysis



Source: Designed by the author following Williamson (2000, p.597)

religious and political institutions. In market societies, in contrast, economic activities have been rationalized, and economic action is "disembedded" from society and able to follow its own logic, captured in economic modelling.(Plattner, 1989, pp. 11-15)

- **Level Three: Institutions of Governance.** This level defines “the play of the game.” Given the basic institutional environment, choices are made regarding the institutional (governance) arrangements through which economic relationships will be governed given the attributes of the basic institutional environment. The basic structural features of the institutions (e.g. competitive markets) through which individuals trade goods, services and labour are defined; the structure of contractual/transactional relations, the vertical and horizontal structure of business firms and the boundaries between transactions mediated internally and those mediated through markets; corporate governance, and financial institutions that support private investment and credit, are defined at this level. The choice of governance arrangements is heavily influenced by the basic institutional environment as well as by a country’s basic economic conditions (e.g. natural resource endowments) at any point in time. Changes in governance arrangements also take place more quickly than do changes in the basic institutional environment.
- **Level Four: resource allocation (neoclassical market economics).** Thus, depending on the whole institutional environment set by its social embeddedness, the formal institutional environment and the governance structures in place, within this structure, ‘economising’ in the sense of maximising is assumed when the marginal conditions are met, that is, where marginal benefits equal marginal costs. This is the main research domain of neoclassical economics. This level refers to the day-to-day operation of the economy, given the institutions defined at the other three levels. Prices, wages, costs, quantities bought and sold (distribution of resources, goods and services in general) are determined here as are the consequences of monopoly, oligopoly, and other neoclassical market imperfections. Williamson would include agency theory and incentive alignment within and between organisations here.

2.4.2 The social order school of thought

There are several theories incorporated in the NIE emanating from various disciplines in the social sciences, as well as from interdisciplinary perspectives. Thus, several schools of thought already exist, as well as others that are emerging. However, this part of the chapter outlines the ‘social order’ school, which emphasise the role of governance in development. This school is not only the most recent but also the most creative, robust and interesting theory on the overall subject. It is provided by North (North et al., 2008; North et al., 2009). He divides the world’s countries into two parts: 85% of the world’s population have a social order that first appeared

about ten millennia ago and existed to this day in various forms or stages that are part of the '**natural state**' (which replaced the primitive or first social order). The remaining representing about 15% of the global population, are characterised by the third social order, which first emerged in a few societies at the end of the eighteenth and beginning of the nineteenth centuries – the '**open access**' society.

The "**open access**" societies characterised by high standards of political and economic development, rich and vibrant civil society with many organizations freely set up to pursue either profit or the common good, or both, large and typically many-layered governments, and "widespread impersonal social relationships, including rule of law, secure property rights, fairness, and equality". The open-access order builds on the organisational achievements of the natural state but extends citizenship to an ever-growing proportion of the population. All citizens can form economic, political, religious, or social organisations to pursue any number of functions. Social order is maintained through the interaction of competition, institutions, and beliefs. Control of the military is concentrated in government, and control over the government is subject both to political competition and institutional constraints.

The other class of "**natural states**" is acknowledged to be heterogeneous; however, it is stable but not static. It has common closed institutions and the lack of rights distinct from personal status and family power. The natural state provides a solution to violence by embedding powerful members of society in a coalition of military, political, religious, and economic elites, limiting access to activities, organisations, and privileges produce rents for elites. Personal relationships in natural states result from traditional face-to-face interaction. In well-developed natural states, elite privileges include control over powerful social organisations, such as the church, governments, courts, and military units.

Societies do not leap from limited to open access. Transitions occur in two steps where first the relations within the dominant coalition transform from personal to impersonal, and then those arrangements are extended to the larger population.

In conclusion, North school highlighted three of the doorstep conditions which are consistent with the logic of the natural state. The establishment of laws and courts is the means by which the dominant coalition regularises relations among elites. Perpetually lived organisations are a vehicle for limiting entry and systematically generating rents. Consolidating military power under control of the political system creates a monopoly on violence that reduces the frequency of violence in a state. Combined, the three doorstep conditions create the possibility of

impersonal relationships within the elite, even though that was not necessarily the result elites intended. In addition, the most important distinction here is not between state and market but between personalised control of closed institutions and open-access institutions of both state and market.

2.5: Summary and underpinning theory of the research

This chapter has briefly examined three major theories of development in the economics literature. First are the neoclassical theory and its extensions, which stress the accumulation of physical and technological change as the ingredients for economic development. This view ignores the impacts of other factors, such as institutions and natural endowments. Next is the endogenous theory of development, which holds that investment in human capital, innovation, and knowledge are significant contributors to development. The theory also focuses on the positive externalities of a knowledge-based economy, which will lead to economic development. The third is the institutional theory of development, which contends that institutional arrangements determine the incentive structure faced by agents in an economy and are thus directly responsible for economic performance.

The three major theories are not necessarily contradictory but are more likely to be complementary in gaining a more comprehensive understanding of comparative economic development. While the endogenous theory of development contends that human development has a direct impact on economic development, some researchers have argued that the influence on economic performance is indirect through their influence on institutional development, with the basic premise being that they create a natural environment for the establishment of different types of institutional arrangements (Sokoloff and Engerman, 2000). Therefore, there is the need to account for the three views in advancing a more comprehensive institutional view of comparative development than exists in the current literature.

The ultimate aim of the current study is to design a developmental framework which integrates the traditional factor of development (economic growth), with other endogenous factors of development such as institutions. New institutional economic theory will be used basically as the theoretical background for the analysis for the reason that it combined the basic concepts of development and extended by focusing on the social and legal norms that underlie economic activity.

Indeed, achieving economic growth without realising the real meaning of development from a macro perspective with poor governance is catastrophic. For instance, a misunderstanding of the concept of development and neglecting governance aspects significantly contributed to the emergence of the popular Arab revolts in 2011. While some of the Arab Spring countries reported high economic growth, particularly in their GDPs, before the revolts, the wealth did not trickle down to the average Egyptian, Tunisian or Syrian. The only group that benefited from this growth was the economic-political elite, which owned and controlled much of the economy (Malik and Awadallah, 2013).

Chapter 3

Governance and Development: Empirical Evidence

Chapter 3: Governance and Development: Empirical Evidence

3.1: Introduction

In recent decades, a surge of interest in governance has been seen as a means to promote economic development. Governance matters have been an integral part of societies since the dawn of civilisation, and especially so with respect to what values, ethics and rules of conduct and justice should be upheld, how societies should be organised, and who should hold power and authority.

Within this broad context, the purpose of this chapter is to complete the discussion of the previous chapter on the role of governance in development but from an empirical perspective. The chapter illustrates the debate on the effects of various measures of governance and their impact on development by presenting and evaluating the growing body of empirical literature that has examined this relationship. Appendix 3.1 presents a summary of these relevant and current empirical studies on governance and development. The importance of this chapter is also to support the analytical chapter that follows through providing an in-depth discussion of different econometric models, estimation techniques, and methods, which has been used before by other authors.

Most of the recent empirical studies have focused on the relationship between governance and economic growth as a key measurement of development, while a few investigate the evidence on the governance-development from a wider perspective.

The chapter is critically assessing the governance-economic growth, how previous empirical studies have examined the relationship by their utilisation of panel data analysis and different proxies for governance (Appendix 3.1). The majority of the studies used governance and institutions directly in their analysis, while others used different proxies, for instance, economic freedom, corruption, democracy, and regulations.

3.2: Empirical evidence on governance and economic growth

The principal empirical research puzzle can be stated simply as follows: Does growth underwrite governance? Alternatively, does governance probity promote growth? Alternatively, is there strong apparent linkage related to unexplored exogenous factors?

While the questions are easy to ask, they are difficult to answer. To begin with, while growth can be measured straightforwardly, governance and quality of institutions are much more problematic. Moreover, to the extent that current explanations suggest that probity promotes long-term economic development, evaluating the direction of causality (from growth to governance or the reverse, and in what proportion) relies on the ability to find appropriate instruments that are correlated with, for example, governance, but unrelated to development. This search has proven to be difficult indeed, as nearly all the factors that are related to growth are also typically correlated with measures of governance

According to Aron (2000) and Gagliardi (2008) who provide an excellent review and also empirical evidence of governance and economic growth, there are numerous studies in the literature which have assessed the role of institutions in economic growth. The main conclusion that has emerged is that governance is positive and statistically significant determinants of economic growth. Conversely, a few studies such as Commander and Nikoloski (2011); Glaeser et al. (2004); Huynh and Jacho-Chávez (2009) reported that there is no significant relationship. These results may be explained by the unresolved debate on the potential role of democratic institutions on growth.

Several empirical studies on the links between institutions and economic performance employ pure cross-sectional approaches, such as Knack and Keefer (1995), and Grogan and Moers (2001). These studies verified that economic growth leads to better institutions due to the accumulation of human and social capital. This view is supported by Barro (1996a) who found the same result from a political science perspective that democratisation follows income. As countries become wealthier, on average, they also become more democratic, granting more political freedoms to their citizens. Easterly and Levine (1997) confirmed that conventional factors, such as physical and human capital and labour supply, do not entirely explain the growth in Africa and instead emphasise institutional explanations. Recently, Abdelbary and Benhin (2018) estimated the Total factor productivity (TFP) function for 97 countries including 19 from the Arab Region; they found the return of human capital for Arab countries is smaller than the whole world sample, which reflects the poor quality of human resources and its effect on production output. The results focus attention on institutional reform as the key to economic progress so that future increases in the physical and human capital will generate positive social returns as well as private ones.

Although the relationship between governance and economic development is well documented, the positive associations are insufficient for establishing the direction of causality between the

two variables because the cross-section nature of the technique employed in the literature does not allow different countries to exhibit different patterns of causality (Law et al., 2013). Moreover, the result of cross-section analysis can quickly change with an addition to or reduction in the number of countries. On the other hand, using time series data remains extremely sparse. This limitation can be attributed to the scarcity of sufficiently long time-series governance indicators.

3.2.1 Governance/ Institutions and Economic Growth

3.2.1.1 Causality in one direction only: Governance and growth

An early contribution to the effect of the quality of governance on growth and development includes Campos and Nugent (1999); Kaufmann et al. (1999); Knack and Keefer (1995). They examined their respective association on three development indicators: per capita income, infant mortality and adult literacy. They found that a one-standard-deviation increase in any of the six indicators of governance caused between a two-and-a-half to four-fold increase in each development indicator and concluded that governance matters for growth and development.

One of the landmark paper is Seldadyo et al. (2007). The main contribution was introducing a new governance index generated using confirmatory factor analysis on ICRG governance indicators. The research focused on ICRG data as these are the only governance indicators available for a long time-span, and that also includes a large group of countries. They found that the five dimensions of governance can be combined into one single index, and by using parsimonious models showed that this constructed index positively and significantly explains economic growth. In addition, the study tested the robustness of results by applying recursive regressions and the sensitivity test of Sala-i-Martin (1997) and applied the same test to varying samples. The major finding was that the impact of the new index on economic growth is fairly robust. Law and Bany-Ariffin (2008) also demonstrate the same results using the same dataset and classified countries into three groups. Using Pooled mean group (PMG), and Panel Generalized Method of Moments (GMM), the study found that institutions are more responsive to middle income and low-income groups, and the effects of institutions in high-income countries are smaller than for these two other groups.

Furthermore, Arndt (2009) also relied on a panel data model with a time-recursive structure to identify the effect of governance on economic growth over the policy-relevant periods of one or two decades. Besides that, Arndt attempted to address some related econometric problems

such as dealing with heterogeneity in the form of unobserved effects and treated the endogeneity due to measurement errors in initial income by standard instrumental variables methods. The study model examined the robustness of the effects of the rule of law indicators on economic growth from 1946 to 2006 for a sample of more than 200 countries. However, the study found a striking lack of confirmation of a systematic and measurable effect. Arndt claimed that improving the rule of law should be the policy priority in all developing countries.

Glaeser et al. (2004) took the example of South and North Korea to claim that it is not the institution that causes growth; instead, it is economic growth that brings in institutions like democracy, as in the case of formerly authoritarian states like South Korea. While the case of the two Koreas can be an example to argue against the institution primacy view of economic growth, it can also serve as a powerful case to argue for the importance of economic policies. The two Koreas have obviously pursued quite different growth strategies. However, if we confine ourselves to comparing the two Koreas, it is not easy to disentangle the influence of policies from that of institutions because institutions, such as the protection of private property rights, also differ markedly between the two Koreas.

On the other hand, Glaeser et al. (2004, p. 272) argued that institutions are not nearly as important to growth as commonly thought, while using three different datasets (ICRG: 1982–1997, WGI, 1998–2000, and PolityIV, 1960–2000) for 71 developed and developing countries. They pointed out that “as a society grows richer, institutional opportunities improve”. As people become richer, they demand more from their public institutions – better bureaucratic qualities, regulations, more security, and law and order. The study suggests that: (a) human capital is a more basic source of growth than institutions, (b) poor countries get out of poverty through sound policies, often pursued by dictators, and (c) subsequently improve their political institutions.

On the other hand, Lee and Kim (2009) revisited the recent debate on the determinants of long-term economic growth with the simple idea that different factors matter for different country groups in relation to income levels. It is also attempted to improve the methodology to verify the hypotheses not only by cross-section estimations but also by the fixed-effects panel and system-GMM estimations in order to be safe from possible biases associated with cross-section estimations such as small sample bias, omitted variables problem, and endogeneity of explanatory variables. The study found that both institutions and policies (e.g., education variables) matter as determinants of long-run growth. These results provide a compromise view for the two contrasting findings in the literature: the Rodrik et al. (2004) findings that argued

for the importance of the institution and those of Glaeser et al. (2004) that argued for the importance, not of the institution but human capital. Recently, Huang and Ho (2017) examined whether a Granger causality running from governance to economic growth exists in twelve Asian countries, throughout 1996–2014. The empirical outcomes have shown, different dimensions of governance lead to more significant economic growth in “Not Free” states when compared to “Free” and “Partly Free” states. The study recommended that policymakers in “Not Free” countries should opt to pay more consideration to the quality of governance, particularly around government effectiveness and the rule of law, to improve the future growth rate of real GDP per capita.

3.2.1.2 Bi-directional relationship or Causality in both directions

Some studies have found that there is bi-directional causation between governance and economic growth (Chong and Calderon, 2000; Grogan and Moers, 2001; Law et al., 2013; Lee and Kim, 2009). The first systematic study of causality between institutions and growth was conducted by Chong and Calderon (2000), utilising the Business Environment Risk Intelligence (BERI) and ICRG institutions datasets. Their empirical findings demonstrate that the poorer the country and the longer the wait for institutional development, the higher the influence of institutions on economic growth. They also explained the existence of two-way causality; not only do institutions Granger cause economic growth, but economic growth also contributes to institutional quality improvement.

Lee and Kim (2009) applied Panel GMM causality methods to examine this relationship using a sample of 63 countries for the period 1965–2002, categorised into four income groups: high, upper middle income, low, and lower middle income. They further divided the sample countries into two groups, namely higher-income countries (high and upper middle income) and lower-income countries (low and lower middle income). The outcomes suggest that the causality patterns between both variables are highly heterogeneous, whereas there is a bi-directional causality effect between both variables in the full sample countries. In addition, this paper finds that while secondary education and institution turn out to be important for lower-income countries, an emphasis on technology and higher education appears to be effective in generating growth for the upper-middle- and high-income countries but not for the lower middle and low-income countries.

Similarly, Law (2013) made the same observation using the same sample size and classification but by using the panel Granger causality test, which takes into consideration panel heterogeneity. The findings also suggested that causality patterns between institutions and economic performance vary at different stages of income level. Better institutional quality fosters economic development in higher-income countries, whereas economic development tends to enhance institutional quality in lower-income countries.

3.2.1.3. Insignificant relationship

Despite the outcomes of the above studies, the governance-growth relationship does not provide clear-cut conclusions about the relevance of governance for growth. A few other studies, such as Huynh and Jacho-Chávez (2009), Commander and Nikoloski (2011), found some governance indicators are insignificant. Huynh and Jacho-Chávez (2009) using nonparametric methods found that only three of the six measures: voice and accountability, political stability, and the rule of law are significantly correlated with economic growth. Regulatory control, control of corruption, and government effectiveness were found to be insignificant. In addition, the empirical relationship between voice and accountability, political stability, and growth are highly nonlinear.

3.2.2 Economic Freedom and Economic Growth

Economists agree that economic freedom, along with political freedom and civil liberties, is one of the pillars of a country's institutional structure, and following from this, institutions are amongst the prominent factors in explaining cross-country differences in living standards. A significant body of research indicates that economic freedom enhances economic growth.

Farr et al. (1998) discovered a Granger causal relationship working from economic freedom to economic well-being and Justesen (2008) furnished empirical evidence supporting the idea that free markets and maintenance of property rights foster economic growth.

In addition, Baumol (2002) stressed that the free-market economic system acts as a powerful innovation machine in societies where the rule of law prevails. Dutz and Hayri (2000) found a high correlation between long-term growth and effective enforcement of antitrust and competition policy. Dawson (2003) analysed the causality between economic freedom and growth using panel data analysis. He showed that the levels of freedom are related to free markets and the protection of property rights. These two factors are derived from the causal relationship that exists between economic freedom and economic growth. A measure of civil liberties that affect economic freedom has also been found to affect growth directly.

Another important study was conducted by Justesen (2008), who examined whether economic freedom causes economic growth or whether causality runs in the reverse direction. The study conducted a series of Granger causality tests using panel data analysis for the period 1970–1999. The results suggest that some but not all aspects of economic freedom affect economic growth and investment. However, he found there was only weak evidence that growth affects economic freedom. The study concluded that economic freedom matters for economic growth, but certain sub-freedom indicators play a more significant role than other sub-indicators in fostering economic growth in a causal sense.

Two recent studies Bayar (2017); Ozcan et al. (2017), have used panel Granger causality approach to investigate the impact of openness and economic freedom on the economic growth for 17 post-socialist transition economies during the period from 1996 to 2012. Both studies showed a long-run relationship among the variables and both economic freedom and trade openness have a positive impact on economic growth. However, the first one found that financial openness has a negative influence on growth and the second study referred to political freedom in transition countries was neutral for economic growth; but changes in the level of political freedom are affected by economic growth.

3.2.3 Democracy \ Political Freedom and Economic Growth

One of the essential dimensions of governance is a democracy. Since Seymour Martin Lipset's (1959) seminal work on the socioeconomic prerequisites of democracy, a substantial number of social scientists have theorised and empirically tested theories about the relationship between democracy and economic development. In the empirical literature, there is no consensus about the relationship between democracy and economic growth. Generally, the contemporary discussion on this issue may be separated into three groups of views, depending on the kind of impact democracy exercises on growth: positive, negative, or neutral.

According to the first group of views, democracy is a factor accelerating the increase in welfare; (Acemoglu et al., 2008; Barro, 1999; Benhabib et al., 2013; BenYishay and Betancourt, 2010; Che et al., 2013; Djezou, 2014; Jaunky, 2013; Justesen, 2008; Piatek et al., 2013; Rodrik and Rigobon, 2005; Trebilcock and Prado, 2011). Friedman (2009) believed that democracy and economic freedom are mutually reinforcing. Under this hypothesis, democracy should facilitate economic growth through the development of an institutional framework more compatible with incentives to engage in productive transactions. In other words, democracy is a political system

that allows markets to perform adequately. In the discussion of this question, Rodrik (2000); Rodrik and Rigobon (2005) reach a suggestive empirical conclusion: participatory democracies favour what they call “higher-quality growth”. That is more predictable long-term growth rates, greater short-term stability, better resilience to adverse shocks, and more equitable distribution of wealth. The implication is that democracy helps build better institutions because it works as an efficient meta-institution for eliciting and handling local knowledge.

Moreover, Knutsen (2009) found robust empirical support in that democracies produce higher economic growth through improved technical change than autocracy. A positive theory of democracy can also be reinforced by the underlying arguments of the institutional theories. Benhabib et al. (2013) argued that citizens of wealthier countries, who generally have high levels of human capital and income, are more effective at creating and sustaining democratic institutions.

Furthermore, in their recent pioneer study four leading institutional economists (Daron Acemoglu, Suresh Naidu, Pascual Restrepo and James A. Robinson(2019), have provided additional evidence that democracy has a positive effect on GDP per capita. They used a new strategy to reduce measurement error that consolidates previous measures, by combines information from several datasets, including Freedom House and Polity IV. The study adopted an annual panel that comprises 175 countries from 1960 to 2010. The results show that once the dynamics of GDP are controlled for in a fixed-effects OLS regression, GMM estimates and semiparametric estimators, there is an economically and statistically significant positive effect of democracy on future GDP per capita. Additionally, they proved that democratisations increase GDP per capita by about 20 per cent in the long run — the same effects found through an instrumental-variables approach using regional waves of democratisation. The effects are similar across different levels of development and appear to be driven by higher investments in capital, schooling, and health.

The group that argues a negative relationship suggest that democracy contributes to a slowdown in economic growth (Rodrik et al., 2004). Indeed, many low-income countries with a large proportion of less-educated people are governed by democratic institutions, which have been imposed by former colonialists (Barro, 1996b). According to Keefer (2007), democratic regimes discourage investment, as governments tend to give priority to current consumption in order to ensure their re-election.

The weak points of the economic system with democracy mentioned in the relevant literature include a low rate of investment and excessive consumption, yielding to the demands of pressure groups, and problems with social, ethnic and class conflicts (Feng, 2005). Hence the conclusion that only under a system of dictatorship is a government able to conduct an efficient economic policy aimed at accelerating the pace of economic growth (Kurzman et al., 2002). Authoritarian governments are more resistant to the influence of pressure groups and do not allow social conflicts, although this is often achieved through repression. The abuse of power in such states is highly possible, and the behaviour of dictators hardly predictable. The uncertainty of governance leads to a decrease in investment and retards economic growth (Doucouliagos and Ulubasoglu, 2006).

The third group of researchers are of the view that democracy is not a variable which significantly influences the speed of economic growth. Barro (2003) emphasised that there are variables more important for economic growth than democracy per se, these being the rule of law, secure rights of economic freedom and property, and macroeconomic stabilisation. He claimed that democracy is not a necessary condition for economic growth but the belief that only authoritarian conditions enable growth out of poverty is also wrong. Bhagwati (2002) also pointed out that democracy does not necessarily increase the pace of economic growth. Unlike Barro, Bhagwati perceives democracy as one of the conditions of stable development, which should be accompanied by a free market economy.

In conclusion, based on the literature, it is difficult to precisely determine the impact democracy has on the pace of economic growth. This divergence of views on the relationship between these two variables is related either to the data and variables used in the study, the characteristics of the countries under study or the model specification (Paldam and Gundlach, 2008). Moreover, establishing the causal effect of economic growth on democracy is challenging because of endogeneity problems like omitted variables and reverse causality issues.

In any case, this current research follows the first group of researchers and hypothesises that democracy has an indirect effect on growth; Democracy is more likely to lead to greater spending on education and health, both of which facilitate economic growth. Moreover, democracy facilitates political stability, which is also known to be good for economic growth.

3.2.4 Economic Freedom / Democracy and Economic Growth

As mentioned above, several studies have established a link between the economic freedoms of various sorts and economic growth. Some of these studies observed that the first causal chain is via strong democratic institutions, which determine strong economic freedoms, and in turn, lead to more rapid economic growth as follows:

Democracy → Economic Freedom → Economic Growth

With respect to civil liberties and political rights, some authors pointed out that democracy needs more time than economic freedom to produce an impact on economic growth (Farr et al., 1998), and hence furnish grounds for credibility. Credibility plays a fundamental role in how economic agents make investment decisions in physical capital. For example, where political freedom is in the process of expansion, agents need a relatively long time to determine whether the change is permanent, and not temporary, before modifying their investment decisions.

Other empirical papers confirmed that liberalising the economy is an essential first step before the extension of political rights can generate growth (Giavazzi and Tabellini, 2005; Persson and Tabellini, 2006). Furthermore, in their comprehensive analysis of the causal relationships between democracy, economic freedom, and growth, Vega-Gordillo and Alvarez-Arce (2003) found that political and economic freedoms appear to enhance economic growth. In addition to the significant positive correlation found, the study showed that the impact of economic freedom on economic growth nearly doubles the effect of political freedom. That is, free-market institutions boost growth more than democracy does. Also, the results of a review of the interaction between political and economic freedoms are enlightening.

On the one hand, economic freedom enhances political freedom at the same time that more democratic institutions provide for greater economic freedom. Even if economic prosperity is the primary concern when some liberalisation processes are implemented, regardless of their impact on political rights, greater political freedom could be achieved in the end too. On the other hand, societies can capitalise on political freedom to enhance economic freedom. Given these considerations and the intrinsic value of democratic liberties, economic reforms should go together with democratisation or, at the very least; democratisation should not be postponed under the weight of economic arguments.

3.2.5 Corruption and Economic Growth

Economic theory and empirical evidence both demonstrate that there is a direct causal link between corruption and economic growth. Chetwynd et al. (2003) describe in-depth how corruption affects poverty by first impacting economic growth. They noted that corruption impedes economic growth by discouraging foreign and domestic investment, taxing and dampening entrepreneurship, lowering the quality of public infrastructure, decreasing tax revenues, diverting public talent into rent-seeking, and distorting the composition of public expenditure. In addition to limiting economic growth, there is evidence that corruption also exacerbates income inequality; regression analysis showed a positive correlation between corruption and income inequality.

Evrensel (2010), using empirical analysis of 121 countries (31 developed and 90 developing countries), provided explanations for this link. They argued that corruption distorts the economy and the legal and policy frameworks allowing some to benefit more than others; there is an unfair distribution of government resources and services; corruption reduces the progressivity of the tax system; corruption increases the inequality of factor ownership, and lower-income households (and businesses) pay a higher proportion of their income in bribes than do middle or upper-income households. Regarding the relationship between the governance-related variables and growth rates, they found only corruption control and government effectiveness significantly and adversely affect the average growth rate. Regarding the relationship between growth volatility and governance-related variables, the results suggested that higher corruption control, expropriation risk control, government effectiveness, and government consumption decrease growth volatility.

Méndez and Sepúlveda (2006) also argued that the relationship between corruption and growth is non-monotonic (quadratic) and that this relationship depends on the degree of political freedom. They showed that corruption has a beneficial impact on long-run growth at low levels of incidence but is harmful at high levels, and therefore, there may exist a growth-maximising level of corruption. Importantly, this effect is only robust in a subsample of countries with a low degree of political freedom; elsewhere, the relationship between corruption and growth is not robust. Using a different definition of political institutions, there was a similar result, namely that in countries with high-quality institutions, corruption has a significant, negative impact on growth and conversely that growth reduces corruption; while in countries with low-quality institutions, corruption has, in contrast, no impact on growth.

On the other hand, Khamfula (2007) observed that corruption could increase economic efficiency. This comes as a result of the use of "fast money", allowing entrepreneurs to avoid bureaucratic delays in exchange for money. Corruption in some economies allows firms to avoid overly restrictive regulations or confiscatory tax rates. However, this second position is problematic because it does not consider the incentive for all officials to get into the corruption game, the result of which is excessive taxation on productivity. Further, most of those arguing the benefits of corruption regularly point out that it is not the ideal, but perhaps better than a rigid, inefficient bureaucracy.

In their recent analysis, Baklouti and Boujelbene (2015); Saha and Ben Ali (2017), suggest that there is a bi-directional causal relationship between economic growth and the index of perception of corruption in 12 MENA countries by using simultaneous-equation models over the period 1998–2011. They also confirm that the relationship of corruption on economic growth is negative and significant for the MENA countries. Therefore, the current research holds that corruption will have a negative impact on GDP growth, holding other variables constant.

3.2.6 Corruption \ Democracy and Economic Growth

Some scholars such as Baklouti and Boujelbene (2015); Bueno de Mesquita et al. (2001); North (1990) argued that democracy facilitates growth since citizens are better able to remove corrupt politicians. Moreover, democracy may not merely reduce the level of corruption, but also change the composition of corruption. This argument rests upon the plausible assumption that politicians weigh the costs and benefits of specific acts of corruption when they are faced with the choice of engaging in an illicit act.

In democratic systems, citizens can remove politicians and, therefore, the level of corruption will be lower. Corrupt activities that impose a high cost on society will annoy voters, which is costly for politicians. When these costs outweigh the benefits of any given corrupt act, politicians will be deterred from corruption. This will reduce the total number of corrupt activities in a democracy.

There are only a few empirical studies in the literature that deals with the complex relationship between corruption and democracy and their impact on economic growth. Drury et al. (2006) supported the argument that one of democracy's indirect benefits is its ability to mitigate the detrimental effect of corruption on economic growth. Although corruption certainly occurs in democracies, the electoral mechanism inhibits politicians from engaging in corrupt acts that

damage overall economic performance and thereby jeopardise their political survival. Using panel data from more than 100 countries over 1982-97, the study showed that corruption has no significant effect on economic growth in democracies, while non-democracies suffer significant economic harm from corruption.

Méndez and Sepúlveda (2006) also investigated the relationship between corruption and growth, where the marginal impact of corruption is allowed to differ across democratic and nondemocratic regimes. Using cross-country and annual data from 119 countries from 1984 to 2007, they found that decreases in corruption raise growth but more so in authoritarian regimes. Possible reasons are that in autocracies, corruption causes more uncertainty, is of a more pernicious nature or is less substitutable with other forms of rent-seeking. In support of this, Assiotis and Sylwester (2014) examined the association between corruption and growth, where the marginal impact of corruption is allowed to differ across democratic and nondemocratic regimes and concluded that controlling corruption in authoritarian regimes can produce greater benefits than limiting corruption in democracies and the association between corruption and growth is less positive in democracies.

Regarding corruption in the Arab region, a recent paper by Saha and Ben Ali (2017) interpreted the role of economic development in curbing corruption by concentrating on political and economic freedoms for Middle Eastern and North African (MENA) countries during the period 1984–2013. The analysis also investigated whether freedoms lower corruption in natural-resource-rich countries. The output reveals that the interactive relationship between economic and political liberties and government size leads to a reduction in corruption. The results prove robustly suggest that an increase in income boosts corruption in Arab oil exporters countries.

3.2.7 Rule of Law \ Regulations and Economic Growth

The rule of law and economic regulation are important governance characteristics of countries which affect economic growth. The role of an active regulatory regime in promoting economic growth and development has generated considerable interest among researchers and practitioners in recent years (Djankov et al., 2004). The current research assesses regulatory quality as one of the key criteria for good governance,

Privatisation and the more general process of economic liberalisation in developing countries have produced their own problems and failures and have resulted in the current focus on the regulatory state (Parker and Kirkpatrick, 2005). The regulatory state model implies leaving the

production to the private sector where competitive markets work well and using government regulation, where significant market failure exists (Mondial 2002).

Efficient regulation achieves the social welfare goals at minimum economic costs. The economic costs of regulation can take two broad forms: (1) the costs of directly administering the regulatory system, which are internalized within government and reflected in the budget appropriations of the regulatory bodies; and (2) the compliance costs of regulation, which are external to the regulatory agency and fall on consumers and producers in terms of the economic costs of conforming with the regulations and of avoiding and evading them (Guasch and Hahn, 1999) .

Parker (1999) has argued that a well-functioning regulatory system is one that balances accountability, transparency, and consistency. Accountability requires the regulatory agencies to be accountable for the consequences of their actions, to operate within their legal powers, and to observe the rules of due process when arriving at their decisions. Transparency relates to regulatory decisions being reached in a way that is revealed to the interested parties. The third process which provides regulatory legitimacy is consistency. Inconsistent regulatory decisions undermine public confidence in a regulatory system. Inconsistency leads to uncertainty for investors, which raises the cost of capital and may seriously damage the willingness to invest. Since political intervention tends to undermine regulatory consistency, and politicians may be prone to alter the regulatory rules of the game for short-term political advantage, consistency is a primary argument for some 'independent' regulator.

Djankov et al. (2006) investigated the impact of regulations on growth in 135 countries during 1993- 2002. They found that the business regulations index and growth are consistently and positively correlated. Countries with less burdensome business regulations grow faster. Jalilian et al. (2007) also examined the role of an effective regulatory regime in promoting economic growth in an analysis covering 117 countries for the cross-section regression and 96 for the panel version of the regression. They conclude that the provision of a regulatory regime that promotes rather than constrains economic growth is an important part of good governance. The ability of the state to provide effective regulatory institutions can be expected to be a determinant of how well markets and the economy perform. The impact of regulatory institutions on economic growth will depend on both the *efficiency* of the regulatory policies and instruments that are used and the *quality* of the governance processes that are practised by the regulatory authorities.

The above findings are consistent with the study by Messaoud and Teheni (2014). They examined the relationship between regulations and economic performance. The results showed that most regulation indices have the expected signs and were positively correlated with the average growth rate. It suggests that a reform, which improves the business environment, can help developing nations to grow faster. Reform programmes should stimulate companies to change their behaviour, to enhance investment and to encourage innovation

However, the evidence on the quality of regulation in developing countries suggests that the results of state regulation have been disappointing. A study of 13 Asian countries found that 80% of regulators had no access to training and that regulatory offices were usually understaffed (Jacobs, 2004). For example, in India, regulatory structures are associated with acute failures in institution building and with a bureaucratic approach that curtails enterprise (Kähkönen and Lanyi, 2000). The same in Latin America, there is often a lack of political support for independent regulation and a lack of commitment to maintaining regulatory independence (Ugaz, 2002).

In the context of Africa, it was found that “regulation is being examined as part of individual sector initiatives, but these efforts are uncoordinated, and implementation is being left to follow privatisation instead of being put in place concurrently” (Bhatia and Campbell-White, 1998, p. 5). A similar pattern of regulatory weaknesses can be discerned in the evidence for individual countries. South Africa’s proliferation of regulatory bodies is associated with a lack of clarity about roles and responsibilities and with the adoption of policy-making roles independent of government (Schwella, 2002). While in Malawi, the electricity industry regulator remains closely connected to the state electricity industry, compromising any notion of real regulatory independence and encouraging capture.

Lastly, Silberberger and Königer (2016), propose that regulatory quality has a highly significant and robust non-linear relationship with economic growth. Countries that have already experienced relatively high improvement in regulatory quality will benefit less than countries that have limited experience. In addition, the least developed countries do not seem to benefit from enhanced regulation. The study also argued that trade and economic institutions might be an important determinant of income growth.

3.3 Conclusion Remarks

In recent years, the role of governance in promoting and sustaining economic change has been an issue of interest for both theoretical and empirical analyses in the social science literature. This chapter has aimed to review the current literature analysing the role of governance in economic development. The interest in dealing with this issue has been motivated by the current widespread consensus in considering institutions as a crucial determinant shaping economic performance. The theoretical approaches proposed within the New Institutional Economics, as well as the empirical evidence stemming from several studies, clearly, suggest that a country's long-run economic success critically depends on its institutional framework.

There are several studies in the literature which have evaluated this relationship. By and large, the main conclusion that has emerged is that governance is a positive and statistically significant determinant of economic development. Many of the empirical studies on the links between institutions and economic performance employ pure cross-sectional approaches, such as Knack and Keefer (1995), and Grogan and Moers (2001) while using time series data is little used due to the scarcity of sufficiently long time-series governance indicators. Recently, some studies have used panel data analysis, for instance, Acemoglu et al. (2019); Alonso (2011); Fernández et al. (2010); Lee and Kim (2009); Seldadyo et al. (2007).

Empirical evidence from development literature has confirmed that governance matters for improved economic development. Governance may affect development in several ways (Globerman and Shapiro, 2002). For instance, the functioning of the market system is maintained by creating institutions that protect property rights, a judicial system that administers justice and enforces contracts, thereby affecting the incentives for production and investment. Further, good governance supports a low transaction cost and a competitive environment for innovation, the adoption of appropriate technology and sound economic policies (Akpan and Effiong, 2012).

Regarding governance and its indicators, various authors have produced a wide array of definitions to cover almost anything, such as the definition to “manage human interaction and activities with several realities of the term ranging from related notions such as state governance, corporate governance, local governance, global governance etc.” offered by Akpan and Effiong (2012, p. 55) . While others use it very narrowly focussing on public sector management issues as “the manner in which power is exercised in the management of a country's economic and social resources for development” (Kaufmann et al., 2010, p. 3).

The supply of governance indicators has grown significantly in response. Yet much of the new supply uses indicators whose origins precede the recent explosion of interest in governance. The most widely used indicators in empirical researches are: Freedom House (Anwar and Cooray, 2012; Campos and Nugent, 1999; Fernández et al., 2010), International Country Risk Guide (Arndt, 2009; Chong and Calderon, 2000; Seldadyo et al., 2007), The World Governance Indicators (WGI) (Butkiewicz and Yanikkaya, 2011; Fayissa and Nsiah, 2013; Huynh and Jacho-Chávez, 2009; Jalilian et al., 2007), Polity IV (Acemoglu et al., 2008; Djezou, 2014; Piatek et al., 2013), and Corruption Perceptions Index (CPI) (Khamfula, 2007; Pramanik, 2007; Touati, 2014).

Regarding econometric techniques applied in the analyses, the majority of the empirical models start with linear regression models using ordinary least squares (OLS) methods and its alternative derivations. Some used simultaneous equations models through two-stage least squares method (2SLS) (Alonso, 2011; Kandil, 2009), while others used the three-stage least squares (3SLS) estimator which combines two-stage least squares (2SLS) with seemingly unrelated regressions (SUR) (Butkiewicz and Yanikkaya, 2006; Dridi, 2013; Peev and Mueller, 2012).

On the other hand, some other authors have preferred panel data analysis techniques as it has an advantage of containing. There are three types of panel data models namely, a pooled Ordinary Least Square (OLS) regression, panel model with random effects and panel model with fixed effects (Anwar and Cooray, 2012; Arndt, 2009; Fayissa and Nsiah, 2013; Siddiqui and Ahmed, 2013). For advanced analysis, some have employed Arellano and Bond's Generalized Method of Moments (GMM)-type estimator (Azman-Saini et al., 2010; Lee and Kim, 2009) (Commander and Nikoloski, 2011). Some studies using panel data analysis have been conducted on causality issues in general and panel Granger causality practically (Abdelbary, 2018; Charfeddine and Mrabet, 2017; Dawson, 2003; Heo and Tan, 2001; Justesen, 2008).

Therefore, this study aims to contribute to the ongoing debate on the factors that boost economic development in the Arab countries (ACs) through emphasising the role of governance. This has become even more important following the recent 'Arab Spring'. There is substantial empirical evidence that governance and institutions have an impact on economic growth, while the findings for other developmental indicators are still insufficient. For this reason, research must consider both in terms of inclusive growth.

This need is the starting point of this study, which looks at exploring the effect of socioeconomic reform programmes in the Arab region on development. Only a few studies have addressed the Arab region, and often the analysis is conducted within a larger sample of countries with no emphasis on the case of the Arab economies especially after the “Arab Spring”, where issues of stability are not addressed solely from a security standpoint and above all where progress is not simply viewed in terms of utility of goods and services (such as growth in per capita income), but rather in terms of substantive capabilities to choose a life one has reason to value.

Furthermore, the findings from previous research concern the relationship between governance and growth without using these outcomes to inform a framework that seeks sustainable development. Thus, further empirical studies are needed to verify the nature of the relationship between governance and economic development in ACs, in order to find out whether governance is causing economic development or development is causing governance. Moreover, this study aims to design a new framework which incorporates a broader scope of areas in development, including human rights, human development, poverty reduction, economic growth, education, and institutions that could be adopted by Arab countries, to help achieve sustainable development.

Chapter 4

Methodology

Chapter 4: Methodology

4.1 Introduction

This study aims to contribute to the economic development in Arab countries by examining the effects of recent reform programmes and to evaluate the interdependence of governance and development. Therefore, the primary purpose of this chapter is to present the methodological issues related to the investigation carried out in this research and discuss the methods that underpin the analysis in this study.

In addition to the theoretical framework underpinning the study, the chapter contains a full description of the econometric methodologies, including modelling issues and problems, as well as a discussion of the techniques for solving these problems. The empirical analyses chapters focus more on the actual approaches for estimating the models. In order to improve upon the flow of the Thesis, in some limited instances, this chapter repeats information also contained in the empirical analyses' chapters. This applies in particular to the empirical models estimated using the econometric techniques.

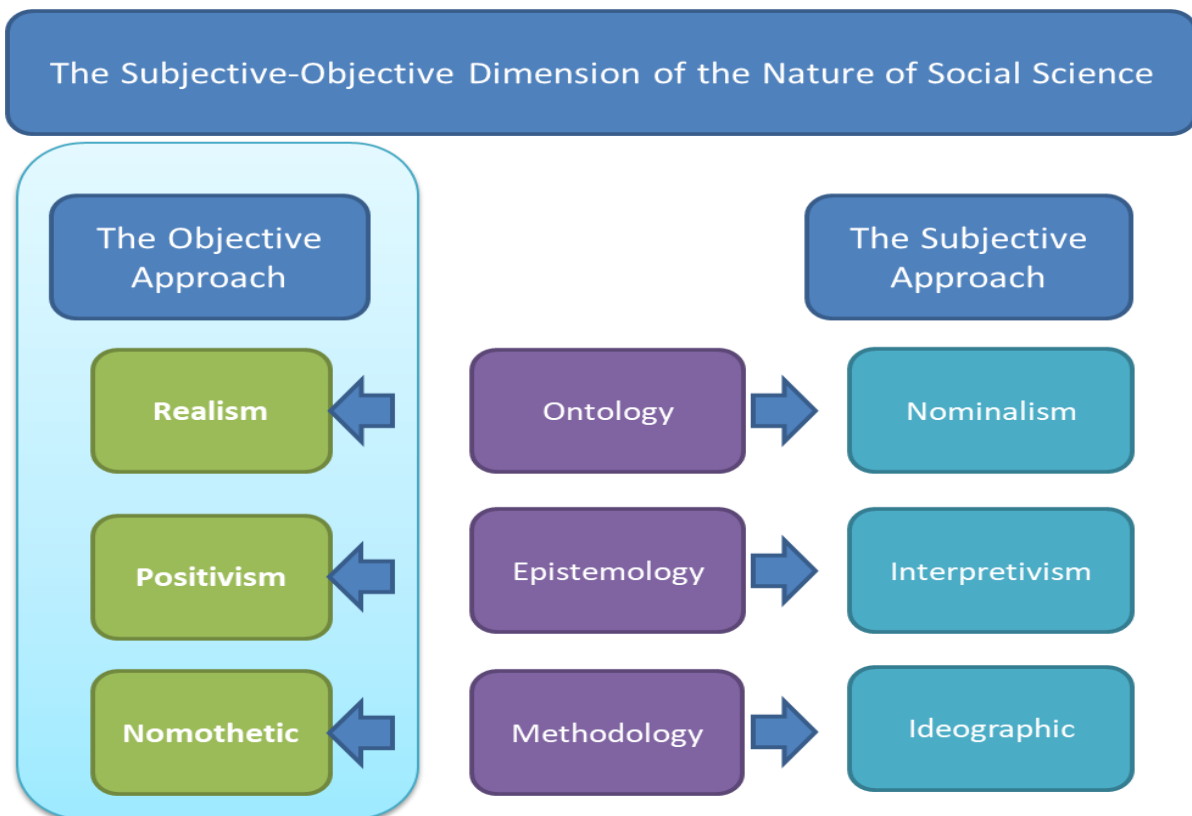
A similar approach has been followed in the section describing the data, which provides detailed background information regarding all the data used in this study. Empirical analyses chapters, in turn, provide further details regarding the data and their particular application in the methodology. The study is structured in this way to ensure that the flow of the Thesis is maintained and that the discussions are in their most suitable contexts.

The rest of the chapter is organised as follows: Section 4.2 summarises the various philosophies that may be adopted by different researchers about the nature of social science and society, and research paradigms; Section 4.3 describes the theoretical growth model, while the empirical models are illustrated in section 4.4; the full description and specification of the data in section 4.5; Section 4.6 presents the scope of the research; Section 4.7 illustrate in-depth the different estimation approaches and econometric techniques applied for the analyses; and finally, section 4.8 summarises the chapter.

4.2 Study design and research paradigm

According to Burrell and Morgan (1979), a research paradigm is a philosophical framework that guides how scientific research should be conducted. They provided three main philosophical assumptions that determine the research's position in research: i) ontology; ii) epistemology; iii) methodology. Each of these assumptions reflects two philosophical positions about research as in Figure 4.1 (the subjectivism and objectivism orientations to social science).

Figure 4.1: Assumptions regarding the nature of social science



Source: Adapted from Burrell and Morgan (1979; p. 3).

Firstly, the ontological assumption of social science research is concerned with the researcher's beliefs about the nature of reality. It studies the nature of reality or being, and it is concerned with understanding 'what is', with the nature of existence, and the structure of reality. This assumption can be seen from two perspectives that are the subjectivist and objectivist. This study will only focus on the objectivist approach, which is known as realism, and assumes that reality is external, and exists independently of an individual's appreciation. Realists believe that reality is objective and singular, and hence, they use quantitative research methods.

Secondly, the Epistemological assumptions relate to the nature of knowledge as dealing with the method undertaken while gathering information. Similar to ontology, the epistemological assumption can be seen from two approaches in which subjectivists adopt interpretivism, whereas objectivists adopt Positivism. This study will only focus on the Positivism approach. Positivists are quantitative and objective in nature; they believe that researchers are independent of what is being researched and only phenomena, which are observable and measurable, can be validly regarded as knowledge.

Thirdly, Methodology, which refers to “the theory of how research should be undertaken” (Saunders et al., 2011, p. 3). The notion of this assumption is about how the researcher gains knowledge about the world. The ideographic ‘subjectivist’ and the nomothetic ‘objectivist’ are the two approaches of the spectrum covering this assumption. This study will only focus on the nomothetic methodologies. Objectivists under this assumption, focus on testing research hypotheses, and they use quantitative and experimental methods to achieve their objectives.

This research will employ an objective approach because it is quantitative in nature and aims to investigate the relationship between economic development and governance. The philosophical approach is in realist ontology since it assumes that the social world is real and made of hard, tangible, concrete things and with a relatively constant structure. A positivist epistemology is employed as the researcher assesses the relationship between governance indicators and economic development in ACs empirically and thus examines the differences in their economic growth, through testing for the correlation and causation relationship between the key variables. On the other hand, a nomothetic methodology is adopted because this objective dimension applies quantitative analysis protocols, procedures, and techniques obtain from natural science and focuses on testing research hypotheses.

In summary, the core methodology used in this study is an econometric or quantitative analysis of patterns of economic development and governance.

4.3: The theoretical growth model

Most of the theoretical work on economic growth has aimed at understanding why growth rates differ across countries. Following the discussion in chapter 2, this section presents three related theories from three different economic schools of thought. The first is the contributions of Solow (1956) and Swan (1956) who assume a standard neoclassical production function with decreasing returns to capital. Unlike the Solow model, Mankiw, Romer and Weil from

the new growth school show that the Solow-Swan model augmented to include human capital in addition to physical capital and population growth provides a much better fit for cross-country data. Finally, introduce the augmented Solow growth model and the total factor productivity, as societal payoffs to enhancements in the levels of both physical and human capital are probably dependent on the institutional conditions.

4.3.1 The Solow Growth Model

According to Ball and Mankiw (1992); Barro (2003); Barro et al. (1992); Barro and Sala-i-Martin (1995); Mankiw et al. (1992); Romer (2012), the most basic characteristic of growth theory is that in order to achieve a high rate of economic growth in the long run, technological knowledge should have a propulsive role. This characteristic can be observed using the neoclassical growth model developed by Solow (1956) and Swan (1956) which indicates that if there is no technological progress, the law of diminishing returns will cause economic growth to come to a halt.

The Solow-Swan model assumes that the rates of saving, population growth and technological progress are exogenous. The work of Solow (1956) and Swan (1956) use production functions that exhibit constant returns to scale (CRS), diminishing returns to each input, and positive substitutability among inputs. The production function is assumed to be a function of capital (K), labour (L), and technology (A). By assuming a constant saving rate, the model predicts that growth, in the long run, is a function only of technical change and not of saving or investment. Saving will affect the level of income but not on its growth rate. This prediction implies that in the absence of continuous improvement in technology, per capita growth will eventually cease. The production function takes the following form (see Mankiw et al. 1992):

$$Y_t = K_t^\alpha (A_t L_t)^{1-\alpha} \quad (4.1)^{12}$$

Where t denotes time, $0 < \alpha < 1$ is the elasticity of output concerning capital (the percentage increase in the gross domestic product resulting from a 1% increase in capital), and Y_t represents total production. A refers to labour-augmenting technology, thus, AL represents effective labour. All factors of production are fully employed, and initial values A_0 ,

¹²The production function takes this form under the assumption of a Cobb-Douglas production function at constant returns to scale (implies that, $0 < \alpha < 1$ and by implication, $\alpha + (1 - \alpha) = 1$) and productivity growth that is purely labour-augmenting or “Harrod-neutral”.

K_0 , and L_0 are given. The number of workers, i.e., labour, as well as the level of technology grows exogenously at rates n and g , respectively:

$$L_t = L_0 e^{nt} \quad (4.2)$$

$$A_t = A_0 e^{gt} \quad (4.3)$$

Therefore, the number of effective units of labour, $A_t L_t$, grows at rate $(n + g)$. Since the production function $Y(K, AL)$ has constant returns to scale, it can be written as output per effective unit of labour (y_t) and the amount of capital per effective unit of labour (k_t^α):

$$\begin{aligned} y_t &= \frac{Y_t}{A_t L_t} = \frac{K_t^\alpha (A_t L_t)^{1-\alpha}}{A_t L_t} \\ &= \frac{K_t^\alpha}{(A_t L_t)^\alpha} = k_t^\alpha \end{aligned} \quad (4.4)$$

Therefore,

$$y_t = k_t^\alpha \quad (4.5)$$

or

$$y = f(k)$$

Equation (4.5) indicates the ratio of output per effective unit of labour to the amount of capital per effective unit of labour. Following equation (4.5), Solow argued that the production function exhibits no “scale effects”. That is, production per person is determined by the amount of physical capital each person has access to and, holding constant k , having an extra or reduced number of workers does not affect total output per person. Thus, large economies, such as China or India, may have less output or income per person than small economies, like Switzerland or the Netherlands (Barro and Sala-i-Martin, 1995, p. 28).

The Solow-Swan growth model also assumes that the stock of capital depreciates over time at a constant rate, and only a fraction of the output (cY_t with $0 < c < 1$) is consumed (c is the marginal propensity to consume), leaving a savings share, the marginal propensity to save, $s = 1 - c$ for investment (I)¹³ which increases capital over time. That is,

¹³ Under the assumption of closed economy, savings and investment are identical.

$$\begin{aligned}\frac{d\mathbf{K}_t}{dt} &= \dot{\mathbf{K}}_t = I - \delta \mathbf{K}_t \\ &= sY_t - \delta \mathbf{K}_t\end{aligned}\quad (4.6)$$

Where δ is the rate of depreciation of capital, I is investment, s is a constant saving rate for physical capital, and the time derivative of capital ($\dot{\mathbf{K}}_t$) shows the change in the capital stock over time, and represents net investment. That is, output that is neither consumed (sY_t) nor used to replace worn-out capital goods ($\delta\mathbf{K}_t$), and where $0 < \delta \leq 1$ is the rate of capital depreciation which is constant as noted before.

Because the economy may be growing over time, it turns out to be much easier to focus on the capital stock per unit of effective labour, k , than on the unadjusted capital stock, \mathbf{K} . Its behaviour over time is given by the key equation of the Solow–Swan model (see equation 4.9) and developed as follows (Romer, 2012):

Where $k_t = \frac{\mathbf{K}_t}{A_t L_t}$, the capital stock per efficiency unit k_t evolves as follows:

$$\begin{aligned}\dot{k}_t &= \frac{\dot{\mathbf{K}}_t}{A_t L_t} - \frac{\mathbf{K}_t}{(A_t L_t)^2} [A_t \dot{L}_t + L_t \dot{A}_t] \\ &= \frac{\dot{\mathbf{K}}_t}{A_t L_t} - \frac{\mathbf{K}_t}{A_t L_t^2} \dot{L}_t + \frac{\mathbf{K}_t}{L_t A_t^2} \dot{A}_t \\ &= \frac{\dot{\mathbf{K}}_t}{A_t L_t} - \left(\frac{\mathbf{K}_t}{A_t L_t} * \frac{\dot{L}_t}{L_t} \right) - \left(\frac{\mathbf{K}_t}{A_t L_t} * \frac{\dot{A}_t}{A_t} \right)\end{aligned}\quad (4.7)$$

Since $\dot{\mathbf{K}}_t = sY_t - \delta\mathbf{K}_t$, $y_t = \frac{Y_t}{A_t L_t}$, and $\frac{\dot{L}_t}{L_t}$, $\frac{\dot{A}_t}{A_t}$ are n and g , respectively, equation (4.7) simplifies as:

$$\begin{aligned}\dot{k}_t &= \frac{sY_t - \delta \mathbf{K}_t}{A_t L_t} - n \frac{\mathbf{K}_t}{A_t L_t} - g \frac{\mathbf{K}_t}{A_t L_t} \\ &= s \frac{Y_t}{A_t L_t} - \delta \frac{\mathbf{K}_t}{A_t L_t} - n \frac{\mathbf{K}_t}{A_t L_t} - g \frac{\mathbf{K}_t}{A_t L_t} \\ &= sy_t - \delta k_t - nk_t - gk_t\end{aligned}\quad (4.8)$$

Where, n is the rate of population (or labour force) growth, g is the rate of growth in technology, δ is the rate of capital depreciation. Finally, using the fact that $y_t = k_t^\alpha$ we have

$$\dot{k}_t = sk_t^\alpha - (n + g + \delta)k_t \quad (4.9)$$

This equation is the key equation of the Solow model, as it shows that the rate of change of the capital stock per unit of effective labour is the difference between the two terms. Firstly, $sk_t^\alpha =$

sy_t , is actual investment per unit of effective labour or it is the output per unit of effective labour as in equation (4.8), and the fraction of that output that is invested is s . The second term, $(n + g + \delta)k_t$, is a breakeven investment or the effective depreciation (for k) given by $(n + g + \delta)$, the amount of investment that must be done just to keep k at its existing level.

According to this equation, there are two reasons that some investment is needed to prevent k from falling. The first one is the δk ; existing capital is depreciating; this capital must be replaced to keep the capital stock from falling. Secondly, the quantity of effective labour is growing $(n + g)k$. Thus, an investment to keep the capital stock (\mathbf{K}) constant is not enough to keep the capital stock per unit of effective labour (k) constant. Instead, since the quantity of effective labour is growing at rate $n + g$, the capital stock must grow at rate $n + g$ to hold k steady (Romer, 2012).

Consequently, when actual investment per unit of effective labour exceeds the investment needed to breakeven, k will be rising. When actual investment falls short of breakeven investment, k will be falling and, when the two are equal, k is constant. If k^* denotes the value of k where actual investment and breakeven investment are equal and since \dot{k}_t as a function of k , it can be inferred that if k is initially less than k^* , actual investment exceeds breakeven investment, and so \dot{k}_t is positive, that is, k is rising. If k exceeds k^* , \dot{k}_t is negative. Finally, if k equals k^* , then \dot{k}_t is zero.

By the assumptions of diminishing marginal product of each input, k^* will be a stable equilibrium point¹⁴ or corresponds to a steady state in which the various quantities grow at constant rates.

¹⁴ In the steady state, all variables grow at constant rates. That is, capital per unit of effective labour, k^* and, labour and technology grow at rates n and g , respectively. Because of CRS, output, Y , also grows at rate $(n + g)$; capital per worker, KL , and output per worker, YL , both grow at rate g . Hence, the equilibrium (steady state) rate of growth of output per capita is determined by the rate of technological progress only.

From equation (4.9) the steady-state is defined as: ¹⁵

$$k_t^* = \left(\frac{s}{n + g + \delta} \right)^{\frac{1}{1-\alpha}} \quad (4.10)$$

Equation (4.10) implies that capital stock per effective labour around the steady-state is determined by savings rate and population growth if the depreciation rate and technological growth are typical across countries.

Taking the first derivative of equation (4.9.2) concerning k yields:

$$\frac{\partial \left(\frac{\dot{k}_t}{k_t} \right)}{\partial k} = \frac{s \left[k_t^{\alpha-1} - \frac{k_t}{k} \right]}{k} < 0 \quad (4.11)$$

The negative sign of equation (4.11) implies that the lower the k , the larger the values of $\frac{\dot{k}_t}{k_t}$.

It also implies that economies with lower capital per person tend to grow faster in per capita terms. In other words, there tend to be *convergence* across economies since poor economies have higher growth rates than the rich ones. According to Barro (1996b); Barro and Sala-i-Martin (1995), there are two types of economic convergence, absolute and conditional convergence. The ***Absolute convergence*** is a situation in which poor economies tend to grow faster per capita than rich ones, without conditioning on any other characteristics of economies. This means convergence exists if there is a negative relationship between the growth rate of per capita income and the initial level of income. ***Conditional convergence***, on the other hand, is related to situations in which countries which are further away from their steady state values will grow faster than countries closer to their steady state values. Here a convergence exists if the dispersion of per capita income tends to fall over time. In other words, the neoclassical

¹⁵ Since $\dot{k}_t = 0$, and dividing by k_t , equation (4.9) will be:

$$\frac{\dot{k}_t}{k_t} = \frac{sk_t^\alpha}{k_t} - \frac{(n + g + \delta)k_t}{k_t} \quad (4.9.1)$$

$$\frac{\dot{k}_t}{k_t} = s k_t^{\alpha-1} - (n + g + \delta) \quad (4.9.2)$$

$$0 = s (k_t^*)^{\alpha-1} - (n + g + \delta) \quad (4.9.3)$$

$$s (k_t^*)^{\alpha-1} = (n + g + \delta) \quad (4.9.4)$$

$$(k_t^*)^{\alpha-1} = \frac{(n + g + \delta)}{s} \quad (4.9.5)$$

growth theory predicts conditional convergence, that is, poor economies tend to grow faster than rich economies toward their steady states, after controlling for the determinants of the steady state

Consequently, conditional convergence exists if there is a partial correlation between the growth rate of per capita income and initial income. That is, in a regression analysis of growth rate of per capita income on initial income with other control variables, if one finds a negative relationship between growth and initial income (with other variables held constant), then conditional convergence exists. However, if the regression of growth is on only the initial income, and one finds a negative relationship, then absolute convergence exists. Absolute convergence is more likely to occur in a more homogenous group of economies; conditional convergence may also apply to a more heterogeneous group of economies.

Returning to equation (4.10) and taking logs for both sides we get:

$$\ln k_t = \frac{1}{1-\alpha} \ln s - \frac{1}{1-\alpha} \ln(n+g+\delta) \quad (4.12)$$

Since, $y_t = k_t^\alpha$ or $\ln y_t = \alpha \ln k_t$, equation (4.12) takes the following shape:

$$\ln y_t^* = \frac{\alpha}{1-\alpha} \ln s - \frac{\alpha}{1-\alpha} \ln(n+g+\delta) \quad (4.13)$$

Moreover, following from equation (4.4 and 4.5), $y_t = k_t^\alpha = \frac{Y_t}{A_t L_t}$, we have:

$$\frac{Y_t}{L_t} = A_t (k_t)^\alpha \quad (4.14)$$

Which is the steady-state income per capita equation (4.14), where $y_t^* = \left(\frac{Y_t}{L_t}\right)^*$

Taking the logs of both sides of equation (4.14),

$$\ln \left(\frac{Y_t}{L_t}\right)^* = \ln A_t + \alpha \ln k_t$$

where, $A_t = A_0 e^{g_t}$

$$\ln \left(\frac{Y_t}{L_t}\right)^* = \ln A_0 + g_t + \alpha \ln \left(\frac{s}{n+g+\delta}\right)^{\frac{1}{1-\alpha}}$$

$$\ln \left(\frac{Y_t}{L_t}\right)^* = \ln A_0 + g_t + \frac{\alpha}{1-\alpha} \ln s - \frac{\alpha}{1-\alpha} \ln(n+g+\delta) \quad (4.15)$$

Equation (4.15) indicates *steady-state income per capita*. The central prediction of the Solow model concerns the impact of saving and population growth on real income. This equation also shows steady-state labour productivity and shows how differing labour force growth rate, accumulation of physical capital and technological progress can explain the differences in per capita incomes across countries.

4.3.2 The Augmented Solow Growth Model: Inclusion of Human-capital accumulation into the Solow Growth Model

The theoretical contributions to the growing literature highlight the role of human capital as well in the process of economic growth. Since the second half of the last Century, empirical research on the link between human capital and growth has emphasised the significance of human capital for economic growth. In the 1960s and 1970s, the pioneering work of Schultz (1961) and Becker (1964) on human capital caused development economists to augment their standard economic growth models to allow human capital investment to play a role. These results led development economists to an emphasis on human capital as a primary factor of production throughout the 1980s and 1990s (Azariadis and Drazen, 1990; Lucas, 1988; 1990; Mankiw et al., 1992; 1986;1989;1990b).

Theoretically, there are two logical reasons to include a human capital factor into the previous model: first, human capital accumulation might be correlated with saving rates and population growth rates. This means that omitting this factor may provide biased coefficients on saving and population growth rates. Secondly, when the human capital accumulation rate is not taken into account, physical capital accumulation and population growth rates may seem to have a more considerable influence on the output. Many authors provide evidence of the significance of human capital for economic growth (Li and Wang, 2016; Schütt, 2003).

In order to capture the obvious role of human capital in determining economic growth, Mankiw, Romer and Weil (1992), hereafter MRW, developed the augmented Solow growth model with human capital in addition to physical capital and defined a production function as follows:

$$Y_t = K_t^{\alpha_1} H_t^{\alpha_2} (A_t L_t)^{1-\alpha_1-\alpha_2} \quad (4.16)$$

Where H is the stock of human capital, α_2 is the share of human capital in total output and all other variables are defined as before. $\alpha_2 < 1$, and $\alpha_1 + \alpha_2 < 1$, so that the function exhibits constant returns to scale but diminishing returns to reproducible factors. In this case and under the assumption of constant returns the output per effective unit of labour (y_t) equal,

$$y_t = k_t^{\alpha_1} h_t^{\alpha_2} \quad (4.17)$$

Where, $y_t = \frac{Y_t}{A_t L_t}$, $k_t = \frac{K_t}{A_t L_t}$, $h_t = \frac{H_t}{A_t L_t}$

Therefore, the net increase in the stock of both physical and human capital at a point in time will be equal to gross investment less depreciation. Physical capital, as in equation (4.6) has already been discussed in the previous section. Human capital can be formulated in the same way as physical capital.

$$\begin{aligned} \frac{dH_t}{dt} = \dot{H}_t &= I_H - \delta H_t \\ &= s_H Y_t - \delta H_t \end{aligned} \quad (4.18)$$

Where δ is the rate of depreciation, $I_H = s_H Y_t$, is an investment in human capital and s_H is a constant saving rate for human capital accumulation or the fraction of output devoted to human capital accumulation.

MRW noted that the proportions of income invested in physical capital and human capital are constant at the rates of s_k and s_h respectively, and that both kinds of capital depreciate at a common rate. The evolution of the economy is therefore derived by

$$\dot{k}_t = s_k y_t - (n + g + \delta)k_t = s_k k_t^{\alpha_1} h_t^{\alpha_2} - (n + g + \delta)k_t \quad (4.19)$$

$$\dot{h}_t = s_h y_t - (n + g + \delta)h_t = s_h k_t^{\alpha_1} h_t^{\alpha_2} - (n + g + \delta)h_t \quad (4.20)$$

MRW assumed that the same production function applies to human capital, physical capital, and consumption. In other words, one unit of consumption can be transformed costlessly into either one unit of physical capital or one unit of human capital (Fethi, 2003). In addition, they assumed that human capital depreciates at the same rate as physical capital.

Equations (4.19) and (4.20) imply that the economy converges to a steady-state defined by

$$k^* = \left(\frac{s_k^{1-\alpha_2} s_h^{\alpha_2}}{n + g + \delta} \right)^{\frac{1}{1-\alpha_1}} \quad (4.21)$$

$$h^* = \left(\frac{s_k^{\alpha_1} s_h^{1-\alpha_1}}{n + g + \delta} \right)^{\frac{1}{1-\alpha_1-\alpha_2}} \quad (4.22)$$

Substituting Equations (4.21) and (4.22) into the production function and taking logs, we obtain the steady-state income per capita:

$$\ln\left(\frac{Y_t}{L_t}\right)^* = \ln A_0 + g_t + \frac{\alpha_1}{1 - \alpha_1 - \alpha_2} \ln s_k + \frac{\alpha_2}{1 - \alpha_1 - \alpha_2} \ln s_h - \frac{\alpha_1 + \alpha_2}{1 - \alpha_1 - \alpha_2} \ln(n + g + \delta) \quad (4.23)$$

This equation shows how income per capita depends on population growth and the accumulation of physical and human capital.

As in the original Solow model and due to the assumption of diminishing returns to “broad” capital (human and physical), measured in effective units of labour, all quantities are constant in the steady-state, so that output per worker $\left(\frac{Y_t}{L_t}\right)$ and capital per worker $\left(\frac{K_t}{L_t} \text{ and } \frac{H_t}{L_t}\right)$ raise at the exogenous rate of technological progress g . This indicates that an increase in the rate of investment in human capital S_H has no effect on the long-run growth rate of the economy. Although there is no rate effect, the increase does have a level effect. MRW model, as in the steady-state equations (4.21 and 4.22), show the level of steady-state income per capita is positively related to the rates of investment in physical and human capital and inversely related to the rate of population growth. Thus, a continuing increase in the fraction of income devoted to the accumulation of human capital shifts the steady-state level of income upwards, leading to a higher long-run growth path.

On the other hand, there is a significant difference in comparison to the original Solow model regarding the magnitude of the effect of a change in the saving rate on the level of income. In the augmented neoclassical growth model, the elasticity of income concerning the rate of investment is higher. This is because a higher saving rate increases the steady-state level of income, so increasing human capital accumulation as well, even if the rate of investment in the human capital remains unchanged (Jones, 1998, pp. 38-39). Therefore, the level effect due to a change in the investment rate is more noticeable in the augmented Solow model than in the original form without human capital (Schütt, 2003).

To sum up, the human-capital augmented Solow model considers human capital as an additional, ordinary input in production. Human capital is demonstrated exactly as physical capital: It is accumulated by investing a fraction of income in its output, depreciates at the same rate as physical capital, and is produced with the same technology as both physical capital and consumption. Additionally, in both models, the long-run growth is exogenous, its rate equalling the pace of technological progress.

4.3.3. The Augmented Solow Growth Model and Total Factor Productivity

The above discussion has shown the vital role of physical and human capital in explaining income differences; however, some recent studies have indicated slight evidence that efforts to increase either physical or human capital levels in developing countries, especially in Africa, have failed in generating high growth (Easterly, 2006). Easterly (2001) details how Sub-Saharan African countries had larger increases in schooling than any other region since 1960. Yet these countries remained mired in poverty while Asian ‘tigers’ like South Korea and Taiwan had smaller increases in education levels but flourished economically. The justifications of these relations are illustrated by Pritchett (2001) when he found that in some countries, the institutional environment could be so perverse that increasing education actually leads to lower growth.

More generally, societal payoffs to improvements in the levels of both physical and human capital are probably dependent on the institutional conditions in which those investments occur. In countries with good institutions where the social, political, and legal rules provide for protected property rights, fair contract enforcement, and reliance on a free market mechanism to guide economic activity, investments in the capital are both privately beneficial to individuals and also create a positive impact on the economy as a whole. In countries with poor institutions, however, the higher returns to investments in rent-seeking activities result in the plunder of the wealth of others, through lobbying of influential members of society in a coalition of military, political, religious, and economic elites (North, 2009; North et al., 2008).

In this respect, integrating this hypothesis into the augmented Solow growth model theoretically is an apparent extension undertaken by Dawson (1998)¹⁶ who was the first to integrate institutions into the typical growth models. Then, empirically test this hypothesis by interacting governance with both physical and human capital in cross-country growth regressions. This extended growth model was also used by Ahmad and Marwan (2012); Bennett (2014); Hall et al. (2010); Jalilian et al. (2007); Stroup (2007;2008) who applied a similar approach to separate out the influence of political and economic institutions on economic growth. Such a clear growth framework would, therefore, allow an explicit

¹⁶ Dawson (1998) however utilizes Mankiw et al. (1992) growth model which is a Solow (1956) neoclassical growth model augmented with human capital. In his panel analysis, Dawson divides his data into three 5-year sub-periods because the data for institutional quality (i.e. economic freedom) and human capital is only available in five-year periods. Since this study uses annual data, it therefore employs Solow framework with human capital parameter.

modelling of the institutions' channel of impact and would eventually give a better understanding of its relationship to economic growth.

Again, consider the following Cobb-Douglas function which exhibits constant returns to scale ($0 < \alpha_i < 1$ & $\alpha_1 + \alpha_2 < 1$) but diminishing returns to individual factors.

$$Y_t = K_t^{\alpha_1} H_t^{\alpha_2} (A_t L_t)^{1-\alpha_1-\alpha_2} \quad (4.24)$$

Where all other variables are defined as in equation (4.1) and (4.16), except the term A_t which in this case is referred to as Total Factor Productivity (TFP), also known as the Solow residual or the ignorance of neoclassical growth theory. It is designated to capture a host of factors that affect the overall efficiency of the economy. These factors according to Mankiw et al. (1992) reflects not just technology level, but also other factors such as, resource endowments, climate, quality of management and governance, the strength of institutions and property rights, and cultural factors, and so on (the institutional term is added to the list by Campos and Nugent (1999))¹⁷. Thus, TFP is a composite variable denoting the efficiency and effectiveness of an economy. According to Chenery (1986), the contributions of total factor productivity are 50% of the overall growth in developed countries, whereas this situation indicates 30% of the total growth for developing countries.

The TFP implicitly assumes an underlying set of good institutions. In this model, the quality of institutions affects output through the effect that institutions have on the productivity of human and physical capital. Therefore, the notion of institutions affecting TFP can be explicitly incorporated into the model via a function of A , following Hall et al. (2010):

$$A_t = A_0 e^{gt} e^{B(I_t - I^*)} \quad (4.25)$$

Where A_0 represents the basic level of technology, $e^{B(I_t - I^*)}$ the total effect that institutions have on the productivity of human and physical capital respectively $k_t^{b_1(I_t - I^*)}$ and $h_t^{b_2(I_t - I^*)}$. Where, I^* represents the ideal institutions implicitly assumed in the traditional growth model, and I is the country's current level of institutional quality. Thus, $(I - I^*)$ measures the degree to which the country's institutions fall short of ideal conditions and could be defined as \hat{I} . When

¹⁷ The primary motivation to use Solow framework is particularly due to the fact that it has a shift parameter, A . acknowledges that this term is far from capturing technical change solely. It is "a shorthand expression for any shift in the production function" and thus it will capture "slowdowns, speedups, improvements in the education of the labor force, and all sorts of things".

$I = I^*$ or ($\hat{I} = 0$), with an ideal institutional environment, productive entrepreneurship, investments in human and physical capital and the division of labour are incentivized in a manner necessary to foster innovation and economic growth (Baumol, 1990; Holcombe 1998) such that a country is operating on the Production Productivity Frontier (PPF). TFP is here structured to serve as a production deflator for a country whose institutions are less than ideal, ($I < I^*$) or ($\hat{I} < 0$), which can be thought of as operating at a point inside the PPF (Abdelbary and Benhin, 2018).

Therefore, if $A_t = A_0 e^{g_t + \hat{I}}$, Dawson (1998) argues that the specification of the A function in equation (4.25) imply that differences in institutions have an explicit impact on the level of productivity across countries. One important assumption in this specification is that institutions are considered to affect growth via TFP channel and not only via investment term but also through human capital¹⁸. Thus, following the same rules as in Solow and its augmented models, a growth model based on equation (4.24) and incorporating equation (4.25) can be conveniently derived as to obtain the steady-state income per capita:

$$\ln\left(\frac{Y_t}{L_t}\right)^* = \ln A_0 + g_t + \hat{I}_t + \frac{\alpha_1}{1 - \alpha_1 - \alpha_2} \ln s_k + \frac{\alpha_2}{1 - \alpha_1 - \alpha_2} \ln s_h - \frac{\alpha_1 + \alpha_2}{1 - \alpha_1 - \alpha_2} \ln(n + g + \delta) \quad (4.26)$$

Within this framework, institutions exert a homogenous influence on the productivity of human and physical capital across economies. Equation (4.26) presents a heuristic way of testing the institutional effects on growth via its impact on factors productivity. This equation can be used to estimate the direct impact of institutions on the level of income per capita and differenced to examine how institutional change affects economic growth.

4.4. The Empirical Model

The empirical model and estimation methods are primarily based on the augmented Solow-Swan growth model with the TFP as stated in equation (4.26), and ‘Barro-type regression’, following the works of Robert Barro and several other researchers (Barro, 1996a;1999;2003; Barro and Sala-i-Martin, 1995).

¹⁸ See Dawson (1998) for more discussion on the possible channel of institutional impact towards growth and the consequent assumptions made.

According to Barro-type regression, the real per capita growth rate is influenced by two kinds of variables: the initial levels of state variables and control variables.

The first factor is the initial levels of state variables. The state variables are physical and human capital, as presented in the augmented Solow growth model in equation (4.16) or (4.24). These variables will influence the growth of national income, which is a state variable itself. The evolution of these state variables over time depends on their initial values as well as on the control variables. Thus, initial values of the stock of physical capital, human capital, and national income are critical in determining the time path of the national income. For a given initial level of per capita output, an increase in the steady-state level of per capita output raises the per capita growth rate over a transition interval.

The second factor is control variables; it influences the time path of the state variables by changing the environment in which the state variables change over time. In an economy, some of these variables are influenced by governments such as the ratio of government expenditure to GDP, the ratio of domestic investment to GDP, indicators of macroeconomic stability, the ratio of external debt to GDP, openness to trade, and current account balance, etc. On the other hand, some of these variables are influenced by private sector activities, including saving rate and labour supply (Effendi, 2001). In contrast, some other variables are not fully controlled by agents, for instance, the fertility rates, and quality of governance and institution. All these variables guide the movement of the state variables toward their steady-state or target values, which are empirically unobservable.

Therefore, combining the above concepts within the production function and in equation (4.24) the real GDP per capita growth is typically regressed on several explanatory variables, as per equation (4.27) and for a set of countries over time as follows:

$$\ln(\mathbf{RGDPG}_{i,t}) = \alpha_0 + \varphi_1 \ln(\mathbf{RGDP}_{i,t-1}) + \theta_1(\mathbf{X}_{i,t}) + \varepsilon_{i,t} \quad (4.27)$$

where, $\mathbf{RGDPG}_{i,t}$ represents the economic growth rate in country i at time t ; $\ln(\mathbf{RGDP}_{i,t-1})$ is an $N \times 1$ vector of lags of the logs of real GDP per capita; and $\mathbf{X}_{i,t}$ is an $N \times k$ matrix of explanatory variables derived from theories of economic growth discussed previously and supplemented with empirically plausible policy variables (control variables). α is an $N \times 1$ vector of constant terms, φ is the convergence coefficient, θ is $K \times 1$ vector of parameters. φ is the convergence parameter of the countries under study and it is expected to be negative as it shows the catching-up process by the countries to their steady state. If the matrix of

explanatory variables X is omitted, the model is thus reduced to the absolute convergence model which assumes all countries share the similar steady state determinants, and in the long run, all countries will converge to the similar level of output (Ahmad, 2012).

As mentioned, the main aim of the model is to measure the economic and institutions reform effort of Arab countries by estimating a conditional convergence equation for economic growth with the above variables. The originality of the research model is through generating aggregated policy reform indicators using principal component analysis¹⁹. This approach allows computing control variables identified by Barro and Sala-i-Martin (1995) into six separate groups.

Each principal component or environmental variables represent a group of control variables in terms of relativity as presented in the Figure of Appendix 4.1. The first component, **macroeconomic stability reform indicators** (M), includes exchange rate (M1), government deficit (M2), public debt (M3), inflation (M4), and unemployment (M5). The second component is **external stability reform indicators** (E) which contains current account balance (E1), the ratio of external debt to exports (E2), total reserves in months of imports (E3), diversification index (E4), and terms of trade (E5). Thirdly, the component of **structural and business reform** (B) consists of foreign direct investment (B1), domestic credit to the private sector (B2), and concentration index (B3). Fourthly, the component of **human capital indicators** (H), which includes infant mortality rate (H1), health expenditure (H2), school enrolment (H3), life expectancy (H4), and scientific articles published (H5). The fifth component is **physical infrastructure** indicators (P), consists of fixed telephone subscriptions (P1), improved water source (P2), access to electricity for a population (P3), and improved sanitation facilities (P4). Lastly, the **governance** indicators (G), is based on voice and

¹⁹ Principal component analysis (PCA) is a data analysis technique that can be traced back to Pearson (1901). This statistical procedure uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables called principal components. This transformation is defined in such a way that the first principal component has the largest possible variance, and each succeeding component in turn has the highest variance possible under the constraint that it is orthogonal to the preceding components. The resulting vectors are an uncorrelated orthogonal basis set. The principal components are orthogonal because they are the eigenvectors of the covariance matrix, which is symmetric (Tabachnick, 2013).

accountability (G1), political stability (G2), government effectiveness (G3), regulatory quality (G4), the rule of law (G5) and control of corruption (G6)^{20, 21}.

Therefore, the operationalisation of the model then leads to the following form:

$$\ln(RGDPG_{i,t}) = \alpha_0 + \varphi_1 \ln(RGDP_{i,t-1}) + \theta_1(M_{i,t}) + \theta_2(E_{i,t}) + \theta_3(B_{i,t}) + \theta_4(P_{i,t}) + \theta_5(H_{i,t}) + \theta_6(G_{i,t}) + \varepsilon_{i,t} \quad (4.28)$$

Where $RGDPG_{i,t}$ refers to real GDP per capita growth, $RGDP_{i,t-1}$ refers to GDP per capita in the previous period, $M_{i,t}$ is macroeconomic stability indicator, $E_{i,t}$, external stability indicator, $B_{i,t}$ is structural and business reform indicator, $P_{i,t}$ refers to physical infrastructures indicator, $H_{i,t}$ is human capital indicator, $G_{i,t}$ refers to governance indicator, α_0 refers to intercept, θ_1 to θ_6 , φ_1 are parameters for the principle components or environmental variables, i,t denote country and time period respectively and ε_{it} refers to the error term.

To control for sample heterogeneity, and consistent with the literature, other three control variables have also been introduced. These variables reflect differences in the level of technology or in different endowments of natural and human resources, which can be at the origin of significant discrepancies in the “natural propensity” to grow. The evolving demographic situation is controlled through the incorporation of the annual population growth rate (POP). Given the significance of the natural resource sector to many of the Arab countries, especially Gulf countries, oil rents to GDP ($rent$) variable has also been included in the model. Finally, the empirical literature confirms that high-tech products are the fastest-growing segment of international trade (Srholec, 2007). It is particularly convenient to use the portion of high-tech products in exports (A) as a proxy for the technological capability of a country²² (Gani, 2009).

Furthermore, two dummy variables, financial crisis and Arab spring, are creating to examine how both events influence economies of the countries. The impact of the financial crisis is incorporated into the model by using a financial crisis dummy(DI), which equals one for years 2008, 2009, 2010 and is zero for other years. Secondly, the impact of the Arab spring is

²⁰ Refer to Appendix 4.2 for more details.

²¹ Further details on the composition and evolution of these variable are presented in Appendices 4.3.1–6

²² Technology is not explicitly incorporated in economic growth models, even as both neo-classical and new growth theorists agree that total factor productivity TFP represents the best measure of technology change and exercises a dominant influence on a country’s growth performance (Ranis and Zhao, 2013).

in several ways (Akpan and Effiong, 2012; Dethier, 1999; Gurvich, 2016; Lam, 2011; Maurseth, 2007).

4.5.1. Macroeconomic Stability indicators (*M*)

4.5.1.1 Exchange rate

This indicator is a proxy more generally for macroeconomic instability, in particular, for instability that relates to the balance of payments based on the fact that developing countries are highly dependent on imported inputs and capital goods. The International Monetary Fund (IMF) has often recommended currency devaluations as the essence of Structural Adjustment Programmes (SAP) for countries suffering from a balance of payments' deficits and international reserve shortages. IMF considers this as a critical element of economic growth that should accompany the financial aid and loans they provide to member countries for the development of domestic production via the stimulation of net exports (Oskooee and Kandil, 2007).

Controlling the exchange rate is considered to be a primary policy objective in governments to reach a set of diverse objectives of economic growth, containment of inflation and maintenance of external competitiveness. Policy discussions regularly emphasise on it as the academic literature provides compelling evidence to suggest that a wrongly managed exchange rate system can be a significant impediment to improved economic performance (Khondker et al., 2012). Reform of the exchange rate was an essential component of trade liberalisation measures that developing countries undertook, eventually replacing the earlier 'fixed rate' system with a 'freely-floating' regime (Williamson, 2004).

Numerous studies have assessed the relationship between exchange rate movements and economic growth. Earlier studies such as Connolly (1983); Donges et al. (1978); Gylfason and Schmid (1983); Taylor and Rosensweig (1984), provide support for expansionary effects of devaluations. The contractionary effects became prominent in a large number of studies such as Atkins (2000); Berument and Pasaogullari (2003); Gylfason and Radetzki (1985); Odusola and Akinlo (2001). On the other hand, Edwards (1998) found a negative (contractionary) short-run effects, but in the long run, the output response to devaluation appeared to be positive, whereas Bahmani-Oskooee and Miteza (2006); Habib et al. (2017) presented mixed results as the long-run devaluations are contractionary in non-OECD countries, while for OECD economies the results are mixed.

Recently, Guzman et al. (2018) prove that a stable and competitive RER policy may correct market failures and thus leads to overall faster economic growth. The impact of RER policies is increased when they are complemented by traditional industrial policies that increase the elasticity of the aggregate supply to the RER.

4.5.1.2 Budget balance as a percentage of GDP

The budget balance is one of the most important macroeconomic factors that have an impact on economic growth (Fischer, 1993). The budget deficit or surplus is one of the most reliable and measurable indicators which has an impact on economic growth (Eminer, 2015). There are several studies, which analyse the relationship between budget deficit and economic growth by using different methods. The theoretical backgrounds of the macroeconomic perspective are based on two controversial approaches that explain the relationship between budget deficit and economic growth. The neoclassical approach supports the idea that there is an inverse relationship, and Keynesian theory argues that there be a positive relationship between budget deficit and economic growth (Rahman, 2012). These theories have been tested in various studies for different countries by using empirical methods. According to Eminer, in a review of several studies, argue it is not difficult to say that many studies conclude with support for the neo-classical approach.

4.5.1.3 Public Debt

Public debt can create higher fiscal imbalances through greater debt servicing attributed, in part, to future increases in loans to repay existing debt. Also, increase borrowing in the domestic economy can crowd out private sector investment (Blake). According to Elmendorf and Gregory Mankiw (1999), in the short run higher public debt has a positive effect on aggregate demand, disposable income and hence overall output. This positive short-run effect of higher debt is likely to be considered when the country's output is far from capacity. However, in the long run, the relationship is negative. As the decrease in public savings brought about by a higher budget deficit will not be fully compensated for by a growth in private savings.

4.5.1.4 Consumer price index

Maintenance of price stability continues to be an overriding objective of monetary policy for most countries in the world today. The importance given to price stability in the conduct of monetary policy is to promote sustainable growth as well as support the purchasing power of the domestic currency amongst others (Barro and Sala-i-Martin, 1995).

Evidence on the relationship between inflation rates and growth is somewhat mixed: while the link is strong in cases of high inflation, it is less so in cases of moderate or low inflation (see, *e.g.* Bruno and Easterly (1998); Edey (1994). For instance, in neoclassical views, inflation increases economic growth by shifting the income distribution in favour of higher saving capitalists. Thus, saving increase and so economic growth. Also, Keynesians believed that inflation might increase growth by raising the rate of profit, thus increasing private investment. Contradictorily, theories or empirical studies show why inflation is negatively related to economic growth. For example, Barro (1995) suggest that high inflation reduces the level of investment, which adversely affects economic growth. Several research such as Eggoh and Khan (2014); Gultekin and Gultekin (1983); Loungani and Swagel (2001); Murshed and Nakibullah (2015); Nguyen et al. (2017) also explained why inflation and economic growth have a negative relationship as the growth rate is dependent on the rate of return, but inflation decreases the rate of return.

4.5.1.5 Recorded unemployment

Unemployment is one of the macroeconomic factors that influence the rate of growth. When the unemployment level starts to fall, it is usually in association to other macroeconomic factors such an increase in demand for goods and services, which catalyse the increase in employment (Al-Habees and Rumman, 2012). In 1960, Arthur Okun presented the relation between output growth and unemployment change (Okun's law). Okun's law states that, on average, each extra percentage point in the unemployment rate above four per cent has been correlated with about a three per cent decrease in real GNP over the post-war period (Okun, 1962, p. 99). The negative sign of the Okun's coefficient has been confirmed in the literature, although its magnitude is sensitive to the model specification, choice of control variables, econometric methods and sample periods. The empirical study of Okun's law has indeed blossomed, especially in studying developed countries (Lewis, 2013; Moosa, 1997; Nagel, 2015).

4.5.2. External Stability indicators (E)

4.5.2.1 Current account balance/GDP

The current account balance has become an important indicator for economies since capital mobility was liberalised, and national economies became global (Dreher, 2006). A current account deficit might reflect a low level of national savings relative to investment. Thus, any

economic reform that influences aggregate saving or investment will likely also alter a country's current account position (Bornhorst and Ivanova).

According to Abiad et al. (2009); Calderon et al. (2002); Jaumotte and Sodsriwiboon (2010); Karahan and Çolak (2017), there is a definite and significant relationship between income per capita and the current account. Debelle and Faruqee (1996) found that countries with fast economic growth tend to have a high rate of current account deficit. Similarly, Calderon et al. (2002) showed in their research on 44 developing countries that an increase in GDP growth rate led to an increase in the current account deficit.

Also, Karahan and Çolak (2017) found that there is a bidirectional relationship between the current account deficit financed by capital inflows and economic growth in Turkey. Therefore, stimulating capital inflows to create sources for financing imported capital and intermediate goods that will be used as inputs for the production process, which improves economic growth.

4.5.2.2 External debt/exports of Goods and Services

The issue of external debt has been at the centre of the economic policy debate. External debt research increased rapidly in the mainstream of economic development literature when the debt crisis hit developing countries in the early 1980s (Effendi, 2001). Since then, the discussions on external debt and foreign aid have become an increasingly important subject for development economists.

In the early stages, developing countries have been influenced by the idea of a “financing gap,” by borrowing from abroad. The idea of this approach was based on the notion that foreign debt can be an important source of capital that can be invested in key sectors of the economy. Therefore, the “bottleneck” on investment can be eliminated with the help of debt (Hussain et al., 2015). However, the debt crisis that hit many debtor countries in the early 1980s caused investment decline and growth collapse, particularly in heavily indebted developing countries in Latin America and Africa (Kaminsky and Pereira, 1996).

Sachs (1989) attempted to explain the debt crisis puzzle in the form of the debt-overhang hypothesis. The debt overhang hypothesis states that external debt burden provides a disincentive to domestic investment in developing countries and thus slows down economic growth since any additional foreign exchange earnings would have to be turned over to foreign creditors. The debt overhang hypothesis has received much attention, especially after the IMF (1989) paper and their policies on debt relief for Highly Indebted Poor Countries (HIPC). The excess debt burden is seen as a hindrance to these countries' development and hence the need

for debt relief (Stella and Chikaza, 2013). The important finding that external debt tends to have an inverse relationship with growth suggests that over-reliance on external debt to boost economic growth is not a good policy (Effendi, 2001).

4.5.2.3 Total international reserves in months of imports

Johnson (1958) observes that international reserves-holding depends on the country's money supply. So, if the domestic money supply grows at a lower rate than domestic demand, then a country will expand reserves.

Additionally, Heller (1966) indicates that the propensity to import, the opportunity cost of holding international reserves and the stability of a country's balance of payments account are all associated with a country's decision to keep foreign reserves. The privilege of keeping foreign reserves is the ability to avoid a decrease in output resulting from a deficit in the balance of payments. Thus, holding a large size of international reserves is a form of self-insurance against the risk of a rapid withdrawal of cross-border investment, which may lead to a severe recession.

On the other hand, the argument put forward by Yeyati (2008) suggests that self-insurance is costly and should be considered a second-best solution in the context of an imperfect international financial market. In the case of developing countries, it was found that the positive effect of accumulating reserves which aim to improve sovereign ratings has been crowded-out by the adverse effect of accumulating external debt which resulted in a net negative effect. The analysis also suggested that countries should reduce their sovereign debt in order to maintain a good credit risk position while holding international reserves at the optimal level.

4.5.2.4 Diversification Index

Economic diversification is a pillar of sustainable economic development; it is the process by which resource-rich countries prevent instability and avoid the effect of the global drop in resource prices (Matallah and Matallah). Moreover, diversification can solve unemployment problems and point institutions in the right direction. In fact, diversification highlights differences in growth patterns between resource-rich countries and those poorly endowed with natural resources (Parlee, 2015); it also means that economic growth is drawn from more than one sector, and it can take place within a specific sector or it can simply reduce the extent of concentration across sectors (Wiig and Kolstad, 2012).

Regarding empirical studies linking export diversification and growth, Venables et al. (2007) in a cross-country framework, found evidence that export concentration was negatively

associated with growth during 1975-1999. Agosin (2007) found that export diversification, alone and its interaction with per capita export growth are highly significant in demonstrating per capita GDP growth over the period 1980-2003 in Asia and Latin America. Additionally, Hesse (2009) established a nonlinear relationship between export diversification and economic growth for the period 1962-2000 with developing countries benefiting from diversifying their exports, whereas the advanced countries perform better with export specialisation.

4.5.2.5 Terms of Trade

International trade is thought to be good for growth. The benefits can range from a potential expansion of aggregate demand to cheaper imported goods and technological spillover. Nevertheless, international trade implies more competition that might threaten less competitive industries, in particular for developing countries. According to Barro (1999); Barro and Sala-i-Martin (1995); Caselli et al. (1996), there is generally significant and positive association between improvements in terms of trade and growth.

On the other hand, other studies link between trade liberalisation and economic reforms through democracy channel, Fidrmuc (2003) and de Haan and Sturm (2003) suggest that democracy is likely to cause trade liberalisation, and thus democratisation reduces the ability of governments to use trade barriers as a strategy for building political support (Milner and Kubota (2005).

4.5.3. Structural and Business Reform (B)

4.5.3.1 Inward foreign direct investment/GDP

One of the main aims of economic reform activities, which include changes in tax laws, trade liberalisation, privatisation, domestic financial reform, and removing barriers to international capital flows are to attract foreign investment. Additionally, building on economic explanations, macroeconomic conditions are also expected to affect FDI. Economic growth rates, government consumption and governance, are strong predictors of foreign capital inflow (Chakraborty and Nunnenkamp, 2006).

Over the last decades, the relation between FDI and economic growth has been broadly discussed in the economics literature. Theoretically, there are conflicting results concerning this relationship. The positions range from an unreserved optimistic view (based on the

neoclassical theory) to a systematic pessimism (namely among ‘radical’ economists) (Lim, 2001; Wan, 2010).

Empirically, some scholars such as Abdouli and Hammami (2017); Alfaro (2003); Borensztein et al. (1998); Caves (1974); De Gregorio (2005); De Mello (1999); Rappaport (2000) argue that foreign direct investment could raise the capital stock and employment; encourage technological change through the adoption of foreign technology. Consequently, FDI is expected to increase and improve the current stock of knowledge in the recipient economy through labour training, skill acquisition and diffusion. It contributes to introducing new management practices and a more efficient organisation of the production process. Consequently, FDI can play an important role in modernising a national economy and promoting economic development. On the other hand, other pessimists believe that FDI may bring about crowding-out effect on national investment, external vulnerability and dependence, a possible decline of the balance of payments as profits are repatriated and the destructive competition of foreign affiliates with domestic firms and “market-stealing effect” (Aitken and Harrison, 1999; De Mello, 1999; Lipsey, 2004; Mansfield and Romeo, 1980).

4.5.3.2 Domestic credit to the private sector by banks / GDP

Over the last decades, economists seemed to have reached a consensus that the link between financial development and economic growth is positive. However, some recent empirical studies offer contradictory evidence (Arcand et al., 2012; Deidda and Fattouh, 2002; Rousseau and Wachtel, 2011).

The original opinion by Goldsmith (1969); Schumpeter (1934b) holds that a well-developed financial system boosts growth by channelling savings to the most productive investment projects. Financial control, therefore, results in a poorly functioning financial system that in turn reduces growth: this can happen as a result of excessive government intervention in the financial system with measures such as higher bank reserve requirements, interest rate ceilings, and direct credit programmes to preferential sectors. The new endogenous growth literature highlights the positive role of the financial sector in driving economic growth, mainly through its role in mobilising savings, allocating resources to the most productive investments, reducing information, transaction and monitoring costs, diversifying risks and facilitating the exchange of goods and services. On the other hand, some recent studies on the finance-growth nexus posit that the relationship between finance and economic growth is not linear. Cecchetti and Kharroubi (2012) found that as bank credit to the private sector exceeds 90% of GDP; finance

becomes a hindrance to growth. Such effect is detected in a study titled “Too much finance”, by Arcand et al. (2012) who utilised different datasets at the country and industry levels and find that the negative finance-growth relationship occurs once the ratio of private credit to GDP exceeds a threshold of about 110% for high-income countries.

4.5.3.3 Export concentration index

Although, economic openness explains the fact that an economy may be vulnerable to external economic shocks (as reflected by losses in export profits and growth slowdowns), the scale of impact depends mostly on the level of concentration of a country’s export portfolio. Imbs and Wacziarg (2003) examination of the relationship between domestic concentration and per capita income patterns across various countries, found the presence of a non-linear relation between production and employment diversification and growth. The study also observed that the process of development is characterised by two stages of diversification. In the first instance, because of growth, sectoral diversification increases, but beyond a certain level of per capita income, sectoral distribution of economic activity starts concentrating again. Therefore, they argued, sectoral concentration follows a U-shaped pattern. This finding is consistent with the study by Cadot et al. (2011) which found a hump-shaped (inverted U-shaped) relationship between economic development and export diversification, similar to the findings of Klinger and Lederman (2004).

4.5.4 Human Capital indicators (H)

4.5.4.1 Health

There is a reciprocal interaction between a population’s health level and its level of economic growth and development. Keeping a sustainable level of growth and development provides people with significantly better nutrition and disease treatment opportunities (Bakare and Olubokun, 2011).

Sustainable growth enables better health conditions, increasing the share of the population of healthy individuals. In this way, loss of labour or efforts does not emerge in society, and the amount of labour supply increases. Additionally, when a person is healthy, life expectancy increases and this promotes individual savings and private investments in education. Thus, contributions are made to investments and the development of human capital (Kurt, 2015).

With its multiplier outcome, increased health expenditures also lead to a rise in total expenditures and aggregate demand (Bedir, 2016). Empirically, Baldacci (2004) explored the

role played by health expenditures. He constructed a panel dataset for 120 developing countries from 1975-2000 and found that spending on health within a period affects growth within that same period while lagged health expenditures appear not to affect growth. He concluded from this result that the direct effect of health expenditure on growth is a flow and not a stock effect. In the same vein, Barro and Sala-i-Martin (1995); Lorentzen et al. (2008) find evidence for higher life expectancy leading to faster economic growth based on panel data analysis. Moreover, Acemoglu and Johnson (2007), discover that enhancements in life expectancy lead to some growth in aggregate incomes.

4.5.4.2 Education

Education is considered a powerful tool in empowering people, reducing poverty, improving economic growth, promoting private earnings, promoting a flexible and healthy environment and creating a competitive economy. It plays a dynamic role in determining the way in which future generations learn to cope with the complexities of economic growth (Afzal et al., 2010).

In economic theory, the growth model of Solow (1956), failed to provide a satisfactory answer to the question of how sustainable economic growth can be achieved. Human capital (acquisition of knowledge and skills) proved to be one of the leading sources of sustainable economic growth in endogenous growth theories. Romer (1986, 1990) and Lucas (1988) in their models, gave a central role to education in the economic growth process. Levine and Renelt (1992) also found that knowledge appeared to exert a high positive impact on economic growth.

Several empirical studies have demonstrated a positive relationship between education and economic growth. Lockheed et al. (1980) overview of 18 studies on the correlation between education and productivity conclude that most studies found a positive and significant relationship. Similar results were observed by other studies (Barro, 2000; Hanushek et al., 2008; Wobst and Seebens, 2005).

In terms of the impact of different education levels on economic growth, several studies such as Liu and Armer (1993); McMahan (1998); Pereira and Aubyn (2009); Self and Grabowski (2004) concluded that primary school level has a significantly positive effect on economic growth. Other studies found that the impact depends on the economy of the country itself. Mingat and Tan (1996) in an assessment of 113 countries found that higher education has a positive statistically significant influence only in the group of developed economies, whereas

primary education has a positive effect in less developed and secondary education, a positive impact on developing countries. Similarly, Petrakis and Stamatakis (2002) found that the growth effects of education depend on the level of development; low-income states benefit from primary and secondary school, while high-income developed countries benefit from higher education.

In support of the above results, Villa (2005) investigated the effect of the three levels of education on economic growth for Italy and found that higher and secondary education has a positive effect on economic growth, while primary education has no significant effect. In the same vein, Shaihani et al. (2011) for the case of Malaysia concluded that in the short run only secondary education has a positive and statistically significant coefficient, while primary education exhibit negative and statistically significant results, while only higher education has a positive and significant effect in the long run.

4.5.4.3 Scientific and technical journal articles

Innovation is considered one of the primary drivers of an economy, especially since the primary work of Schumpeter (1934a). It affects the economy in many ways, such as economic growth, employment, global competitiveness, financial systems, infrastructure development, quality of life, trade openness, and hence, generates high economic growth (Ulku).

New developments in technical know-how capacity can only be maintained by inventions and innovations, which mean the exploration of new knowledge and application of this new knowledge to current production techniques (Tuna et al., 2015). During the creative process of inventions, new knowledge, and innovations, the most important factor is research and development activities (Begg et al., 1994). Therefore, the countries aiming to improve the performance of economic growth should put a significant emphasis on R&D expenditures.

Starting from the late 1980s, Paul Romer, influenced by Schumpeterian tradition, has pointed out technical innovations as the eventual source of growth in the framework of market optimisation (Tuna et al., 2015). There are three primary studies about the endogenous growth literature based on R&D, which argue that the fundamental motive of economic growth is R&D activities. These studies offer three imposing models developed by Romer (1990b) and Aghion and Howitt (1992). The common idea of these three models is the counterfactual prediction of the effects of scale. The common prediction claims that any rise in the level of resources allocated to R&D should inevitably increase the economic growth rate (Tuna et al., 2015).

Empirically, Adams (1990), using the number of academic and scientific papers of multiple scientific fields to proxy for the stock of knowledge, found that technical knowledge contributed significantly to the total factor productivity growth of U.S. manufacturing industries for the period 1953-1980. Van Pottelsberghe et al. (2001) examined the long-term effects of several types of R&D on multifactor productivity growth using panel data for the OECD from 1980 to 1998. They found that business, public and foreign R&D all have statistically significant positive effects on productivity growth. Lederman and Maloney (2003), utilising regressions with data panels between 1975 to 2000 over 53 countries, finds that a 1% increase in the ratio of total R&D expenditure to GDP improves the growth rate of GDP by 0.78 percentage.

4.5.5 Physical Infrastructure Indicators (P)

Economists have viewed infrastructure as a key ingredient for productivity and growth since at least Adam Smith (Canning and Pedroni, 2004). The theoretical analysis of the effect of infrastructure on growth lies at the root of growth theory. In Barro (1990), infrastructure, as measured by public capital, was treated as an additional input in the aggregate production function in the framework of the endogenous growth model, and Futagami et al. (1993) extended the study by adding the private capital stock. Empirical literature supports the role of infrastructure in promoting growth, such as Canning (1998), who used telephones and paved roads as a proxy for infrastructure quality and found a significant impact on growth. Seethepalli et al. (2008) examined infrastructure subsectors, such as energy, sanitation, water supply, transport, and telecommunications, by applying standard growth regressions on 16 economies in East Asia. The study indicated a significant positive relationship between infrastructure and economic growth in all infrastructure indicators. Additionally, Nye et al. (2011) extended this study using physical infrastructure indicators across four sectors: telecommunications, energy, transport, and water. Growth regressions and growth accounting were used, showing that the growth rate of stocks of these variables had a positive and significant impact on the growth rate.

The same view is supported by Calderón and Servén (2004) who provided a comprehensive assessment of the effect of infrastructure improvement on economic growth in Africa by using physical indicators in the telecommunications, power, and transport sectors, using data for 136 countries for 1960 - 2005. The findings showed that growth was positively affected by infrastructure stocks and the quality of infrastructure services. Moreover, Shafik and Bandyopadhyay (1992) found that water and sanitation improve with increases in per capita

income; furthermore, they explored the policy effects across countries for the effect of income and concluded that income has the highest significant effect on water and sanitation of the variables analysed.

4.5.6 Other Control variables:

4.5.6.1 Annual population growth rate

The traditional perspective has been that population growth has opposing effects on economic growth. The view that population tends to grow too fast and put pressure on the capacity of a country to provide adequately for its people has existed for centuries, long preceding Thomas Malthus (Johnson, 1999). Many empirical studies support that opinion, such as (Abdelbary and Benhin, 2018; Barro, 1996a; Birdsall, 1988; Morozumi and Veiga, 2016). Levine and Renelt (1992) studied this relation for 103 countries and published the results of five different regressions, the coefficient of population growth was statistically significant in only one regression and was negative, while in the rest it was statistically insignificantly.

4.5.6.2 Oil rents

Most of the studies in the literature of the impact of natural resources on economic growth widely admit that natural resource abundance is a ‘curse’ for economic performances. More specifically, this stream of literature asserts that point-source non-renewable resources, such as minerals and fuels, can hamper growth (Philippot, 2010).

Case studies and historical examples also tend to confirm the negative impact of natural resource abundance on economic performances. Havranek et al. (2016) provided a meta-analysis on this relation from 33 econometric studies reporting 402 regression estimates. Approximately 40% of these estimates are negative and statistically significant, 40% insignificant, and approximately 20% are positive. A significant number of both theoretical and empirical studies have attempted to understand why natural resources are a ‘curse’ rather than a ‘blessing’ for economic development. Gylfason (2002) consider that natural capital crowds out other forms of capital (human, institutional, physical, and foreign). In addition, Gylfason put forward the argument that natural resource curse only occurs in countries with the low institutional quality and that with sufficient quality of institutions, natural resources can foster long-term development.

4.5.6.3 High-tech products/exports

The relationship between the level of technology and economic growth has been documented in several studies for almost half a century. As discussed previously, early neoclassical models like Solow (1956) treated technical change as an exogenous variable, illustrating how long-run economic growth only depends on (exogenous) technical change. On the other hand, more recent models of the endogenous growth literature share the characteristic that a continuous rise in the level of resources spent on the creation of new technologies leads to a continued surge in economic growth (Romer, 1990a). New growth theorists agree that total factor productivity (TFP) characterises the best measure of technology modification and exercises a dominant effect on a country's growth performance (De Loo and Soete, 1999).

4.6 Scope of the study

4.6.1 Characteristics of the data

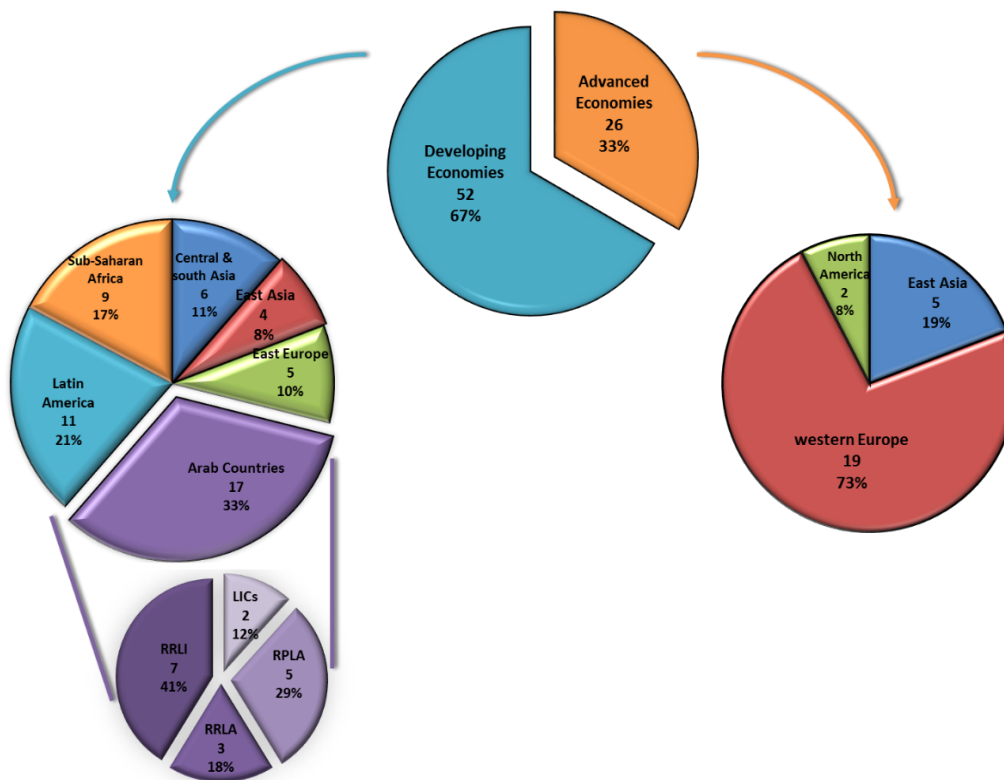
The research analyses the trends and directions of the indicators, as mentioned above, as well as the relationships between them, then estimate the economic growth function developed previously, using two main statistical programmes, EViews 8 and Stata 14. The study draws upon multiple data sources for annual time-series data on a host of economic, social, political, and institutional indicators for 78 countries from seven different regions representing both advanced and developing economies based on the availability of the data and the equivalent representations of each sample. As Figure 4.2 shows, amongst these countries, 17 are Arab countries (ARB); 6 are Central & South Asian countries (CSA); 9 are East Asian countries (EAS); 24 are European countries (ECS); 11 are Latin America countries (LCN); 2 are North American (NAC) ; and 9 are Sub-Saharan Africa countries (SSF).

In addition, following World Bank (2006) and Kuncic (2016), which categorised Arab countries in terms of the economic, social, institution, the current study classified Arab nations into four subgroups according to their natural-resource wealth, labour abundance and level of income. The first group is “resource-poor, labour-abundant (**RPLA**)” or emerging economies (Egypt, Jordan, Lebanon, Morocco, Tunisia, West Bank and Gaza). The second, “resource-rich, labour-abundant (**RRLA**)” or transition economies (Algeria, Iraq, and Syria). The third group is “resource-rich, labour-importing (**RRLI**)” economies (the rich Gulf Cooperation

Council (GCC) Countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE) and Libya)). Finally, “low-income countries (LICs)” (Sudan and Yemen)²³.

However, in order to achieve the research objectives, in the analysis part of Chapter 7, the study re-classified Arab countries into three groups as follows: Gulf countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE); Emerging economies (Egypt, Jordan, Lebanon, Morocco, Tunisia); Countries with civil war (Algeria, Iraq, Libya, Sudan, Yemen and Syria). The logical reason for this re-classification is primarily a technical one, since panel regression analysis of samples consisting of two or three countries may lead to an unreliable result. Secondly, countries that have experienced civil war must be isolated into a separate group to avoid the impact of armed conflict on economic indicators where conflict affects the financial sectors of developing countries at many levels: at the macroeconomic level by disrupting general economic confidence; also damaging key financial institutions. At the microeconomic level, by disrupting the social relationships essential for commercial transactions. Any conflict can lead to financial instability, especially in poorer countries, where business infrastructure is not well developed (Baddeley, 2011).

Figure 4.2: The distribution of countries in the study samples



²³ For the list of countries see Appendices 4.5.1-5

4.6.2 Sources of data

The data sources for the research include the following:

1. **World Development Indicators (WDI)**²⁴ is the primary World Bank collection of development indicators, compiled from officially recognised international sources. It presents the most current and accurate global development data available and includes national, regional, and global estimates. Data includes over 800 indicators covering more than 150 economies. The annual publication is released in April of each year and updated three times a year. WDI provides data for human capital indicators and physical infrastructure Indicators.
2. **The Economist Intelligence Unit (EIU) CountryData**²⁵: EIU macroeconomic database is the most comprehensive source of economic indicators and forecasts available. CountryData delivers more than 320 economic series, over 1 million individual data points, from 1980 to present. In addition, it includes regularly updated data and forecasts of 40 commodities that are essential information for any business with exposure to international commodity markets. EIU provides data for GDP, macroeconomic stability indicators, and external stability indicators.
3. **UNCTADstat: World Statistical Database** created by the United Nations Conference on Trade and Development (UNCTAD), this statistical database provides extensive coverage of topics including foreign direct investment (FDI), diversification index and structural and business reform indicators.
4. **The Worldwide Governance Indicators (WGI)**²⁶ is a research dataset summarising the views on the quality of governance provided by many enterprises, citizen and expert survey respondents in industrial and developing countries. These data have been gathered since 1996 from several survey institutes, think tanks, non-governmental organisations, international organisations, and private sector firms. They measure the quality of governance in over 200 countries based on close to 40 data sources produced by over 39 agencies worldwide and are updated annually. The Worldwide Governance Indicators capture six key dimensions of governance (voice and accountability, political

²⁴ (World Bank, 2017b)

²⁵ (EIU, 2017)

²⁶ (World Bank, 2017c)

stability and lack of violence, government effectiveness, regulatory quality, the rule of law, and control of corruption).

4.6.3 Missing Data

Dealing with missing data was a critical issue in the data preparation stage. The limited availability of some of the economic and social variables in the four databases mentioned above constituted a serious challenge to the study. The issue has been managed through the following procedures:

1. Update the data from original databases such as oil rent updated from annual OPEC reports (http://www.opec.org/opec_web/en/publications), health variables from WHO reports (<http://www.who.int/gho/publications/en/>) and educational variables from the UNESCO database (<http://data.uis.unesco.org/>).
2. If the data was still missing, the search then moves on to annual national accounts reports available from local agencies such as ministries or central banks of each country.
3. In very few cases, the missing data was dealt with by statistical methods such as forecasting (random walk, Mean, linear trend, quadratic trend, moving average and smoothing). This approach was based on Allison (2001) and Davidson and MacKinnon (2004).
4. However, the difficult challenge was the shortage of external stability variables for developed countries after 2005, which seemed not to be available online in any databases, particularly: foreign debt and international reserves, and in the latest database update in 2017, the whole-time series were not available for OECD countries. To overcome this problem, the author tried to obtain this missing data through contacting several agencies such as OECD, Eurostat, and the UK Office for National Statistics, but this proved unsuccessful²⁷. Therefore, two aggregate variables have been created for external stability. The first aggregate variable for developing countries included four indicators: the current balance, foreign debt, international reserve and diversification index, while the second aggregate variable for Advanced economies included only three indicators: current balance, diversification index and terms of trade²⁸. Notably, this classification helped to enrich the analysis of the study comparison between developed and developing countries, as the

²⁷ OECD (<http://www.oecd.org/contact>), Eurostat (estat-webmaster@ec.europa.eu), and Office for National Statistics (info@ons.gsi.gov.uk).

²⁸ The distinction between advanced economies and developing countries was based on the classification of the IMF

sample of advanced economies was used as a benchmark for other results from other study samples to find out the causes of prosperity and the obstacles to development.

4.7 Estimation Approaches and Econometric Techniques

Panel data methods are the preferred approaches for pooled cross-country and time-series data (Durlauf and Quah, 1999; Temple, 1999) since panel data methods provide more information, more efficiency and less multi-collinearity (Baltagi, 1999; 2005). Panel estimates also provide higher degrees of freedom, are more informative, and biases are substantially smaller than cross-sectional estimates. The technicalities of panel data analysis in this thesis are based on Baltagi (2008) and Wooldridge (2010) who summarise the core knowledge and issues regarding econometric methodology.

One of the biggest challenges faced in panel data estimation is how to deal with heterogeneity characteristics in the dataset. Barbieri (2006) has, however, noted that the development of heterogeneous panel unit root and panel cointegration tests have greatly enhanced empirical analysis using panel data.

Therefore, the estimation approach involves several stages: Firstly, panel unit-root test is estimated based on Levin -Lin-Chu (LLC) test (2002), and Im-Pesaran-Shin test (IPS) (2003), to ensure the variables are integrated of the same order. Secondly, the panel cointegration technique based on Pedroni (1999) and Kao (1999) is applied to check whether there is a long-run cointegrating relationship between the variables. The research is especially interested in the group-statistics, which consider heterogeneity. Thirdly, the estimation tests the relevance of unobservable individual effects through Lagrange Multiplier and Hausman tests. Lastly, the analysis used the Shapley value (Huettner and Sunder, 2012) to interpret the importance of each component of reform programmes. Each of these steps is explained briefly in the following sub-sections.

4.7.1. Panel Unit Root Tests

The Monte Carlo simulations recommend that panel unit root tests are more powerful than time series unit root tests since the power of unit root tests increases by including cross-sectional information (Levin et al., 2002). The results of the panel unit root tests will determine the following stage of the methodology. If the different series in the model have different orders of integration, it is meaningless to proceed by performing co-integration tests among the

variables. While, if just one variable in the model has a different order of integration, this variable could be excluded and proceed with co-integration tests among the rest of the variables. In contrast, if all the variables are found to be integrated in the same order, especially I(1) variables, then, co-integration tests can be done as the following stage in our methodology. There are several types of panel unit root tests such as the Levin -Lin-Chu (LLC) test (2002), and Im et al. (2003), and assume that cross-sections are independent. These tests can be classified with respect to the homogeneity or the heterogeneity of the autoregressive coefficient; some panel unit root tests such as LLC (2002), Breitung (2000) and Hadri (2000) tests assume common unit root across countries, which is a potentially restrictive assumption (Levin et al., 2002). Whereas, other types allow for heterogeneity in the autoregressive coefficient, so it assumes the individual unit root process. This type of tests is less restrictive and has stronger power. They are proposed by Im-Pesaran-Shin test (IPS) (2003), Maddala and Wu (MW) (1999) and Choi (2001). Based on these, the study analysis examines the stationarity of the variables using two-panel unit root tests widely used in empirical studies and represent the two types of tests, namely, LLC, and IPS.

4.7.2. Panel co-integration analysis

Once the existence of a panel unit root has been established, the issue arises whether there exists a long-run equilibrium relationship between the variables. The variables may move apart in the short run but move together in the long run. If these variables are not individually stationary, but their linear combination (residuals) is stationary, they may be co-integrated. Co-integration tests have to be carried out after unit root tests to investigate whether variables have stochastic trends or not, and when such trends are common between variables (Lim, 2001).

Despite the increasing popularity of the co-integration techniques in the literature, the low power of these tests when applied to short time data is the main problem. The length of the data has been found as the reason for the low power of these co-integration tests. Pooling cross-sectional data and time-series data allows for more degrees of freedom and enhances the power of the co-integration techniques (Pedroni, 1999). Therefore, this study uses unit root and panel cointegration tests to demonstrate the existence of such a relationship before estimating it. Two-panel co-integration tests have been performed in this study to examine the co-integrating relationships among the variables in the models, namely, Kao and Pedroni tests.

4.7.3. Heterogeneity of the countries

A cross-country panel data regression has double indices on its variables as in equation (4.29):

$$\ln(RGDPG_{it}) = \alpha_0 + \varphi_1 \ln(GDP_{i,t-1}) + \theta_1(M_{i,t}) + \theta_2(E_{i,t}) + \theta_3(B_{i,t}) + \theta_4(P_{i,t}) + \theta_5(H_{i,t}) + \theta_6(G_{i,t}) + \varphi_2(oil_{i,t}) + \varphi_3(A_{i,t}) + \varphi_4(H6_{i,t}) + \varepsilon_{i,t} \quad (4.29)$$

Where i denotes countries, t denotes periods and ε can be decomposed into a two factor error components disturbance model: $\varepsilon = d_i + d_t + v_{i,t}$, with d_i representing the unobservable individual country effect while d_t indicates the associated unobservable time effect, and $v_{i,t}$ is the remaining independent stochastic error term. In this specification, d_i is time-invariant and accounts for an individual country-specific effect that is not included in the regression. d_t is country invariant and accounts for any time-specific effect excluded from the regression. Treating error components for d_i and d_t differently results respectively in fixed effects and random effects models (Mátyás and Sevestre, 2008).

In the fixed-effects model case, $v_{i,t}$ is the only independent stochastic error term while both d_i and d_t are assumed to be fixed parameters - these are dummies that can be estimated in the model. This specification introduces more individual dummies and possibly suffers from the consequent loss of degrees of freedom. The parameters of interest can be estimated by least squares dummy variables (LSDV). However, the disadvantages of this method are that any other country-invariant or time-invariant variables such as race, geographical location, regional crisis, or group cannot be exploited. On the other hand, too many dummies might increase the risk of multicollinearity.

The random-effects model treats both d_i and d_t as well as $v_{i,t}$ as stochastically independent disturbances. Thus, the relative effects of the unobservable country and time dummies, as well as the variance of the error term, can be estimated and compared. The attractive aspect of this approach is that country, or time-invariant factors can be investigated via dummies. The model can be estimated by Generalised Least Squares (GLS).

In practice, there are several test statistics for model selection within the panel data approaches. Firstly, the Lagrange Multiplier (LM) test can be used to decide between OLS and random-effects models. Lm test can allow testing the relevance of unobservable individual effects (Mátyás and Sevestre, 2008). These tests the null hypothesis of the irrelevance of unobservable individual effects, against the alternative hypothesis of the relevance of unobservable individual effects. If the null hypothesis is rejected, this will imply that unobservable individual effects are relevant, therefore, pooled OLS regression is not the most appropriate

way of carrying out the analysis of the relationship between GDP growth and its determinants, i.e., unobservable individual effects are of relevance and should be incorporated in the analysis. On the other hand, there may be a correlation between countries' unobservable individual effects and growth determinants. If there is no correlation, the most appropriate way of carrying out analysis is using a panel model of random effects (Higgins and Green, 2008; Hsiao, 2014).

Secondly, Hausman (1978) statistic, is used for selection between fixed and random effects models. A large value of the Hausman statistic favours the fixed effects model over the random one. Hausman test is used to test for the possible existence of a correlation. These tests the null hypothesis of the non-existence of correlation between unobservable individual effects and growth determinants, against the alternative hypothesis of the existence of a correlation. If the estimated chi-square is significant, we can conclude that correlation is relevant and therefore, a panel model of fixed effects will be the most appropriate estimation approach (Mátyás and Sevestre, 2008).

4.7.4 Endogeneity concern of institutional variables

The other empirical concern in the study analysis is related to introducing governance variables in regression estimation. Empirical institutional studies invariably encounter endogeneity problems due to causality issue as governance is thought to be endogenous to growth as reverse causation is possible. To tackle this problem, Instrumental Variable (IV) technique is often employed in the context of endogeneity through two-stage least squares (2SLS) regression analysis. In previous studies, different instrument variables are generated; for example, ethnolinguistic fractionalization as used by Butkiewicz and Yanikkaya (2006); Mauro (1995). According to Mauro (1995), ethnic conflicts may affect political instability or probably to civil war. The presence of multiple different ethnolinguistic groups is also strongly correlated with worse corruption, as bureaucrats may prefer members of their same group.

Other studies utilised settler's mortality such as Curtin (1989) and Sachs (2003) who used the pattern of rainfall and the precise vegetation, as they play a significant role in determining the risk of malaria. Acemoglu et al. (2001) assume that high mortality will lead the colonies state to become an extractive state, but low death will lead to a stable settlement of Europeans and subsequent development of relevant institutions. They believe that the influence of these early institutions have continued to the present day and determine current institutions. While others adopted colonial origins such as, distance from the equator, a fraction of the population that

speaks English, and a fraction of the people that speak another European language (Hall and Jones, 1999), in different studies done by Acemoglu et al. (2001;2002) they argue that both settler mortality and indigenous population density in 1500 can be used as IV for modern-day political institutions constraining the executive.

In contrast, according to Ahmad and Hall (2017), most of these instruments often ignores country-specific features of economic growth, which may be correlated with independent variables, causing omitted variable bias. Besides, endogenous institutions are invariably challenging to be instrumented as reliable instruments that can be associated only with explanatory variables and not with the error term are indeed short of supply. Concerns have been raised over the use of specific variables as instruments for institutions. For instance, Glaeser et al. (2004) claim that "the settler's mortality and indigenous population density in 1500" which was used by Acemoglu et al. (2001) are invalid because they are strongly correlated with GDP per capita, and in many cases, Seattle colonizers did not bring the quality of their institutions to colonies. In addition, none of all the instrumental variables used previously is adequately appropriate to the Arab countries, the primary concern of this study (Helfer, 2017). In the Arab world, there are limited differences among people based on race or religions. Arab nations as well have not been under Western colonisation for many centuries or experience different forms of colonialism, such as Spanish or Portuguese, or even have different levels of rainfall as most of the region suffers from a dry climate.

Therefore, Caselli et al. (1996) and Bond et al. (2001) utilise the Generalized Methods of Moments (GMM) dynamic panel data (DPD) estimation to correct for unobserved country heterogeneity, omitted variable bias, measurement error, and endogeneity problems in their growth estimation. Many empirical studies such as Alguacil et al. (2011); Bond et al. (2001); Calderon et al. (2007); Li and Wang (2016); Nawaz (2015); Rachdi and Saidi (2015); Rizov (2008); Uddin et al. (2017), employed dynamic panel GMM estimation in two versions (difference and system) as it takes the first difference of all variables in the model to eliminate time-invariant country effects, and then use lagged level of endogenous explanatory variables as the instruments. For lagged dependent variable that may be correlated with the error term, higher-order lags of the dependent variable are used as an instrument for lagged (one) dependent variable.

Notwithstanding, in this study, the GMM estimation will only be valid to be applied for the grouping of advanced economies and developing countries based on the sample sizes criteria, as both of them are "short panel" - the number of countries is higher than the length of the study

($N > T$). While the rest of the study samples in the whole Arab countries and sub Arab groups are a "long panel" ($N < T$). In the second case, according to Wooldridge (2013), GMM estimators are not the most suitable procedure even by using system GMM that produce efficient estimators able to tackle the issues like small sample bias. The estimators will be inconsistent and highly unstable as the period for the analysis is relatively large compared to the number of observations. The source of bias is the relative number of instruments to sample size. Hahn and Hausman (2002) showed that "many instruments problem" occurs due to the magnitude of the bias is proportional to the relative size of the number of instruments to the sample size. The problem is, GMM estimators depend strongly on the ratio of the variance of the individual-specific effects and the variance of the general error term (Abonazel, 2017).

Therefore, to overcome these problems, the analysis in this study employs a bias correction to the Least Square Dummy Variable (LSDVC) technique to undertake 100 repetitions of the procedure to bootstrap the estimated standard errors. The estimator for dynamic panel data models allow us to avoid the endogeneity problem and has relatively low variance hence can lead to an estimator with lower root mean square error after the bias is removed (Abonazel, 2017; Bun and Carree, 2005;2006; Castro, 2017). Regarding dynamic panel data models, Bun and Carree (2005); Kiviet (1995) presented Monte Carlo evidence indicating that the bias-corrected estimator proposed by Kiviet (1995) may outperform IV and GMM estimators. In addition, according to De Vos et al. (2015); Santos and Barrios (2011) using the bootstrap procedure for DPD mitigates the bias and inconsistency that these estimators are known to exhibit for small samples. However, the bias correction Fixed Effect is appropriate for the analysis, when only the Hausman test was significant as the null hypothesis of the absence of correlation between countries' unobservable individual effects and growth determinants were rejected. Otherwise, the pooled OLS could be used for the analysis, especially, if the observations are very small, then the asymptotic results underlying all treatments for endogeneity are not indeed recognised (Abonazel, 2017).

4.7.5 Shapley value decomposition

For further clarification and confirmation after traditional regression analysis, the study applied the Shapley value (SV) regression-based techniques to determine the relative importance of each component of reform (environmental variables). While variance decomposition methods are widespread in research related to poverty and income inequalities, few applications exist in economic development studies (Lamu and Olsen, 2016). The Shapley (1953) decomposition

is inspired by the classic cooperative game theory problem of dividing a pie equitably, to which the Shapley solution assigns each player her marginal contribution averaged over all possible coalitions of agents (Moulin, 1991).

Based on Huettner and Sunder (2012), and Shorrocks (2013) the SV measures the marginal contribution to the estimated R-square by adding a given independent variable to the model, weighted by the number of permutations represented by this sub-model. Furthermore, Shapley Regression is a reliable and stable method for the estimation of predictor importance. The SV decomposition is a desirable candidate as it is the only rule that satisfies efficiency, symmetry and monotonicity. The efficiency feature guarantees that the marginal contribution of each predictor sums up to the estimated R-square, and hence, no value is lost. It is also symmetric, meaning that two predictors that create the same additional amount receive the same share of the total value, i.e. the property of equal treatment. Monotonicity feature ensures that if all of the marginal contributions of a given predictor increases, its share will also increase.

4.8 Summary

This chapter has considered the methodological basis for all the following chapters of the thesis. In the first place, the chapter discusses the research design employed in the current study by outlining Burrell and Morgan's (1979) philosophy regarding different standpoints about the assumptions underlining the nature of social science and the nature of society. Furthermore, it presents the research paradigms and identifies the functionalist paradigm that is adopted in this thesis.

The chapter presents in detail the theoretical model of the study, which is primarily driven by the augmented Solow-Swan growth model with total factor productivity. In this model, societal payoffs to enhancements in the levels of both physical and human capital are seemingly dependent on the institutional conditions in which those investments occur. This helped to develop the empirical model to measure the economic reform effort of the sample countries by estimating a conditional convergence equation for economic growth. The originality of the model is through generating aggregated reform indicators using principal component analysis. This approach allows computing all control variables identified by 'Barro-type regression' into only six separate groups.

The chapter also clarifies the description and justification for adding each indicator in the model through highlighting the relationship of each component to the concept of reform and its expected influence on the economic growth. Moreover, section 4.6 demonstrates the characteristics of the data, samples size, the sources of the data and the procedures for dealing with a missing data problem.

Lastly, the chapter displays the estimation approach of the study which involves several stages: panel unit-root test to ensure the variables are integrated of the same order; panel cointegration to check whether there is a long-run cointegrating relationship between the variables; the heterogeneity of the countries to test the relevance of unobservable individual effects through Lagrange Multiplier test and Hausman test; and eventually, the Shapley value to interpret the importance of each component of reform programmes.

Chapter 5

Socioeconomic Reform and Development Challenges for Arab Countries

Chapter 5: Socioeconomic Reform and Development Challenges for the Arab Countries

5.1 Introduction

Arab countries (ACs) are diverse regarding their size, geopolitics, economic and social structure, level of income, natural resource endowments, ideological orientation, human capital and skills, economic policies and institutions, etc. However, the similarities between them abound, given the existence of several unifying threads related to social and economic conditions (Bibi and Nabli, 2010). The resource base of the region has been mainly oil, which has promoted the rapid economic and social development throughout the area. The Arab region is home to abundant natural resources as more than 80% of total exports in many ACs are oil exports. Even for economies where natural resources are less abundant, for example in Syria, fuel exports dominate the export structure, where oil exports comprise approximately 67% of the total Syrian exports (World Bank, 2010b).

Furthermore, gains from oil are not exclusive to oil-exporting economies but are rather enjoyed by other non-oil-exporting Arab countries as well, through labour remittances and aid flows. In addition, Arab nations, generally, are centralised states with a dominant public sector and, with few exceptions, ineffective private enterprise. ACs have been linked, since the time of their independence, with similar models of economic development based on central planning, and social strategies designed for redistribution and achieving equity.

In the same vein, the similarities of ACs have stretched to their challenges to development. In Arab economies, the state is the most influential economic player, overshadowing the productive private sectors. Besides, governments are usually the only providers for essential needs, such as food, shelter, energy, employment, and other public services (Schlumberger, 2004). The Arab system is characterised by massive subsidies, economic limitations, and a variety of non-competitive practices. While this centralised bureaucratic system has worked well for the ruling elites, it has failed to achieve prosperity and social justice for ordinary citizens (Malik and Awadallah, 2013). Neither the socialism of the 1950s and 1960s nor the neo-liberal economic reform of the 1990s has been able to change this system of centralised control and privilege.

These failures in the Arab region have been strongly attributed to the 2011 self-immolation by street vendor Mohamed Bouazizi, who set himself ablaze in protest, humiliated at having his pushcart confiscated by local authorities (Emara, 2014). The story of Bouazizi enraged the largely educated youth throughout much of the Middle East and ignited a wave of protests that spread throughout most of the Arab region, popularly referred to as the ‘Arab Spring’ (Ghosh, 2016). The Arab streets seemed to have made clear that they are no longer willing to accept these models of reforms. The Arab streets’ demands were encapsulated in the case of Egypt and Tunisia by the slogan, “Bread, freedom and social justice” – a slogan that emphasises the interdependence of inclusive governance, economic and social inclusion (UNDP, 2011).

To further understand the drivers and origins of the Arab Spring, this chapter contributes to investigating why Arab economies have failed to achieve sustained and inclusive development through evaluating the impact of socioeconomic reforms on economic performance. In other words, the chapter attempts to examine all possible explanations to this disappointing performance of the region, and whether it is attributed to the ACs’ economies being lagged behind in terms of reforms, or to the reform programmes themselves.

5.2 The evolution and impact of reform in the Arab World

Slow economic growth, deteriorating public budgets, and balance of payments deficits drove several Arab economies in the 1990s and 2000s, to undertake programmes of macroeconomic stabilisation and structural reforms prescribed by International Organisations. These reforms were primarily intended to restore macroeconomic balance and reduce inflation; make structural adjustments to stimulate medium and long-term growth; restructure markets based on competition, and encourage private sector development to become an engine for growth and employment creation (ADB, 2000).

Many Arab governments expressed their fear of liberalisation, privatisation, and deregulation, as they are sometimes construed to imply an absence of the state from the economic field. The fear is clearly influenced by the long socialist background that characterised their development strategy since the 1950s; when the state became directly involved in the production of goods and services. Hence, the public sector remained dominant over an extensive range of activities, which could not possibly be justified on developmental grounds. On the other hand, the private sector was absolutely absent from all essential sectors. At the same time, the public sector companies (or most of them) were operating at a low level of efficiency, which undermined

the capacity of the economy to grow at rates commensurate with the rate of population growth (El-Naggar, 1997).

Simultaneously, a dominant public sector together with some overly regulated economic activities, stifled initiatives, suppressed innovation and encouraged mismanagement and corruption. Under these situations, it is hardly surprising that reform programmes aim for privatisation and deregulation of the economy (Kamel, 1998). The state was required to withdraw from the production of commodities except in cases of market failure. Under a market-based economy, the state is the organiser, the regulator, and the arbiter (Sabri, 2002). In addition to its traditional roles in defence, security, and the judiciary, the government has an important role to play in education, health, poverty reduction, and the provision of a social safety net for vulnerable groups. No less important is the regulatory function, including prevention and control of monopolistic practices as well as setting and enforcing standards in numerous fields (El-Naggar, 1997). For the analysis in this chapter, Arab countries are classified based on the nature of their reforms and the approaches they followed to implementing these reforms, in addition to their institutional environments, which influenced the level of outcomes.

First, the Arab reformers include those countries that adopted World Bank-IMF structural adjustment and stabilisation programmes. These countries are characterised by being resource-poor and labour abundant (RPLA). They include Tunisia, Jordan, Morocco, Egypt, and Lebanon. The first three, namely Tunisia, Morocco, and Jordan, implemented earlier and more intensive reforms towards becoming more open and private sector-led economies than the rest of the ACs. They have seemingly wholeheartedly embraced all recipes of reform by the international financial institutions and have been hailed by donors as success stories. However, they still suffer from structural economic problems (Albrecht and Schlumberger, 2004; Pfeifer, 1999). All three joined the General Agreement on Tariffs and Trade (GATT) and signed Euro-Med agreements. Reforms also included exchange rate liberalisation, trade and financial sector liberalisation, tax reforms, and privatisation (Handoussa and El Oraby, 2004; Hissouf, 2014). Overall, the reform effort has been steady in these countries, and without policy reversals. However, the second group of reformers, namely Egypt and Lebanon, have taken a more slowly and sporadic approach to reform. Notwithstanding early reforms by aggressive macroeconomic stabilisation in the 1990s, reforms were partially reversed with escalating behind-the-border trade constraints and notable exchange rate overvaluation (Ahmed, 2006). For Lebanon, due to

a long period of civil war, the physical and economic infrastructure was destroyed, which had led to massive macroeconomic imbalances (Hammoud, 2011).

The second set of countries include those with significant oil resources and large populations (resource-rich and labour-abundant (RRLA)). These countries attempted reforms later; however, they did so more gradually, and more sporadically than the early reformers. They experienced serious macroeconomic instability originating from the fall in fuel prices and therefore pursued aggressive macroeconomic stabilisation. However, structural reforms have been far more limited, and reforms in essential areas such as the financial sector, trade, and investment liberalisation remain limited (Nabli, 2007).

The third group of Arab countries are the low-income countries (LICs) where macroeconomic stabilisation reforms have not been accompanied by other reforms to diversify the economy, despite relatively open trade policies (Zaid et al., 2014). The investment climate remains discouraging, reflecting the weak regulatory frameworks and security problems.

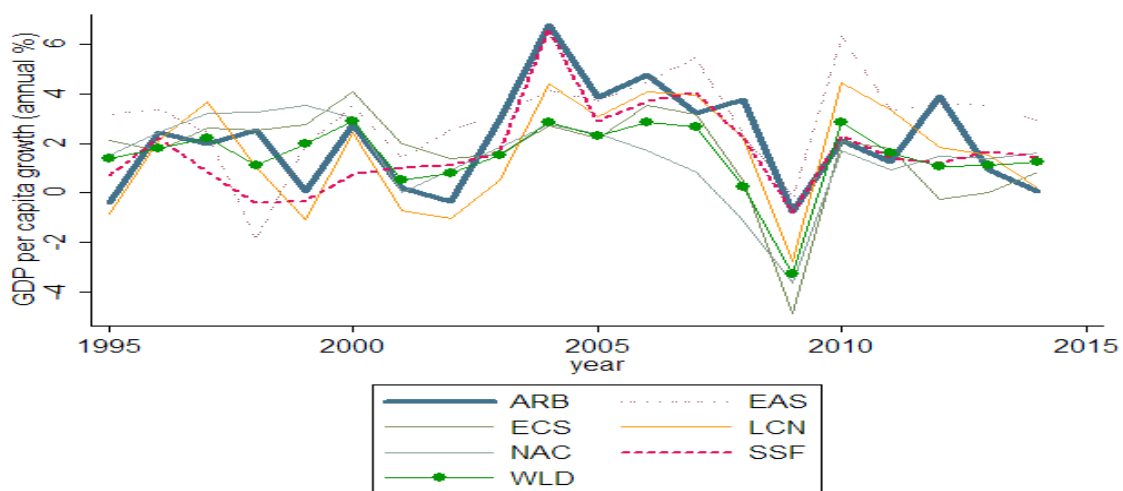
The last type of reform was practised in GCC economies or recourse-rich labour-importing (RRLI) countries - Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates - which have an open trade system with free mobility of capital and advanced financial systems. As oil prices declined, most of these countries cut expenditures, yet, their aggregate budget deficits have increased. Some Gulf countries have promoted growth in selected sectors such as entrepot trade (Emirates), financial services, and tourism (Bahrain and Emirates). Oman has made extraordinary efforts to broaden private sector participation and improve the investment climate, with privatisation and changes in its foreign capital investment law (Nabli, 2007). In Saudi Arabia, reforms have progressed more slowly. The public sector still dominates economic enterprises, and government revenues remain dependent on fuel.

According to Véganzonès-Varoudakis and Nabli (2004) despite implementing all these reforms, they did not significantly affect the standards of living of most Arab citizens, and the pace of reform differed markedly throughout the region. Moreover, some other studies have generally described the Arab reform experience as being slow and gradual (World Bank, 2008), disappointing and selective (Greenwood, 2008), unenthusiastic (Bellin, 2004), confused (Alissa, 2007), lagging behind and threatening the status quo (Hammoud, 2011).

It can be observed in Figure 5.1 that, on the average, during the last two decades, the economic growth rates, in Arab countries have been unstable and remarkably volatile. Although some of

these fluctuations are due to exogenous variables related to world economic conditions, such as the global financial crisis in 2008, overall sustainable growth rates necessary to cope with the demographic transition in the region failed to materialise. The figure also shows that on the average, the trend of the ACs' growth rates follows almost the same pattern as that of other regions. For instance, the ACs highest growth rate of 7% was reached in 2004, while the worst growth rate was hit in 2009 following the global financial crisis in 2008, similar to other regions, which reflect the failure to convert the growth into real development.

Figure 5.1: The pattern of mean GDP per capita growth in the Arab States compared to other regions (1995-2014)²⁹



Sources: Author based on World Development Indicators by the World Bank (2015)

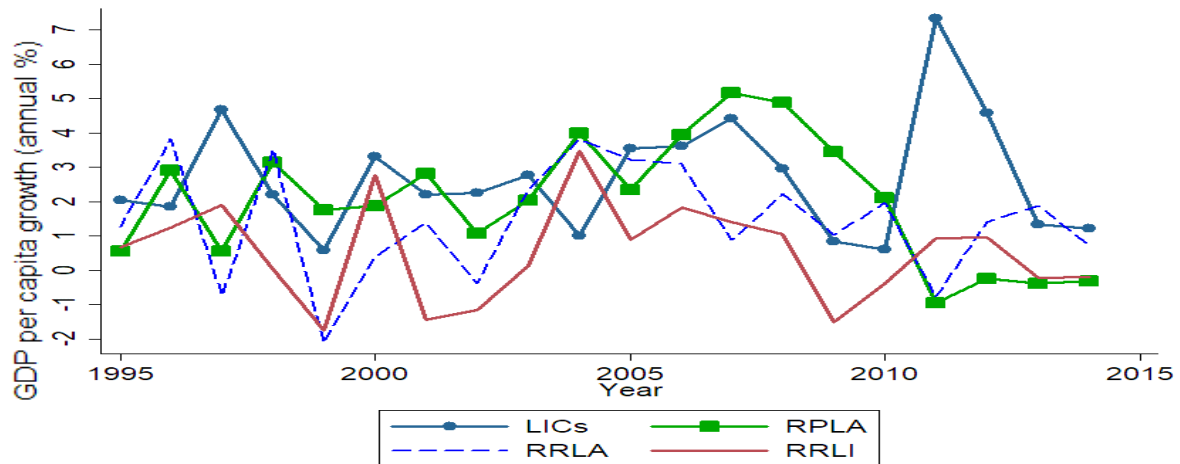
The volatile GDP per capita growth rate is not only evident in the Arab region as a whole, but it rather extends to and is more prominent in the four sub-Arab groups, as shown in Figure 5.2. The implementation of the above programmes seems not to have translated into the strong economic recovery that was anticipated.

Although GDP growth improved compared to the crisis-ridden 1980s, per capita GDP growth remained weak, averaging 1.5% per year in the 1990s. Despite the accelerating economic growth in the early new millennium, per capita GDP growth continued to vary and declined rapidly. For example, RRLI had a comparatively lower growth rate throughout the period, excluding the years 2014 and 2015, with an average of 0.20% only, whereas LICs had higher

²⁹ Arab World: ARB, Sub-Saharan Africa (SSF), South Asia(SAS), Latin America & Caribbean(LCN), Europe & Central Asia(ECS), East Asia Pacific(EAS), and the World(WLD).

rates in the same period with an average of 1%. On the other hand, Arab reformers or RPLA had a more stable rate; however, this progress collapsed following the political unrest in 2011.

Figure 5.2: The pattern of mean GDP per capita growth for the Arab Region (1995-2014)

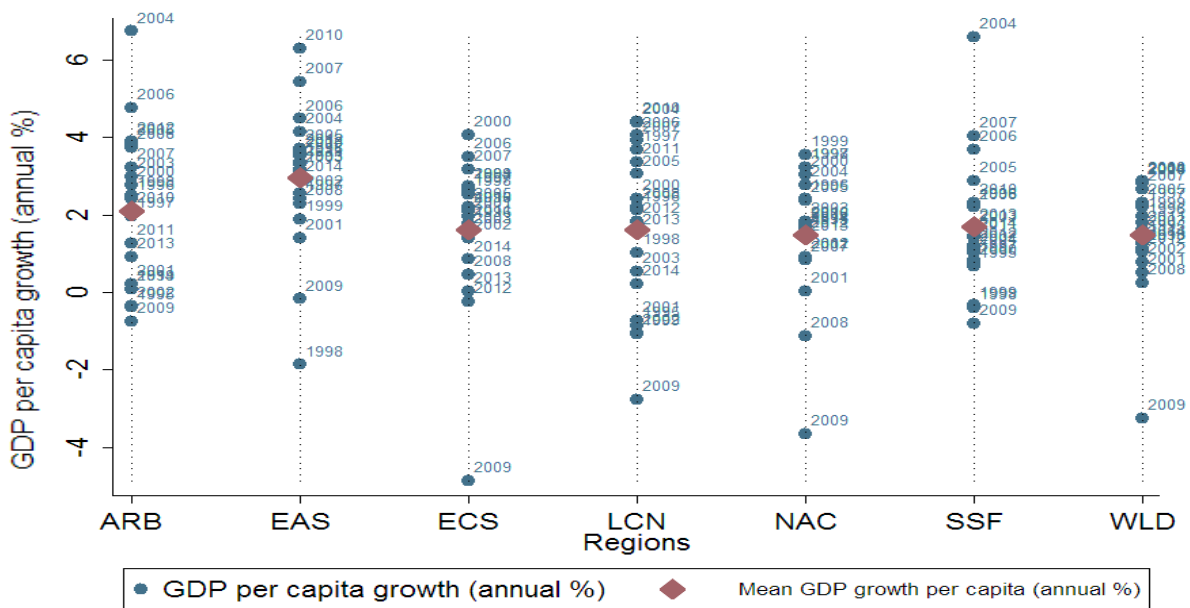


Source: Author's estimates based on World Development Indicators by the World Bank (2015)

Moreover, using fixed-effects approach to examine the heterogeneity of GDP per capita growth across each region, Figures 5.3 confirms the results in Figure 5.1 and 5.2, that the growth pattern in the Arab world has been unstable following a similar pattern as other regions. Nevertheless, estimating the GDP per capita functions across the period of the study in the Arab States compared to other regions demonstrate that the ACs have shown the second-worst performance in the world, after the poorest performing region of Sub-Saharan Africa (SSF), as shown in Figures 5.4 and Map 5.1 in Appendix 5.2. For instance, the average growth rate for ACs during the whole period was 0.55%, which is below the overall average of advanced economies and developing countries (0.80% and 0.88 % respectively).

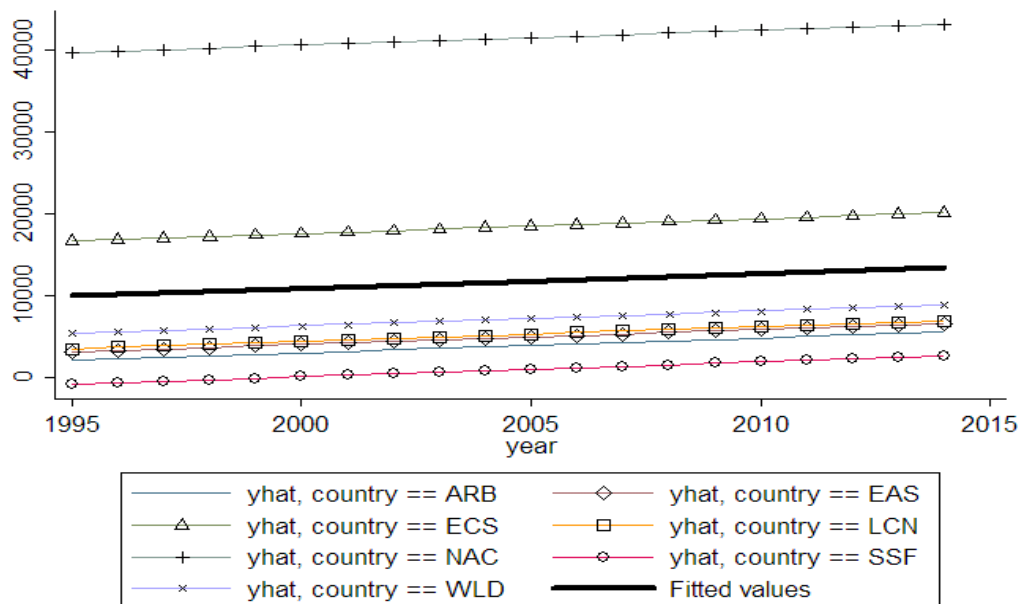
Despite a growing body of literature concerning Arab reform, especially after 2011, most studies only provide a general overview without sufficient details. Also, the majority are interested in the economic aspects rather than other dimensions of reform, and the question of the inclusive framework of reform seems not to have received due consideration. Even in the economic perspective, it is remarkable that sectoral and single-issue studies that focus on one point of the reform process dominate the scene (Ahmed, 2006; Harik, 2001; Omran, 1999; Sabri, 1997; Sayan, 2009; Tekin-Koru, 2009).

Figure 5.3: Fixed effects estimates: heterogeneity across countries for GDP per capita growth in Arab Countries compared to other regions, 1995 - 2014



Source: Author's estimates based on World Development Indicators by the World Bank (2015)

Figure 5.4: GDP per capita growth function in the Arab States compared to other regions, 1995 – 2014



Source: Author's estimations

Furthermore, there is an apparent lack of comparative studies. Although the benefits of comparative methods in the social sciences are beyond doubt, the vast majority of authors seem to ignore this and instead focus on either single-country studies or single-sector analyses. The

previous studies failed to recognise the region-wide patterns of economic policy reform in the Arab world as a whole. A comparative approach to the study of economic reform would be required to capture those patterns in this part of the globe. Most of the economic literature on reform in the Arab region remains as much of a piecemeal as the implementation of reforms themselves. What is missing is a truly comparative and comprehensive study that assesses similarities and differences at the origin, execution, and output of liberal economic change across the region. However, the unavailability of reliable and standardised data makes such comparisons more complex. In many cases, data from one country are inconsistent or even incomparable with those from another, which makes it hard to construct arguments based on comparative approaches.

This chapter, therefore, employs a comparative heuristic approach to compare the outcomes of economic reform in the Arab world with those in other world regions. According to Maxwell (2004) and Ebbinghaus (2005) comparative cross-country analysis is a more appropriate method than cross-country statistical analysis, based on assumptions regarding homogeneity, independence and the representativeness of the sample. However, both the comparative heuristic approach and cross-country statistical analysis are adopted for this study, because together, they provide a more robust approach to understanding the issues examined in the research.

The comparative heuristic approach is implemented at two levels: The external level, comparing the Arab Region to other regions in the world, both developing and advanced; the internal level, comparing between the subgroups of Arab countries.

Evaluation of the impact on reform in the Arab region is probably the most difficult concerns surrounding the reform debate (Hammoud, 2011; Omran, 1999; Pornwilassiri, 2002; Yousef, 2004). This is due to many key issues that remain debatable, such as: What is reform? How can we measure improvement? How is economic performance linked to reform? What is the link between reform initiatives and traditional economic indicators? These questions do hinder the evaluation of reform efforts and initiatives undertaken by several Arab states over more than 20 years of reform experience in one way or another.

Consequently, the study addresses these questions by creating aggregated reform indicators to capture reform outcomes originating from indicators connected to reform. For instance, economic reform consists of macroeconomic stabilisation and structural adjustment. Each of

these represents a set of measurable indicators (economic indicators) that measure the impact of reform and its effect. In order to achieve this, the research defines reform as "the policies and actions were taken by a government to achieve a significant improvement in the economic condition, aiming to achieve inclusive development and to improve the standard of living of citizens. These policies should be associated with the adaptation of social policies to minimise contractionary effects of economic reform on the poor and vulnerable groups".

Based on this definition, reform is divided into three major component elements, two of which are explicit, and the other is implicit. The direct components include economic and social factors, while the political and institutional components are considered as a prerequisite environment that should exist to make a reform active and influential.

The rest of this chapter focuses on the economic and social aspects, and the next chapter is concerned with the political and institutional elements. The next sections of this chapter are organised to present the evaluation of the efforts of reform in the Arab region during the last two decades by discussing in detail the progress of aggregated indicators of reforms.

5.3 Descriptive analysis of Aggregated Indicators of Economic and Social Reforms:

It is feasible to recognise the main targets of a reform programme; however, the details of any specified reform variables differ from one country to the other (Ahrend, 2007; Azim, 1999; Canton et al., 2014; Dabla-Norris, 2016; Korayem, 1997; Omran, 1999; Sabri, 1997;2002; Sachs et al., 1995; Williamson, 1990) . This could be due to the non-homogeneity of the economies of the states, which implies that there will be variations on the theme of reform variables. Taking these studies into consideration, the aggregated reform indicators in this thesis were generated based on the common variables of any programme of economic reform applied in several countries in different regions, particularly, in Latin America, Eastern Europe, and the Middle East.

These variables have been assessed using principal component analysis (PCA), as discussed earlier in chapter four³⁰. This method was used to generate three economic aggregate indicators and two social indicators, to support the empirical analysis in the following chapter³¹.

³⁰ The details description of each indicator presented in Appendixes 5.3,5.4, 5.5, 5.6 and 5.7.

³¹ The descriptive statistics of the data are presented in Appendix 5.1

5.3.1 Macroeconomic Stability indicators (*M*)

Macroeconomic stability denotes specific factors that lead to a stable and robust environment in which individuals and companies can reliably engage in transactions. In such a stable macroeconomic environment, the GDP is expected to increase at a reasonable pace each year. Such increases allow a country's citizens to enjoy a stable or better standard of living. The aggregate macroeconomic stability indicator was measured by the following key indicators: Official exchange rate; budget balance as a percentage of GDP; public debt as a percentage of GDP; consumer price index; and recorded unemployment³². Given the nature of the variables included in this aggregation, the reform of macroeconomic stability indicator was estimated as a reciprocal indicator. Therefore, low and negative values represent an improvement in the reform, while large and positive values indicate bad macroeconomic stability conditions.

As shown in Figure 5.5, macroeconomic stability index was generally declining gradually over the period 1995 - 2014, for all world regions, with the exception of Central Asia and the developing economies in East Asia where a considerable improvement is noted. However, there was a wide difference in internal stabilisation between advanced economies with an average -0.2 and developing countries with an average of 0.1, especially before the global financial crisis in 2008.

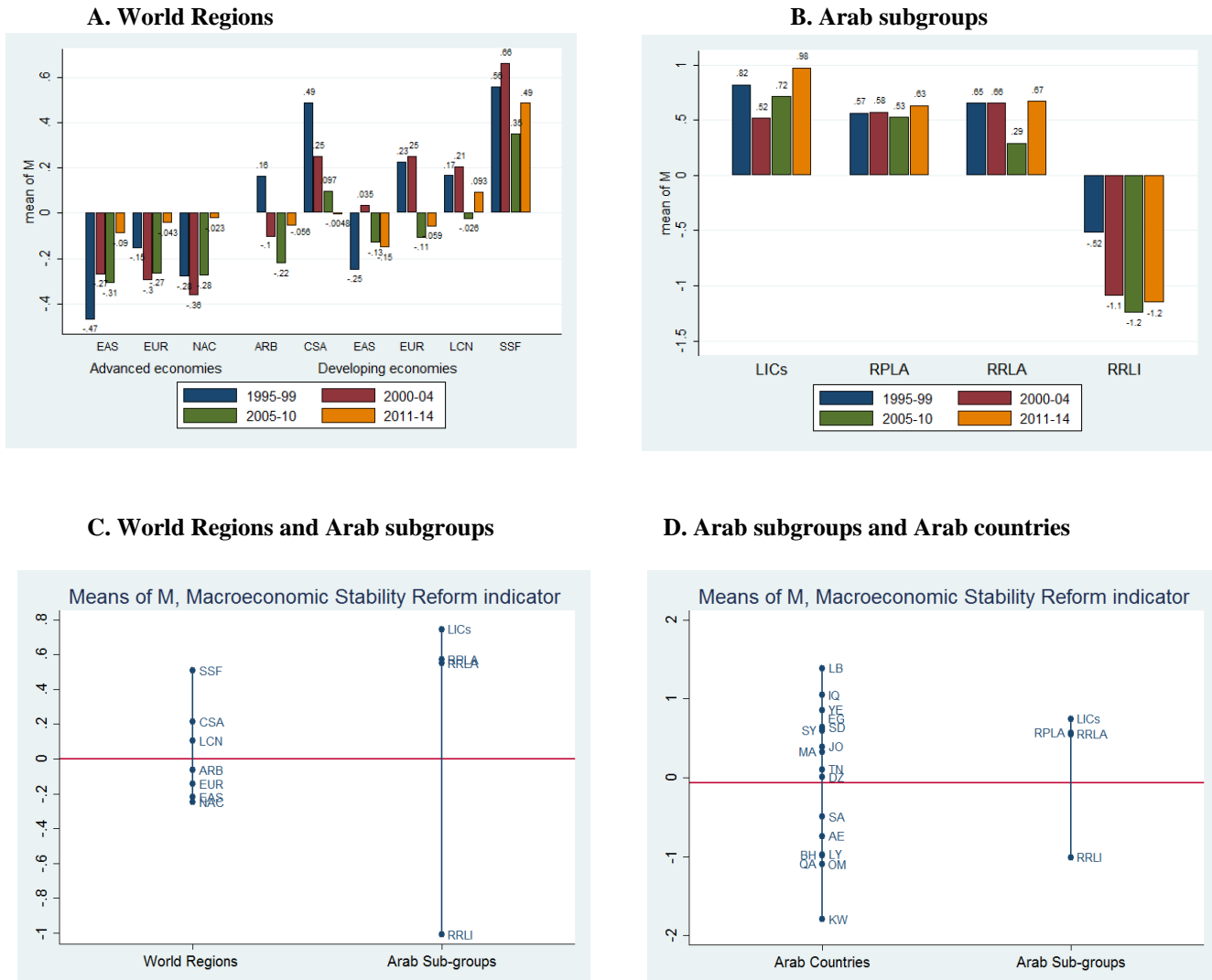
Concerning the Arab region, despite the progressive improvements in RRLI countries during the period 2000 - 2010, macroeconomic stability collapsed in 2011 following the civil wars and the region's political instability (Fig.5.5B). As Figure 5.5C shows, LICs, RPLA and RRLA subgroups of ACs, have not achieved their macroeconomic reform targets. Instead, these countries reached the highest instability levels averaging between 0.6 – 0.8, which is higher than the worst-performing region of the world, Sub-Saharan Africa with an index of 0.5.

These subgroups of the ACs countries have experienced various episodes of monetary and fiscal instability, which hindered their efforts to achieve sustained growth and integrate their economies into the world economy. On the other hand, there were significant improvements in all Gulf countries (in addition to Libya) due to huge budget surpluses; lower inflation rates; and lower rates of unemployment. Not only was the level of macroeconomic stability in this

³² The details explanation of each indicator is shown in Appendix 5.3

region significantly higher than other subgroups of the Arab region, but it was also higher than in other regions worldwide (including the more developed regions).

Figure 5.5: Macroeconomic instability Indicator³³



Source: Author's estimates based on EIU (2015)

In conclusion, and as detailed in the discussion in Appendix 5.3, it is possible to say that the failure to achieve internal economic stability was the dominant feature in the Arab countries except for some of the Gulf countries which enjoyed substantial surplus revenues from the oil sector. In these countries, exchange rate policies were not used as an effective stabilising monetary instrument; inflation rates were also linked to political stability and the feasibility of implementing effective economic reform programmes. In contrast, public finances (budget deficit and public debt) were connected to the availability of rental funds to prevent fiscal

³³ For better visualising of the macroeconomic stability index, see Appendix 5.2, Map 5.1

deficits. Finally, unemployment and the inability to create enough jobs are the most significant obstacles to development and growth in the Arab region.

5.3.2 External Stability indicators (E)

External stability is a desirable situation where an economy is operating within its means, and able to meet its commitments in its international transactions, without the burden of these overseas payments causing severe difficulties that could reduce living standards. In addition, external stability indicates the key components that keep nations economically secure in relation to the rest of the world. Instability may lead to uncertainty, discourage investment, hinder economic growth, and hurt living standards. In this study, external stability is represented by current-account balance as a percentage of GDP, total foreign debt stock as a percentage of exports of goods and services, total reserves in months of imports, and the diversification index³⁴.

With respect to the aggregate external stability indicator, higher indices imply better stability while lower indices imply otherwise. Remarkably, as shown in figures (5.6A and 5.6C) and Map 5.3 in Appendix 5.2, three main clusters can be distinguished in this regard: East Asia has experienced unusually high progress in external stability with an average of 0.90. The second cluster with mild stability lies in Central Asia, the Arab region, and Eastern Europe transition economies with an average of 0.11, which is slightly higher than the world average of -0.04. The third cluster with the highest rates of instability during the period was Sub-Saharan Africa and Latin American, with an average of -0.80 and -0.17, respectively.

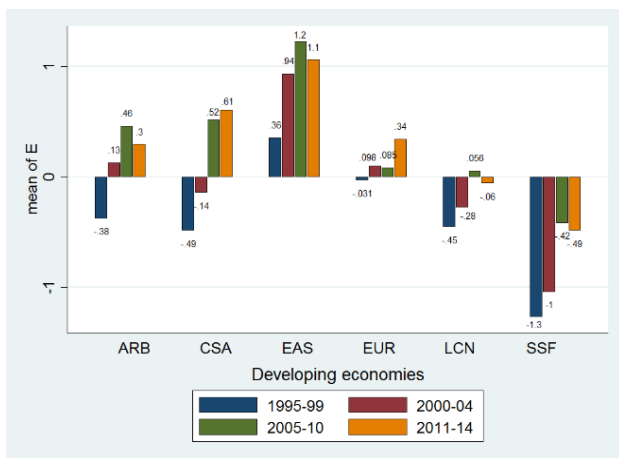
The reason for this unstable situation in SSF, LCN and Eastern Europe is that many countries in these regions adopted a development strategy that relies heavily on foreign financing which led to the building up of a high stock of unsustainable external debt over latest decades. The massive growth in external debt has given rise to a surge in concerns about the detrimental effects of debt on investment and growth, primarily the well-known "debt overhang" effect³⁵.

³⁴ More detailed discussion of the components of external stability are presented in Appendix 5.4.

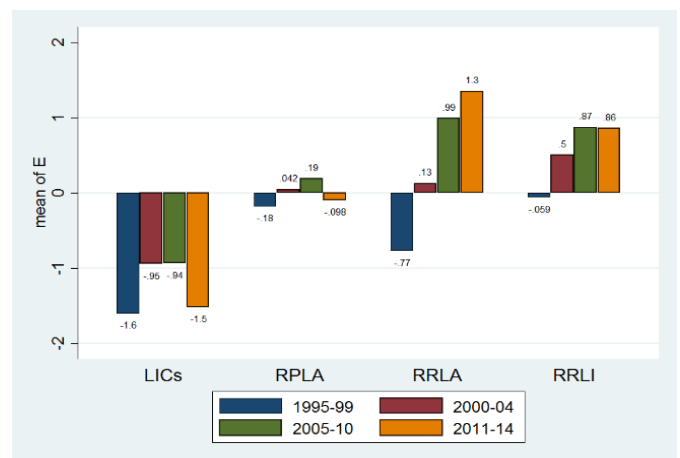
³⁵ For more information: (Effendi, 2001; Fofack, 2009; Okonkwo and Odularu, 2013)

Figure 5.6: External Stability Indicator

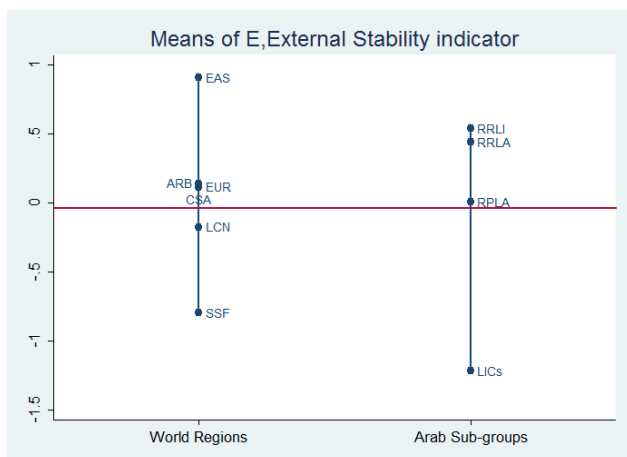
A. Region



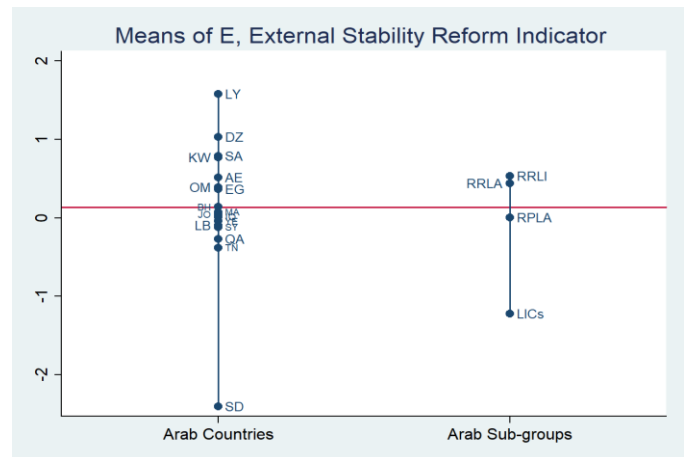
B. Arab subgroups



C. World Regions and Arab subgroups



D. Arab subgroups and Arab countries



Source: Author's estimates based on EIU (2015)

For Arab nations, as shown in figures 5.6.B and 5.6.D, all oil-exporting countries in (RRLI and RRLA), except for Iraq, have robust external stability. This could mainly be due to the oil boom between 2002 to mid-2008s, which generated a number of revenues more than double that of the preceding five years. The abundant revenues were instrumental in boosting all foreign stability components, especially the current account balance and international reserves. On the other hand, lower-income countries, along with lower-middle-income ones in RPLA and LICs, excluding Sudan, have remained at an acceptable level compared to different world regions having the same income levels, such as SSF (Figure 5.6C).

In conclusion and also following from Appendix 5.4, the determinants of the domestic economic stability are not so far from the external ones, as they were linked to two main determinants: political stability and oil revenues. The improvement in the components of external stability; whether current balance, foreign debt or international reserves, was directly

related to the oil sector funds between 2002 and 2008. The main imbalances in the period before 1999 and beyond 2011 were related to wars in the region or Arab uprisings. At the same time, the diversification of the economy's structure was also linked to the size of the oil sector as well as the degree of structural reform carried out during the previous economic reform program.

5.3.3 Business and Structural Reform (B)

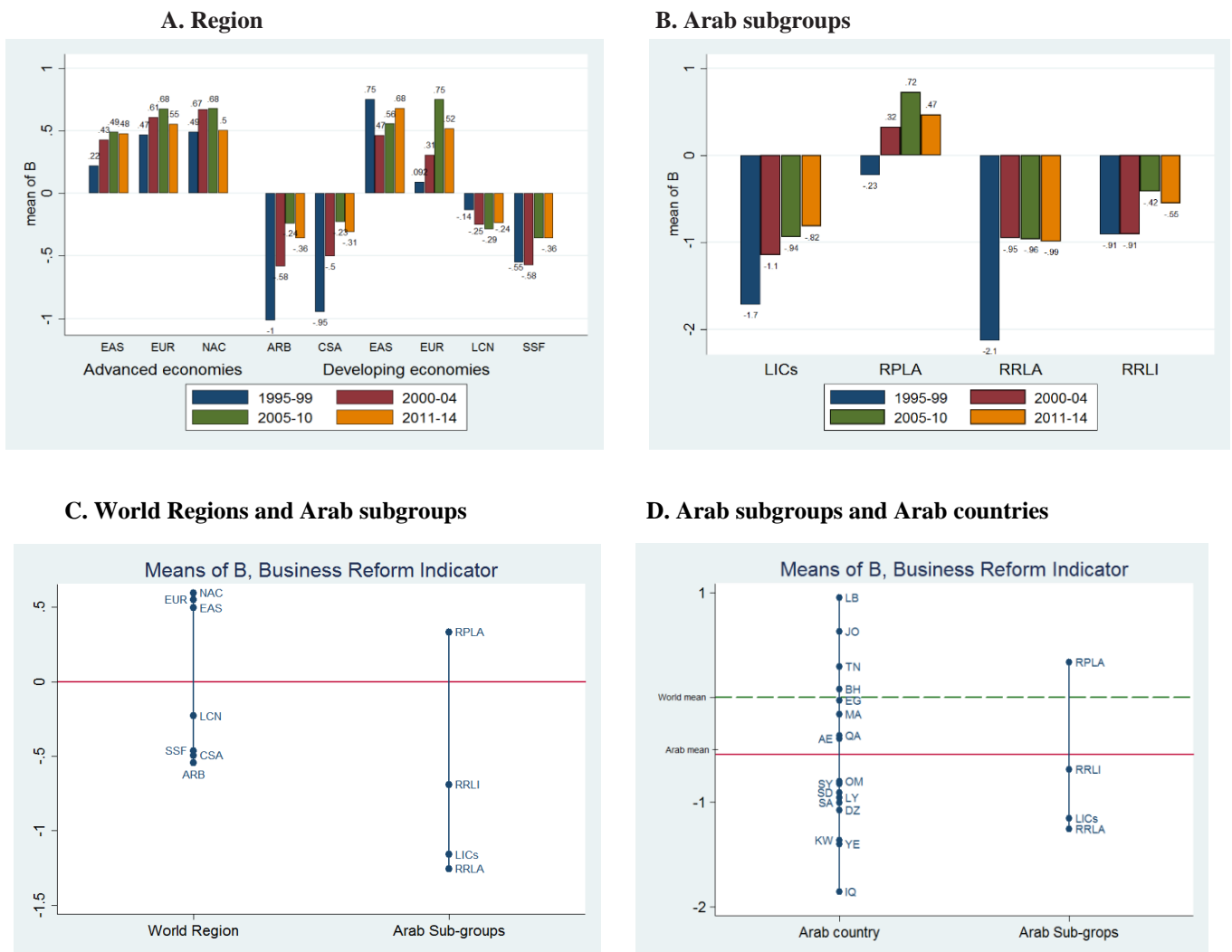
A government's main objective for structural reforms is to promote competition in the economy through maintaining appropriate regulatory frameworks, enhance the service sector, move up the value chain in manufacturing, and achieve stronger integration at the regional and international levels. It also includes policies that increase the role of market forces, the liberalisation of the market and bank system, tax reforms, trade and financial sector deregulation, privatisation and diversity of economic activities (Spilimbergo et al., 2009). Structural reform is quantified based on a varied range of indicators that take into consideration trade policies, and the quality and improvement of the business environment. Three common variables have been used to assess the contribution and effectiveness of structural policies. These factors are a foreign direct investment (FDI), domestic credit to the private sector by banks, and concentration index³⁶.

The trend of the aggregate structural reform indicator is presented in Figures 5.7 A and C, and Map 5.4 in Appendix 5.2, and they portray a broad global trend towards higher structural reform and liberalisation over the past two decades across all regions. Concerning trends in structural reform across different income groups, advanced economies started implementing reforms early, and these “first movers” have also progressed the farthest with structural reforms. This is clearly evident in the difference between the averages; while it was positive 0.5 in developed countries, it was negative 0.3 in the rest of the world (Figure 5.7C).

However, emerging markets and developing countries seem to be catching up with advanced economies in the level of liberalisation achieved, with gradual improvement and a substantial narrowing of the reform gap particularly in Southeast Asia and Eastern Europe, which have the same average (Figure 5.7C). However, despite all efforts that have been made, the four least developed regions (ARB, CSA, LCN and SSF) are still lagging far behind the global average (zero).

³⁶ The detailed discussion of the components of Business and Structural Reform are presented in Appendix 5.5.

Figure 5.7: Business and Structural Reform Indicator



Source: Author's estimates based on IMF, International Financial Statistics, Balance of Payments databases and EIU (2015)

Regarding Arab countries, as mentioned in the introduction of this chapter, macroeconomic stabilisation and structural reform programmes had been implemented in the region. While, stabilisation, as discussed above, was slightly achieved, the pace of structural reforms differed markedly throughout the region. Only Arab country reformers (RPLA) have a positive score similar to other advanced economies. RPLA executed a stable and robust reform effort without policy withdrawals toward free and organised markets. For the rest of the Arab countries, there have been no significant improvements in structural reforms (Figure 5.7B and 5.7D). Despite its intentions, the reforms have been selective, and often subject to pauses and reversals.

Overall, although there has been some progress in some countries, the ACs are still the worst in comparison to other regions (Figure 5.7A and 5.7C). This could be attributed to the Arab countries' reform agenda avoiding most institutional reform or opening up of the political

space; these key factors are both needed for any more profound changes that depend on the participation of the social groups whose well-being the reforms are intended to improve. Therefore, the reform effort in most ACs has stopped short of providing a considerably improved climate for trade and investment.

In conclusion, and also following the detailed discussion in Appendix 5.5, structural reform in the region was mainly associated with Arab reformers (RPLA), through the implementation of economic reform programmes in the 1990s and the beginning of the millennium. Although structural reform involved many financial and industrial sectors incorporating privatisation, tax reform, and banking liberalisation programmes, these programmes did not attract sufficient foreign direct investment to allow for the desired economic growth. Additionally, the enormous oil revenues have not freed the economy from the oil sector's domination of the economy's structure, which prevented the diversification of production and thus, growth was unstable and volatile.

5.3.4: Human Capital Reform indicators (H)

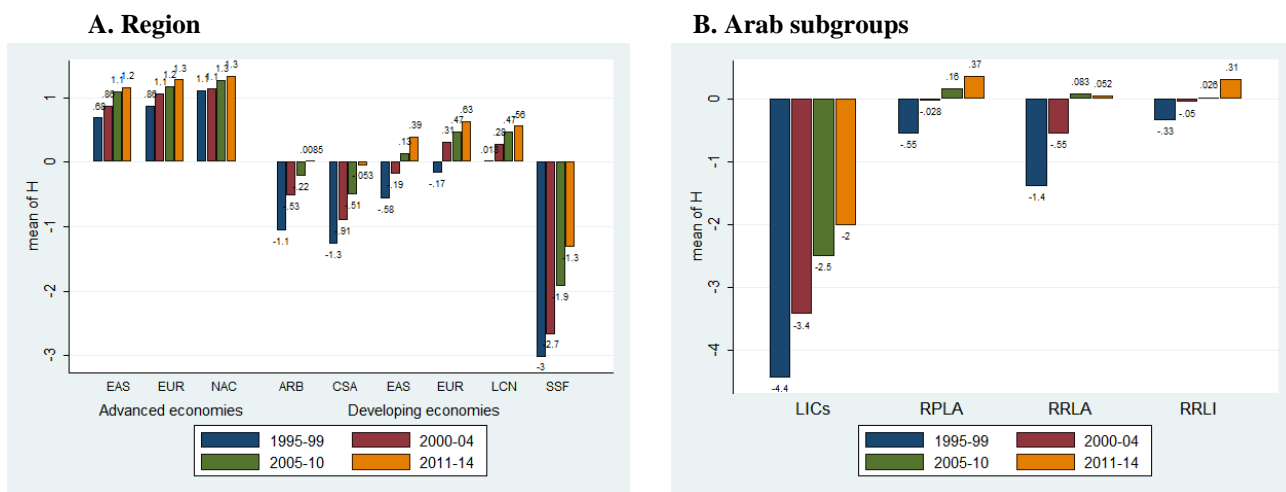
The economic productivity based on people is the value of people to an economy and defined as human capital. This has a positive influence on an individual's lifetime incomes and in promoting economic development, poverty reduction and competitiveness (Anyanwu and Erhijakpor, 2009). Therefore, human capital is seen as an instrument of national development in all countries and can be at the origin of positive externalities (Lucas, 1988). Providing education and health services to people is one of the leading channels for improving the quality of human resources. The concept of the value of human capital is that a healthy and well-educated person can work more efficiently, productively, and spend time on more fruitful activities (Baldacci et al., 2008), which leads to economic progress. Several human capital endowment strategies have proven to be more effective than others and are necessary when attempting to enhance the economic situations of developing countries. Consequently, this study represents the aggregate human capital indicator through three factors: health dimension that includes infant mortality rate, health expenditures and life expectancy; education (Primary school enrolment) and; innovation dimension (scientific articles published)³⁷.

³⁷ Detailed discussion of each of the human capital indicators are presented in Appendix 5.6

As seen in Figure 5.8A, the aggregate human capital indicator depicts that all regions could do more to nurture and improve their human capital to the fullest extent, as they have only experienced a gradual increase over the whole period. Not surprisingly, the human capital indicator as seen in Figure 5.8C and Map 5.5 in Appendix 5.2 shows a clear association between a region's income level and its human capital development - countries with higher GDP per capita have on average higher human capital scores. The industrialised regions have the highest score with almost the same average of 1.1 while developing economies, despite their visible progress, the quality of human capital is still deficient, with an average of negative 0.5³⁸. Over the same period, emerging economies in Eastern Europe and South-East Asia and Latin America regions have had a moderately positive outcome, whilst Sub-Saharan Africa, Central Asia and the Arab region have had the worst score respectively as, -2.3, -0.7 and -0.5.

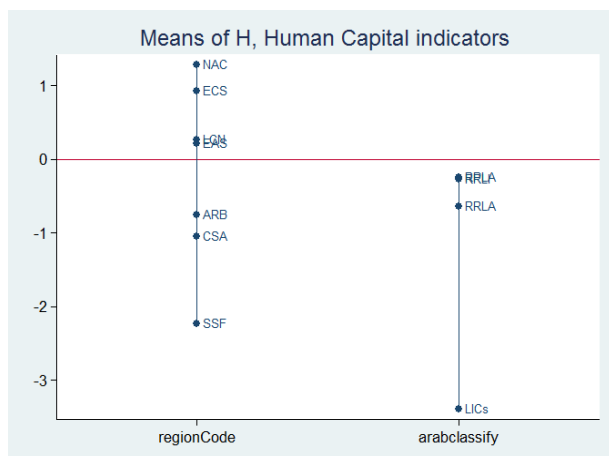
Although the human capital indicator in the Arab region improved slightly throughout the period, it can be considered as the third-worst in the world. As an exception to the rule, economic growth in the Arab region over the past decade has not coincided with equally buoyant labour and human resource development. Arab countries present a very heterogeneous picture concerning the human capital indicator. Three Arab states - Lebanon, Kuwait and Tunisia - scored above the world average and outperformed the rest of the region's Arab countries. At the other extreme, the lowest-scoring Arab countries -Yemen and Sudan, were not much better off than the country with the world's lowest score (Sierra Leone). In other words, the range of disparity among Arab countries (Figure 5.8C and 5.8D) is almost as wide as that observed in the entire world.

Figure 5.8: Human Capital Indicator

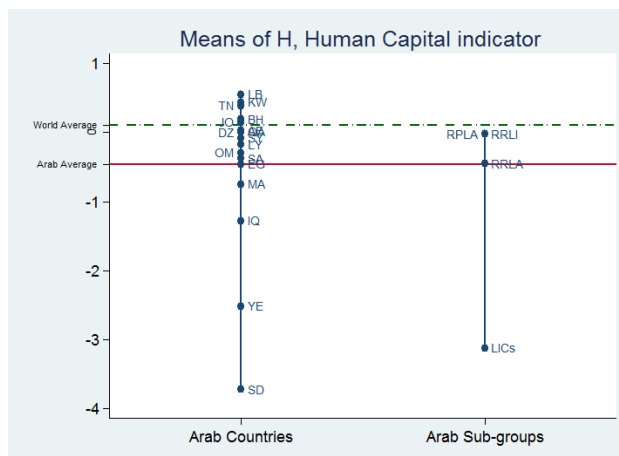


³⁸ For more details check the Appendices of chapter 5

C. World Regions and Arab subgroups



D. Arab subgroups and Arab countries



Source: Author's estimates based on Health indicators (WHO,2015), Education indicators (UNESCO,2015) & National Science Foundation (2015).

Moreover, Figure 5.8B highlights that economic factors alone are an inadequate measure of a country's ability to successfully develop its human capital in the Arab region. For instance, oil-exporting countries in RRLA and RRLI; with GDP per capita nearly eightfold that of RPLA which perform a comparable level in terms of human capital. Given the relative high-income levels in ACs, they have a very high potential to boost their human capital performance further.

5.3.5 Physical Infrastructure Indicators (P)

Physical infrastructure refers to the basic physical structures required for an economy to function and survive, such as electricity generation, transportation, telecommunication, and water and sanitation. The economic development in developing countries is impacted upon by the development of infrastructure. For instance, improved water resources and sanitation affects health status and thus impacts the factors of production by increasing the productivity of labour. According to the Stockholm International Water Institute (SIWI, 2005), the benefits of investing in water and sanitation exceed expenses, and estimates show a 3.7% growth in GDP for low-income countries after improving their infrastructure facilities. The complementarities between physical infrastructure and human capital lead to higher productivity and increase the incentive to invest³⁹. Furthermore, the development and spread of information and communication technology (ICT) is the key to economic growth and

³⁹ See (Aschauer, 1989; Barro and Sala-i-Martin, 1995; Globerman and Shapiro, 2002)

development. ICT development positively affects productivity and growth, which will then lead to higher employment and attract more investment, domestic and foreign.

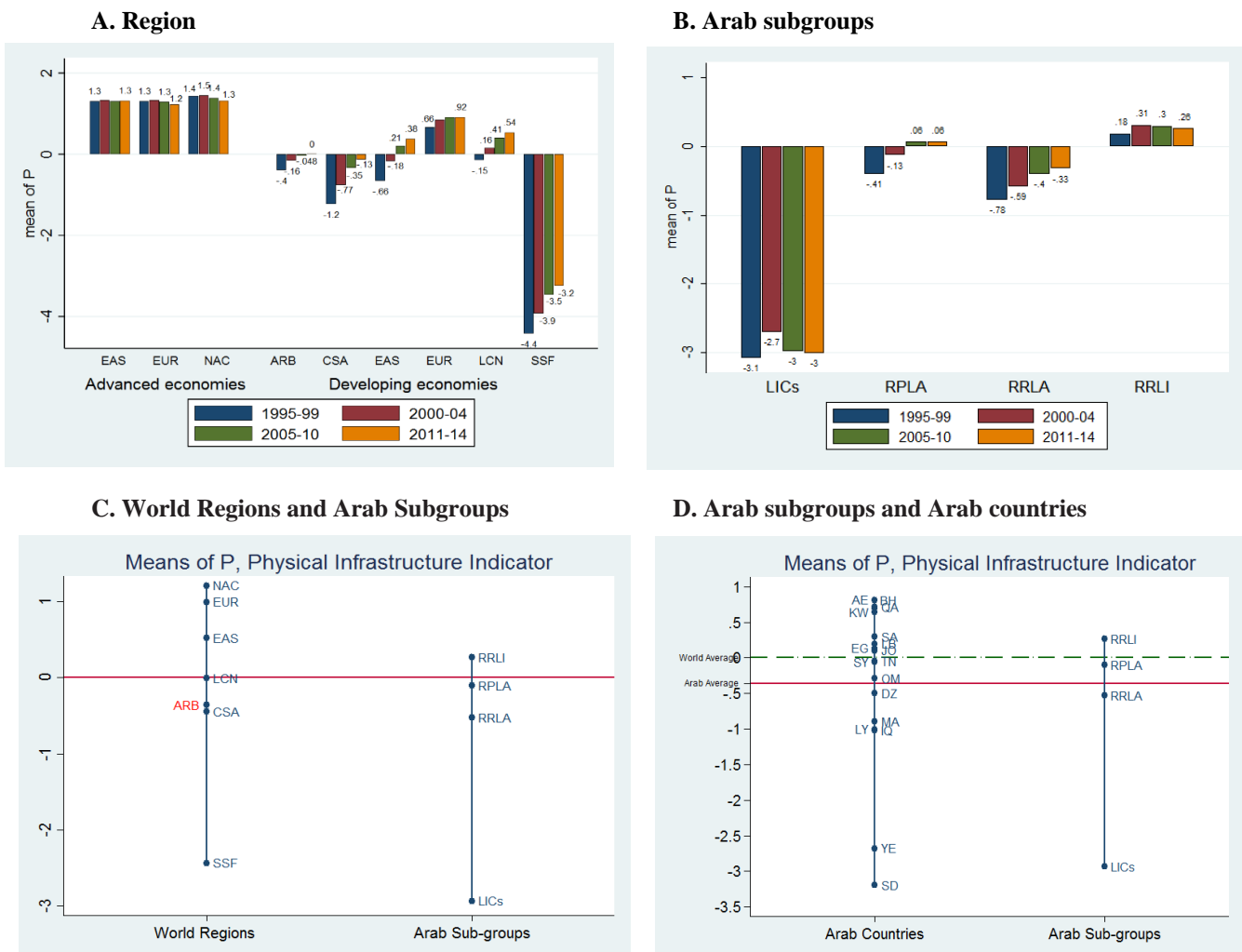
Appropriate; and at the least satisfactory, infrastructure provision is a key component in the “behind the border” agenda required for trade liberalisation to achieve its proposed objective of efficient resource reallocation and export growth. Access to infrastructure services plays a crucial role in helping reduce income inequality. However, lately in many countries, the burdens of fiscal consolidation have led to a compression of public infrastructure expenditure, which has not been offset by the increase in private sector participation, so therefore resulting in a lack of provision of infrastructure services with potentially major adverse effects on growth and development (Calderón and Servén, 2004).

The composite indicator of physical infrastructure is based on two main areas: the basic infrastructure facilities measured by the improved water source, access to electricity, and improved sanitation facilities; and the second dimension is information and communication technology measured by fixed telephone subscriptions⁴⁰.

As seen in Figure 5.9A, the aggregate physical infrastructure indicator shows that all developing regions gradually improved their infrastructure over the whole period. However, in developing countries, investments have been insufficient for sustaining adequate public provisions such as health, electricity, water and sanitation services. Similar to the human capital indicator, the infrastructure indicator represents a relationship between a region’s income level and its stock of infrastructure (see Map 5.6 in Appendix 5.2). The advanced economies have the greatest score with the same stable average of 1.3 over the whole study period, as most of them reached a peak of covering the services. On the other hand, developing countries, despite their marginal progress, the availability of necessary infrastructure facilities is still very feeble, with an average of -0.6.

⁴⁰ The details specification for each indicator are presented in Appendix 5.7

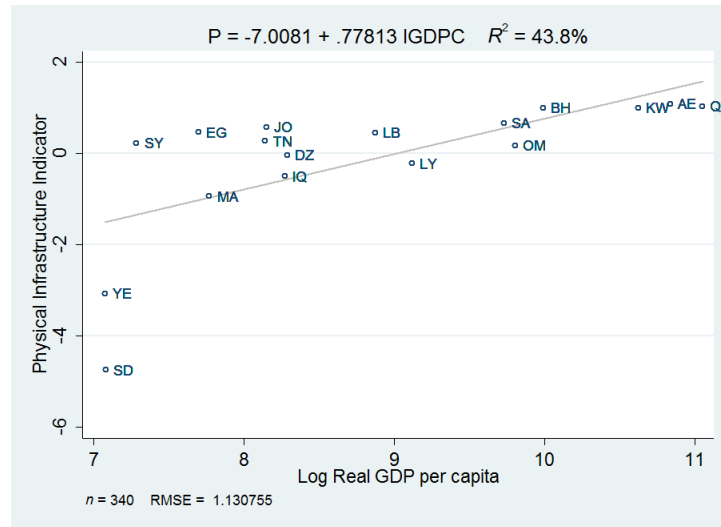
Figure 5.9: Physical Infrastructure Indicator



Source: Author's estimates based on the International Telecommunication Union, WHO/UNICEF Joint Monitoring Programme (JMP)

Regarding the Arab world, there was a slight improvement in the accessibility of infrastructure services. The region is the third-worst after SSF and Central Asia regions. Only GCC countries were located above the world average and outperformed the rest of the region's ACs. Even other oil exporters' states, particularly Libya, Iraq and Algeria have a low score. This unsatisfactory situation has extended to other sub Arab groups in RPLA and definitely to LICs with the lowest score in the world. Indeed, closing the gap with more advanced developing countries constitutes a significant challenge for ACs.

Figure 5.9E: The relation between Physical Infrastructure Indicator and the GDP per capita from 1995 to 2014



Source: Author's estimates based on the International Telecommunication Union, WHO/UNICEF Joint Monitoring Programme (JMP), EIU (2015).

In addition, there is a strong positive correlation between the infrastructure indicator and GDP, as shown in Figure 5.9E. More expenditure on infrastructure implies high output and vice versa. This outcome is consistent with Figure 5.9D, where Qatar, UAE and Kuwait are ranked as countries with the best infrastructure in the Arab region, while Sudan and Yemen are the worst; as they are considered an outlier of the Arab average.

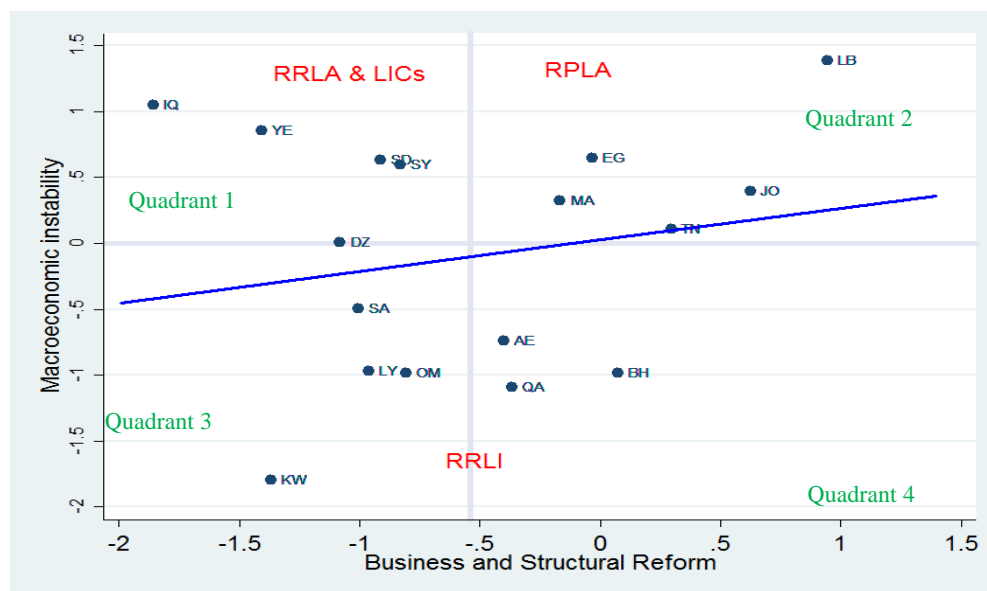
5.4 Winners and Losers of Reforms in the Arab Region

As shown in the scatter diagram in Figure 5.10, ACs have been divided into three clusters based on the average level of structural reform and macroeconomic stability between 1995 and 2014. It is not surprising that these categories are the same classification that used form the beginning in the study.

The first group of seven countries are highly economically balanced, and stable appearing in quadrants 3 and 4, all of these countries are oil exporters. Only three of them Bahrain, the UAE and Qatar has succeeded in attributing this stability to successful structural reforms. Although these reforms remain limited, the improvements are a result of the effort made to increase the role of market forces, the liberalisation of the market and the banking system. Overall, structural reforms for this group (RRLI) have generally been insufficient and proved to be much more difficult than macroeconomic stability. For instance, Saudi Arabia and Kuwait have

made slight progress in the area of privatisation and liberalisation of trade regimes. In contrast, reforms yielded fairly quick results in regard to inflationary pressures, stabilisation of the exchange rate, and budget and balance of payments deficits.

Figure 5.10: Relationship between structural reform and macroeconomic stability in Arab Countries from 1995 to 2014



Source: Author's estimates based on EIU (2015).

The second group in Figure 5.10 are concentrated in quadrant 2 and are mainly the group of Arab reformers or RPLA. These countries have adopted the recommendations of international institutions for economic reforms. However, after more than 20 years of implementation of these policies, there has been insufficient progress in economic stability. Despite the success of some of these attempts, especially in Lebanon (LB), which has a higher average of structural reform indicator than Western countries, political volatility has contributed significantly to increasing macroeconomic instability making it worse among the ACs.

The implications from Figure 5.10 is that, generally, the implemented reform programmes were inappropriate, weak and failed to achieve its aim of enhancing economic performance. This case was highlighted by Ahrend (2007); Mussa (1987); Spilimbergo et al. (2009); Williamson (1994), who have proved that structural reforms are not effective if the economy is not stable. This was observed during the 1980s and the 1990s in various Eastern European and Latin American countries. In these countries, the introduction of structural reforms, such as trade and financial liberalisation, in an unstable macroeconomic environment resulted in an economic crisis. Additionally, in RPLA countries, the adjustment of the real economy, which is lagging

considerably behind that of the market capacity could imperil the whole process of reform. For instance, the process of privatisation was hampered by lack of expertise on the techniques of asset evaluation, financial restructuring of heavily indebted public companies, and on the ability to deal efficiently and equitably with the problem of redundant labour (Abdelazim, 2002). Moreover, following an economic reform programme through fiscal and monetary contractionary policies, as recommended by the IMF and the World Bank, do not appropriately address the impact on vulnerable and low-income groups. However, RPLA implemented limited social protection programmes through increasing subsidies on essential commodities, but without poverty alleviation measures, better targeting of food subsidies, and the establishment of special funds endowed with enough resources to help the most vulnerable people.

The last group in quadrant 1, includes all Arab countries who have experienced political and military turmoil in the region, except Libya (LY) (which is in the third quadrant). The massive oil revenues and cancellation of international economic sanctions after 2005 helped Libya achieve a significant measure of economic stability. However, this progress was never associated with the structural reform, which is a major obstacle to the development of the Libyan economy; especially after the political instability and the armed conflict after the overthrow of Muammar Gaddafi's rule in February 2011. Most probably if this conflict continues for a longer period, all stabilising effects will be lost, and Libya will turn into a new Iraq, which also achieved economic stability for a long time due to rent incomes, but the Second Gulf War, economic sanctions, and the US invasion in 2003, had led to the current extreme position of Iraq where there is neither stability nor reform.

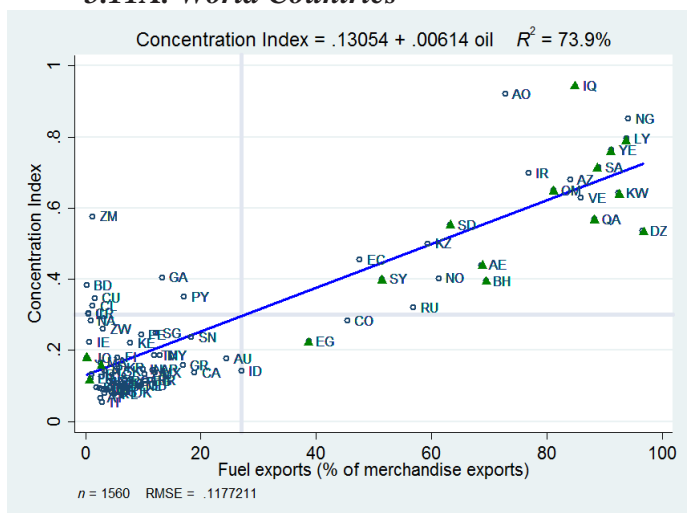
Regarding Syria (SY), it achieved improvements in structural reforms not due to the liberalisation of the economy but instead due to a high degree of export diversification. However, this advance has been halted with the country entering into violent military conflict since 2011. In contrast, Algeria (DZ), has begun to move towards increased stability and is starting to implement some of the structural reforms, although this effort has been weak so far. Concerning Sudan and Yemen, both countries have not made any progress in both indicators over the past two decades. This is due to the nature of their political systems, which has not changed for more than two decades, in addition to continued armed conflicts in different parts of the countries.

The above results are consistent with the conclusions of Mustapha Nabli ⁴¹ at the IMF economic forum as he confirms that: ‘*The Arab reform agenda has not gone very far, actually. If you compare even the most successful to what’s happening in the rest of the world, the agenda has been in general weak, often hesitant, and in some cases even reversed.*’ (IMF, 2003).

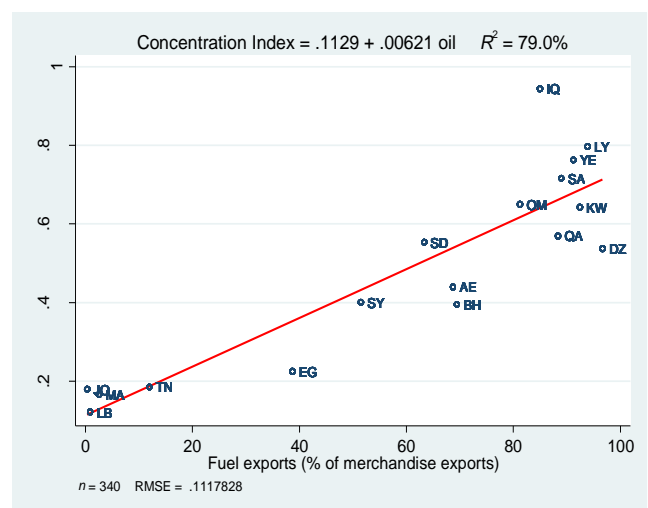
Several reasons can be attributable to the current situation in the Arab countries. First, regarding oil-exporting countries, throughout the last two decades, RRLI have experienced steady and stable economics, driven to a large degree, by high oil prices. However, oil dependency is also the main reason for preventing the shift to structural reforms and diversification of production. As seen in Figure 5.11A, a high exports concentration index has a strong positive correlation with fuel exports. ACs; where hydrocarbon sector looms very large, have outlier values compared to the rest of the world, where they are all located at the top right of the scatter diagram as the highest in the world. This reflects the direct impact of dependency on the hydrocarbon resource exports in these economies.

Figure 5.11: Relationship between concentration index and natural resource abundance on average (1995-2014)

5.11A. World Countries



5.11B. Arab Countries



Source: Author’s estimates based on Worldwide Governance Indicators (WGI), 2015 and UNCTAD’s, (2015).

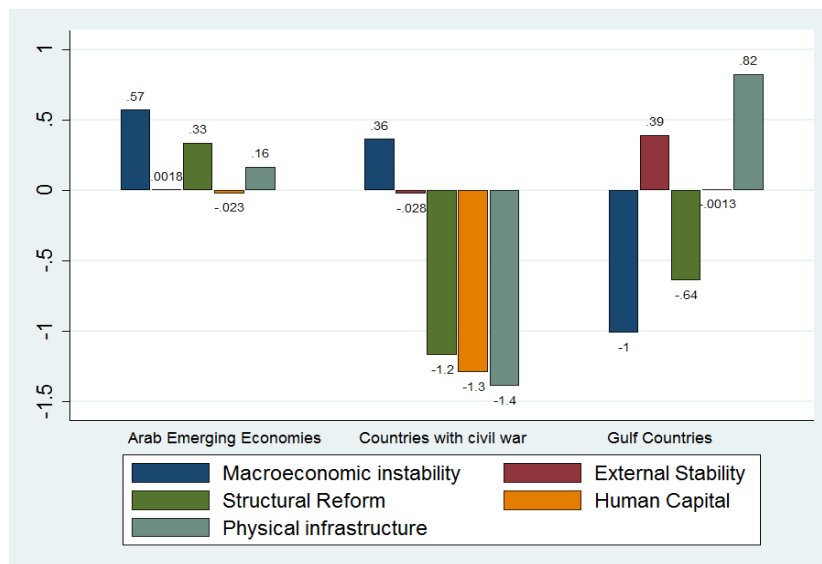
Figure 5.11B which focuses mainly on Arab countries shows that oil exports represent more than 80% of their merchandise exports, except for the UAE and Bahrain, which were located in the quadrant 3 and 4 in Figure 5.10. However, countries with the smallest natural resources

⁴¹ Chief economist and former director of Middle East and North Africa at the World Bank.

(RPLA), which have limited oil exports are the most advanced in the structural reforms and fall in the quadrant 2 in the same Figure 5.10. The rest of Arab oil economies (in the quadrant 1) have relatively high fuel exports and a high concentration index, but because of civil wars and military unrest, they have not been able to achieve the same stability of the Gulf countries in particular or the structural reform made by the Arab reformers.

The second important reason for the disappointing socioeconomic reform for some ACs, in particularly RRLA and LICs, is civil wars and armed conflicts. As Figure 5.12 demonstrates improvements in socioeconomic reform programmes are primarily linked to political stability and the absence of violence. Civil wars inflict substantial damages on the national economy. These conflicts are destructive of human capital, infrastructure and economic stability (Collier, 1999). They also introduce high uncertainty into the economic environment, making both public and private investment riskier. Thus, reducing the level and growth of the capital stock launches capital flight and dramatically worsening the government’s deficits by shifting the expenditure from output enhancing activities into the conduct of war (Ross, 2003).

Figure 5.12: The socioeconomic reform indicators among ACs highlighting violent conflict (1995-2014)



Source: Author’s estimates based on Worldwide Governance Indicators, UNCTA’s database, EIU, International Financial Statistics, Balance of Payments databases, and WDI,(2015).

The third reason, which is directly related to the difficulty of achieving economic stability, especially among the Arab reformers (RPLA), is the twin deficits hypothesis which is steeper in ACs than the rest of the world. There is a stronger positive correlation between the deficit in the general budget and the deficit in the current accounts balance in the Arab region

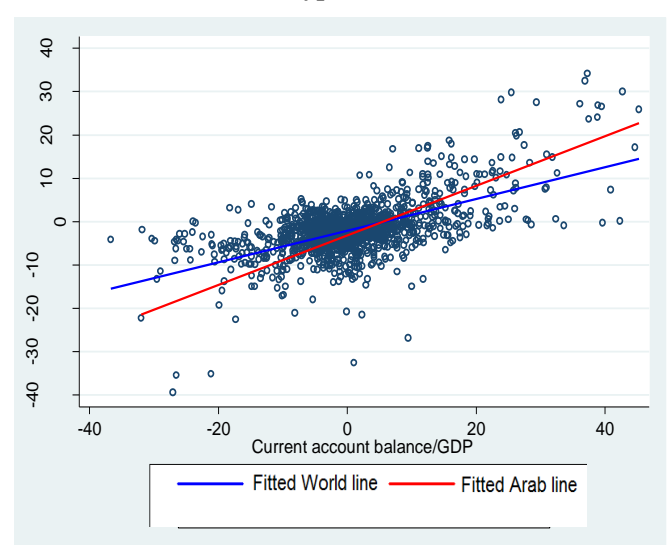
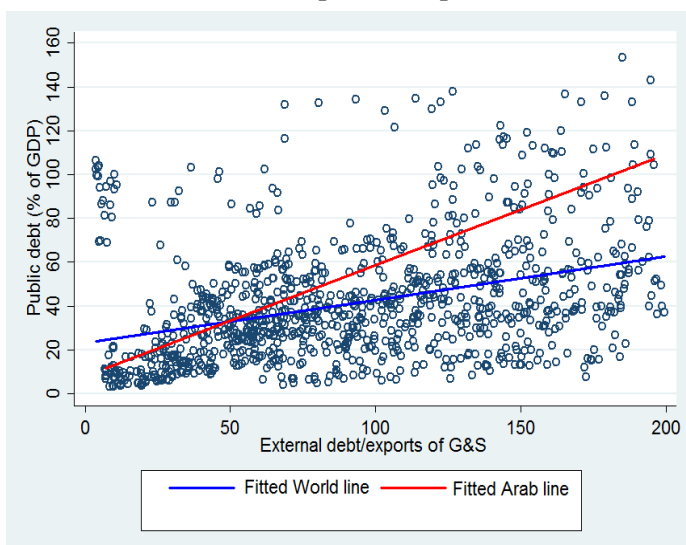
compared to the world's average (Figure 5.13B). The positive relationship between public and external debt, as in Figure 5.13A also confirms this hypothesis. The problem is compounded in those countries having dual external and internal deficits, and the increases correspond with each other. This situation is consistent with the argument of the Keynesian approach, where budget deficits lead to current account deficits, while the deterioration in the current account drives budget deficit increases (Belguith, 2016).

This happened when these countries liberalised their trade and financial restrictions during the structural reform, or the economic transformation to the market economy, which led to a direct increase in imports, subsequently leading to a significant increase in the trade deficit. At the same period, these countries attempted to attract foreign capital as a way to improve their economic growth. Thus, the budgetary position became negatively affected by large capital inflows or through debt accumulation.

Figure 5.13: The relationship between internal and external stabilisation

5.13A: The relationship between public & external debt

5.13B: The twin deficits hypothesis



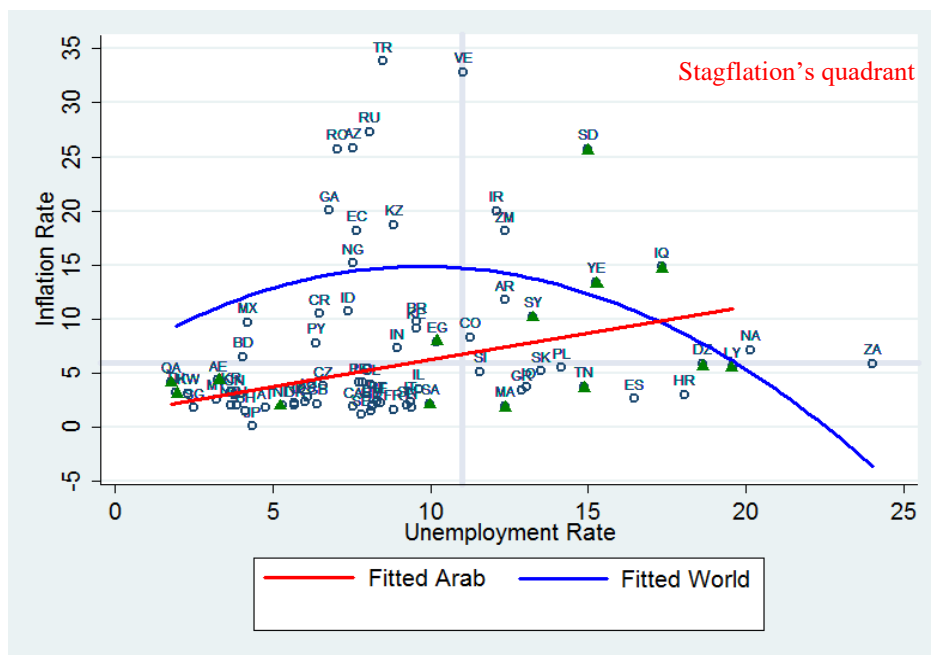
Source: Author's estimates based on EIU (2015).

The fourth reason, also related to the inability to achieve economic stability, is the complexity and difficulties of macroeconomic problems, for instance, the strong positive association between unemployment; which is the most serious economic problem that threatens the Arab economies, and inflation; which is another serious problem. As presented in Figure 5.14, this relationship in the Arab world is unlike what exists in the world generally, which normally follows the Philips curve which suggests there is a trade-off between inflation rate and unemployment (Bade and Parkin, 2007; Moosa, 1997).

The positive relation between unemployment and inflation reflected in a good way in GCC countries, as there have seen both falling unemployment and falling inflation. This is directly linked to the fixed exchange rate regime and high employment rates, which is mainly associated with high oil prices.

In contrast, stabilisation programmes in other ACs have three components: a reduction in government expenditure, devaluation, and a slowdown in money growth. Nevertheless, in some cases, prices and wages are not entirely flexible. Thus, the cut in government spending led to a decline in growth rate and accrued high unemployment. According to Gylfason and Schmid (1983) devaluation may have some adverse effects on the general prices level mainly in emerging economies or semi-industrialised countries, on the presumption that trade flows are relatively insensitive to price and exchange rate changes in these countries. Especially in oil-importing economies where price elasticities of exports and imports are sufficiently low. This combination of high unemployment and high inflation is known as stagflation, which is represented in the top right corner of Figure 5.14.

Figure 5.14: The relationship between unemployment and inflation during (1995 – 2014)



Source: Author's estimates based on EIU (2015).

Approximately, half of ACs are within or fell close to this quadrant. Stagflation in these countries is considered a significant burden, as its consequences from economic and social perspectives are seriously dangerous such as increasing the volatility and lack of confidence in markets, increase the poverty rate and inequality within the society, which directly affect the

life of the Arab citizens. Under this situation, it could be possible to understand at least the economic causes of the Arab Spring, especially for youth, where they have neither jobs nor purchasing power.

5.5 Concluding Remarks

Arab countries are today going through a dangerous time of severe and painful choices that bear far-reaching consequences. The time is hazardous because the region has entered into a dynamic of change, especially after the Arab Uprisings in 2011. The forces of change can be recognised, and their effects can already be seen in many aspects of Arab life. However, the direction remains unclear. The critical, descriptive cross-country analysis in this chapter has revealed the importance of economic reforms, human capital, and physical infrastructure for the development prospects of the Arab economies.

Firstly, regarding the state of economic growth in the Arab region over the past two decades, the region has experienced a growth deficit, with low per capita income growth. This growth performance has been weaker than that achieved by most other regions of the world, except for Sub-Saharan Africa.

The analysis has also exposed the importance of macroeconomic reforms for the development potential of the economies. However, the lack of macroeconomic reforms hinders the positive impact of structural reforms on growth. This makes macroeconomic stability a critical variable for the reform process and the growth prospects of the Arab world. Arab economies continue to revolve around resource extraction and rent-seeking activity. Thus, the Arab World shows good economic performance only in the short-term whenever oil prices increase with or without reforms.

Most ACs undertook new macroeconomic policies beginning in the 1990s. However, the reforms have been insufficient to enable the region to compete with more successful economies, such as the Asian economies. In the current context of better macroeconomic stability, structural reforms should be deepened to strengthen and increase the achievements in the field of macroeconomic reforms. Regarding the area of external balance – even though considerable efforts have been made in renegotiating foreign debts, significant scope for debt reduction still exists in the region. Stabilisation was strongly linked not only to political stability but also to

sound policies aimed to promote reform. Many Arab countries with political stability and oil abundance failed to achieve targeted reform automatically, without having national strategies that are implementing continuously and evaluating regularly.

Overall, success in economic and social reform has been disappointing. In almost all cases, reforms have been launched and executed through a top-down approach. Affected constituents have had little to do with the formulation of policy designs. Therefore, constituents have shown minimal commitment to the appropriate implementation of policies, especially when the associated economic and social costs that are painful. Arab countries seem first to initiate reform and only after considering how it may fit into a comprehensive strategy guided by a visionary framework. This is like building the rooms before designing the house.

The aggregate human capital and Physical infrastructure indicators depict that all regions could do more to nurture and improve their capacity to the fullest extent, as they have only experienced a gradual increase over the whole period. The indicators also show a clear correlation between a region's income level and its level.

Success in reducing infant mortality has been highlighted in most Arab economies, and progress in education has been almost to the same magnitude as in Asia and Latin America. However, the level of education and research in ACs has remained lower than in other developing regions. This gap represents a potential for growth, particularly in the context of economic diversification and integration with the world market (with the European Union, in particular). A more qualified labour force will be needed to accompany the structural reforms of the economies and the growth prospect of the region. Thus, R&D should be an important factor in the reform agendas of the Arab economies. Concerning infrastructure, only GCC countries were located above the world average and outperformed the rest of the ACs, even other oil exporters' particularly Libya, Iraq and Algeria have a low score. Generally, this factor should also not be neglected if the Arab region wants to increase its productivity gains and be able to compete internationally.

Finally, Arab governments have not been able to contribute significantly to finding solutions to the difficulties of development, and hence the standard of living and the facilities of life are still low for the majority of Arab citizens. Poverty persists with even the basic needs of water, food, shelter, education, and health far from satisfied.

Therefore, in order to complete a clear understanding of the development and inclusive growth in the Arab region, the following chapter describes and analyses the indicators of governance and institutions using the same comparative approach that allows determining the scope and roots of the development challenges facing the Arab countries, especially after the Arab Spring. In addition, all indicators that were assessed in this chapter will be fully utilised in the next chapter by integrating them into an econometric model to determine the effect of each variable on growth, and then identify reform priorities and stages of development that will ensure an increase in the standard of living for the people of the Arab region.

Chapter 6

Institutions and Political Aspects of Arab Reform

Chapter 6: Institutions and Political Aspects of Arab Reform

6.1 Introduction

Economic development is strongly impacted by the issue of governance from theoretical and empirical perspectives, as illustrated in Chapters 2 and 3. Governance matters have been an integral part of societies since the dawn of civilisation, and especially so concerning what values, ethics, and rules of conduct and justice should be upheld; how societies should be organised; and who should hold power and authority.

According to Schlumberger (2004), economic reform programmes are required and essential for all Arab countries, but they should be accompanied by political reforms. Although economic underdevelopment was one of the root causes of the Arab uprisings in 2011, as discussed in the previous chapter, state corruption and mismanagement, were the underpinnings of this underdevelopment. For instance, when Arab states have attempted to engage in liberalisation and privatisation of their economies through structural reform programmes, this liberalisation process did not lead to sustainable development or even stable economic growth that could serve as the new beginning of the regimes' legitimacy. Moreover, poorly designed and inadequately implemented market reforms led to increasing the incidence of corruption and socioeconomic inequality, including creating a new class of super-wealthy entrepreneurs, many of them affiliated with government leaders' families. These political elites usually tended to prioritise personal interest above the common good; accumulating financial wealth through monopolistic structures, which has become a major barrier to hinder or distort reforms.

This chapter contributes to the existing literature in three ways. First, it evaluates the governance systems in Arab states; not only from a general view as most of the previous studies but also from each aspect of institutions as defined in Chapter 2. Secondly, a comparative assessment is conducted between the Arab region and other developed and developing regions, and within the region itself by highlighting the similarities and differences among the ACs which could explain nature of the structural reforms, socioeconomic and other outcomes as discussed in chapter 5. Thirdly, an examination of particular relationships concerning Arab governance, which has raised interesting issues in recent research.

The remainder of this chapter is organised as follows. Section 6.2 examines the relationship between the composite governance indicator and key development indicators (as discussed in

chapter 5). The next three sections focus on key functions of good governance in the Arab region from three dimensions; first is democracy, which is the input of the governance system as it relates to ‘voice and accountability’ and ‘political stability’; Second, the next dimension of governance as it pertains to administrative capacity and government’s ability to decide on and implement public policies (governance process) and covers two indicators of ‘government effectiveness’ and ‘regulatory quality’; Third, the output of the governance system which concerns "the state of law" as it pertains to the ‘rule of law’ and ‘control of corruption’⁴². The last two sections are respectively, reflections on key peculiarities relating to the Arab region and a summary of the chapter.

6.2 Governance/ Institutions Indicator

Governance, as classified suggested by McCawley (2005), can be examined from the macro and micro levels. The macro-level includes the constitution, the overall rule of the government itself (size and resources) and the relation between the legislature, the judiciary and the military, while the micro-scale of governance relates to administrative processes and regulation among the government, business sector, social institutions and civil society. In terms of economics, the political process might be seen as an “industry”. Political rulers as entrepreneurs take risks and lead their parties (firms) in the national political industry. The political process will maintain fair and efficient balances of power among the administration, the legislature, and the judiciary. Domestic political industries must be profitable and productive to realise outcomes. Political markets could benefit from competitive arrangements, selection of the chief executives of the organisations, and regulatory controls (Roy, 2006).

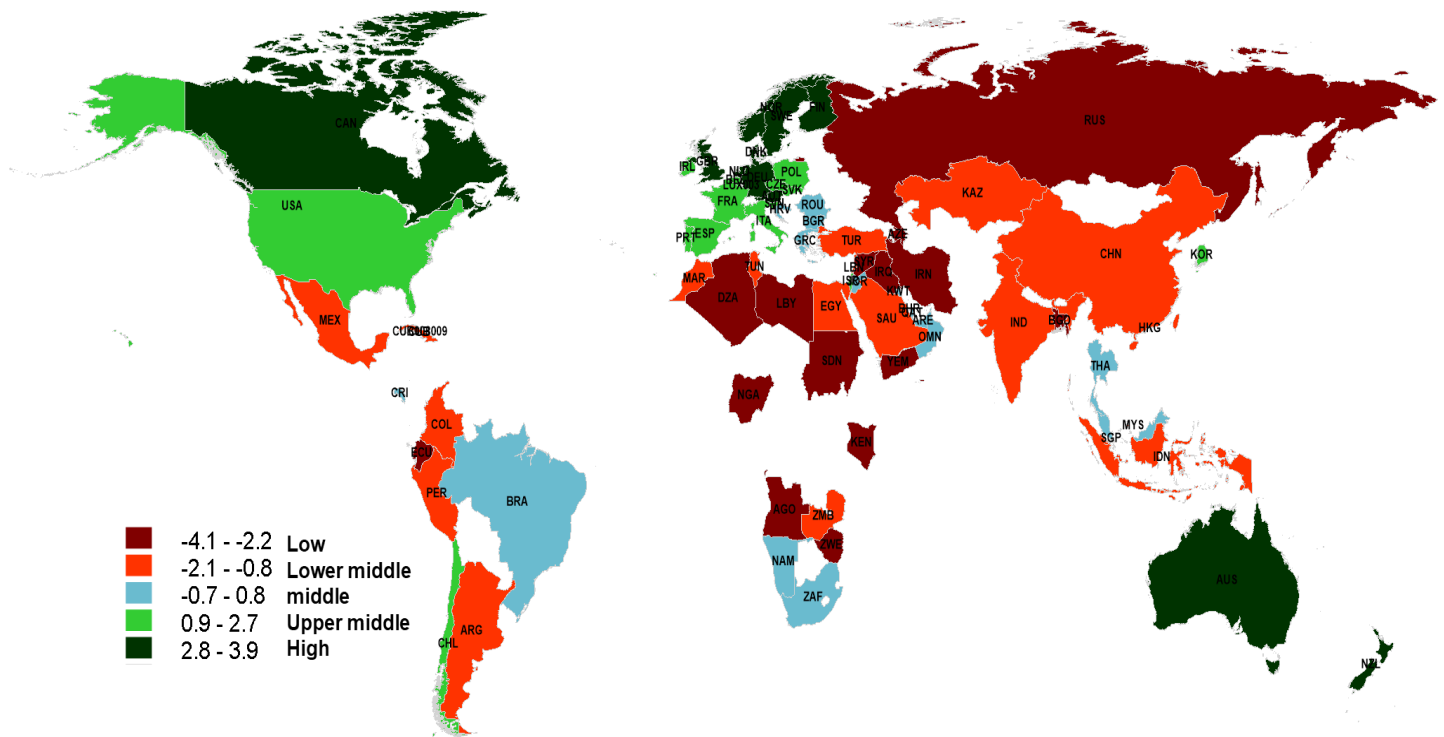
However, the reality of this industry shows deep and persistent disparities based on prosperity and governance among countries worldwide. For instance, regarding the composite governance indicator⁴³, as presented in Map 6.1, the green and dark green areas on the map represent advanced economies and some recent transition economies in Eastern Europe, which have a profoundly positive score. At the other end of the spectrum is the red colour areas on the map covering the part of the world where the quality of governance is inferior. The differences in the indicator between countries are about three times on the average, and as high as eight times,

⁴² The descriptive statistics of the data are presented in Appendix 6.1.

⁴³ For further information about the indicator, see chapter 4

for example, between Finland and Sudan. In fact, in the data used, Scandinavian countries in addition to New Zealand and Canada have the highest governance ranking worldwide, while Sudan, Iraq, Angola and Zimbabwe have the worst quality of governance (Figure 6.1 A). In terms of regional comparison, North America ranked top over the study period, followed by Southeast Asia, and Western Europe. In contrast, Central Asia had the lowest score among developing regions with an average of -2, then Sub-Sahara Africa and Arab region with close to an average of -1.5 (Figure 6.1A and Map 6.1).

Map 6.1: Governance indicator (Average 1995- 2014)

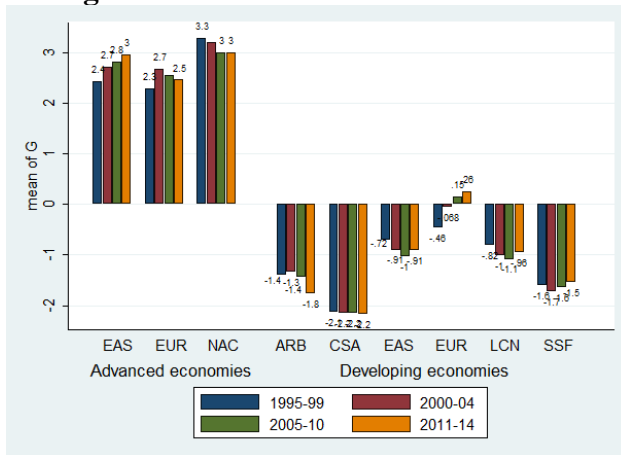


Source: Author’s estimates based on World Bank’s Worldwide Governance Indicators (WGI)

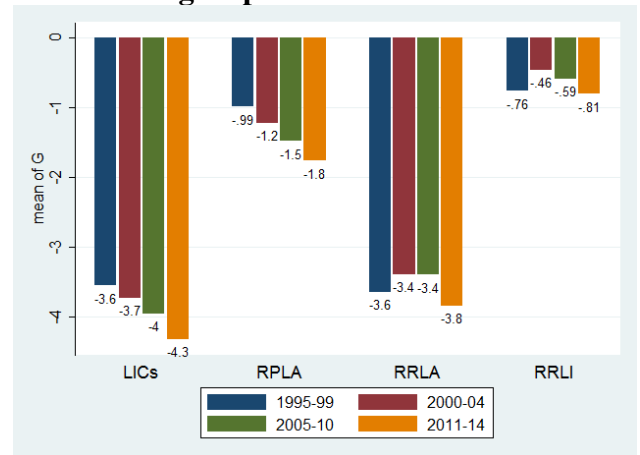
Nowadays, improving the quality of governance to promote economic development and raise per capita incomes is a major challenge for approximately 6 billion of the world’s 7 billion population, living in low and middle-income countries. The quality of governance for this large chunk of the world’s population matters significantly regarding facilitating long-term sustained growth and improving their well-being.

Figure 6.1: Governance indicator

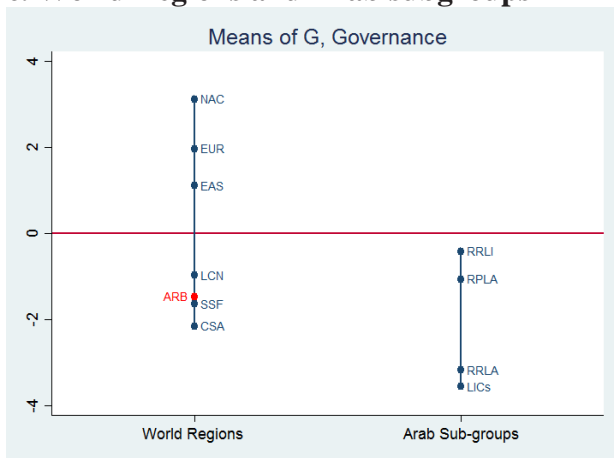
A. Region



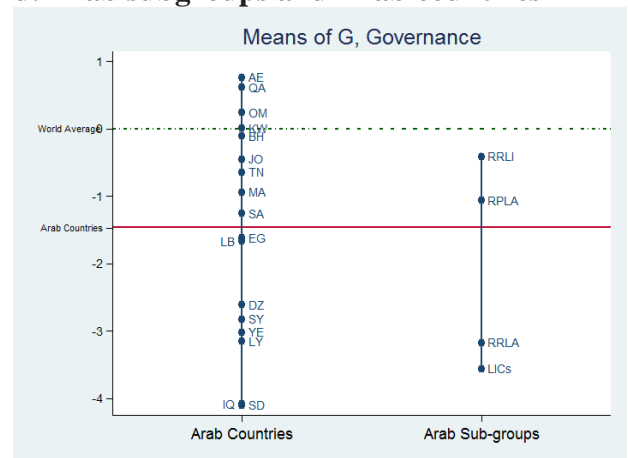
B. Arab subgroups



c. World Regions and Arab subgroups



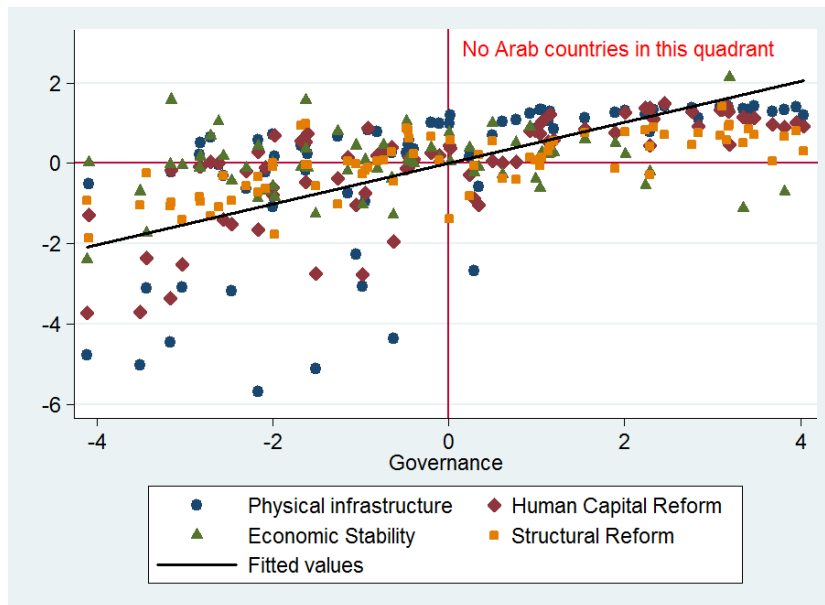
d. Arab subgroups and Arab countries



Source: Author's estimates based on World Bank's Worldwide Governance Indicators (WGI)

Map 6.1 and Figure 6.1A and 6.1C confirm that differences in governance play an indispensable role in explaining why most developing countries fail to grow faster than the developed countries in addition to low levels of other development indicators. Figure 6.2 represents the relationship between governance scores and other aggregate developmental indicators discussed in the previous chapter. It confirms that all countries that have economic instability, poor education and health systems and insufficient essential infrastructure, generally have weak governance. This is strongly supported by the quadrant on the right and below the zero line of Figure 6.2, which shows that very few countries with slightly good governance also have somehow inadequate levels of the development indicators.

Figure 6.2: The relationship between governance scores and other aggregate developmental indicators (1995-2014)



Source: Author's estimates based on World Bank's Worldwide Governance Indicators (WGI), World Development Indicators (WDI), and EIU

The above statistics (especially Map 6.1) is very consistent with the thoughts of the New Institutional Economics School (NIE), and the legacy of Douglass North, who categorised the world's countries into two groups: 85% of the world's population under the "extractive institutions" or "natural state" in which a small group of individuals (the elite) exclude the majority of the population from participation in political or economic matters. The remaining representing about 15% of the global population, are characterised by "inclusive institutions" or "open access society" which allow and promote participation by the great mass of people in economic activities that make the best use of their capabilities and talents. North (1990) also observed that "Third World countries are poor because the institutional constraints define a set of payoffs to political/economic activity that does not encourage productive activity."

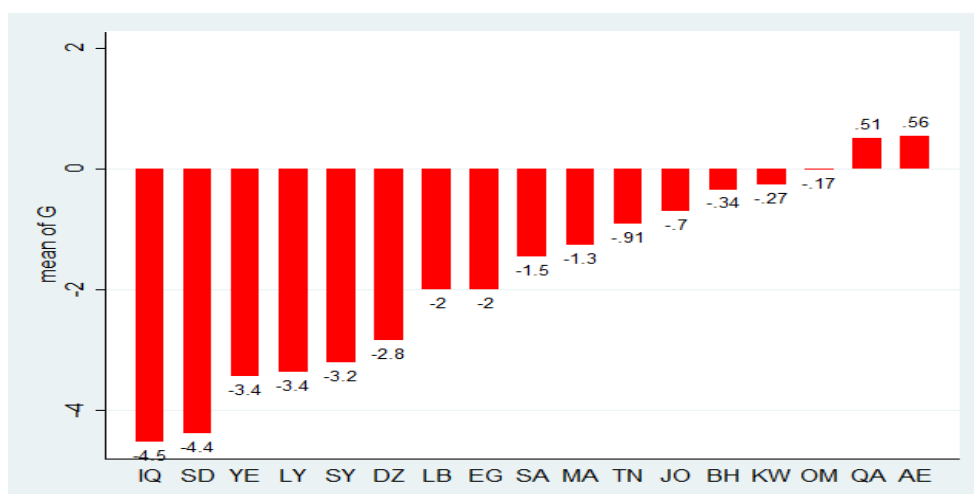
In reality, although developing countries vary in their economic policies and institutions, their extractive institutions are broadly similar (Oliva and Rivera-Batiz, 2002). In particular, their constitutions, legal systems, levels of government corruption, insecure property rights, the prevalence of government intervention in markets, the proportion of industry that is state-owned and all other factors that are characterised by political repression and economic and social disparity which are considered the most common features of failed states.

Regarding governance and institutions condition in the Arab World, by the standards of virtually any metric measuring governance quality, the ACs routinely rank well below the global average or rank the lowest place as in the case of democracy. The World Bank’s Worldwide Governance (WGI) provide the starkest evidence of the mismanagement and misrule by many of the region’s governments, which use strict repression to control their societies.

Four significant observations emerge from Map 6.1, Figure 6.1A, 6.1B, 6.1C and 6.1D concerning the governance status in the Arab region:

- 1) The whole region ranks the third worst with an average of -1.5. This average is close to the worst-performing regions; Central Asia and SSF, with averages of -1.9 and -1.6 respectively.
- 2) The whole Arab region, subregion groups and individual ACs (except UAE, Qatar and Oman as in Figure 6.3), fell far below the global average on the indicator.
- 3) The region and its subgroups are the only places which have had continuous deterioration in governance scores over the study period. For example, the regional average was -1.2 in 1995, then gradually decreased to -1.4, -1.6 and -1.8 in 2000, 2005 and 2014, respectively.
- 4) Within the Arab region, the subgroups of RRLA and LICs have had the worse governance score in the region and any other region in the world. Furthermore, the Arab region includes six of the bottoms ten countries in the world with the worst governance scores (Sudan, Iraq, Libya, Yemen, Syria and Algeria).

Figure 6.3: The Governance Indicator for ACs (Average 1995 – 2014)



Source: Author’s estimates based on World Bank’s Worldwide Governance Indicators (WGI)

The explanations for the failure of the Arab regimes to provide their people with the kind of sound governance that can deliver prosperity is undoubtedly a quite complex and nested issue. However, the most significant reasons tend to be associated or rooted in the political legacy of dictatorship.

The current dictatorships in the Arab world were affected by the revolutionary movements which emerged after independence in the 1950s and 1960s as a result of either military coups or anti-colonial resistance, which tried to apply - at least at their earlier stages - some socialist ideology (Dabrowski, 2012). They attempted to follow the Soviet experience of central planning; in particular the import-substitution industrialisation strategies, price controls and large-scale subsidies, trade protectionism, and rapid growth of the role of public ownership because of outright nationalisation policies (Hochman, 2009). These policies were supported politically, military and economically by the Soviet bloc. Many countries, especially those involved in regional conflicts, allocated a considerable share of their public expenses to military and security programmes.

This Arab socialism was associated politically with authoritarian regimes inspired by influential and charismatic leaders such as Gamal Abdul Nasser in Egypt⁴⁴, and Houari Boumedienne in Algeria⁴⁵. In the resource-rich countries of the region (RRLA and RRLI), authoritarianism has been driven by the need to control oil resources (Yousef, 2004). While in labour-abundant countries (RPLA and LICs), the interplay of state preferences, mass politics, and anti-colonial fights has led to the strong engagement of the military in political life (Vitalis and Heydemann, 2000).

Moreover, the Arab–Israeli conflict that is yet to be settled, the perceived adversarial global power interventions in the region, several civil wars and other violent internal conflicts have provided strong arguments for Arab authoritarian regimes to expand their fiscal capacities and push resources into military programmes in order to control the country's resources and to repress opposition in the name of "protecting national security" (Bellin, 2004; Rougier, 2016).

Therefore, many of these nations seem to have built their modern political authority on patronage rather than on formal institutions; their external rents, and moral legitimacy

⁴⁴ Abdel Nasser was the second President of Egypt, serving from 1954 to 1970, he led the 1952 overthrow of the monarchy.

⁴⁵ Boumédiène served as Chairman of the Revolutionary Council of Algeria from 19th June 1965 until 12th December 1976 and thereafter as the second President of Algeria for two years.

providing authorities with efficient tools to subordinate and coerce the rest of the society (The Carrot and Stick Approach) (Izquierdo Brichs, 2012).

During the 1980s and 90s with some external factors, mainly, the demise of the Soviet Union, deterioration of oil prices, and economic reforms in China, India and other developing countries, in addition to local pressures, such as poor macroeconomic instability and the desire to avoid political unrest (Dabrowski, 2012), some of the Arab autocracies endeavoured to apply minor official political reforms to promote modern citizenship concepts through mechanisms of mass mobilisation (political parties, trade unions, or civic associations). However, these efforts eventually had limited effects on pluralism and democracy as new complex mechanisms were introduced allowing political control to remain over the process of political openness through the same dictators but in a semi-liberal shape (Yousef, 2004). In other words, these reforms have been more in the spirit of “political liberalisation” and not genuine “democratisation”, through enforcing restrictions on political and civil rights to ensure they do not expand to levels that would allow the citizenry to exercise greater collective control over public policy (Brynen et al., 1995). In this process, some states have still remained full autocracies over the last 50 years, such as Iraq, Libya, Saudi Arabia, Syria, and Sudan.

Furthermore, the Arab countries sank into a trough in terms of the capacity of institutions due not only to the repression, dictatorships and absence of a ‘state of law’, but also the autocratic regimes which were associated with a high level of corruption. The ruling elites who control both the polity and key sectors of the economy exemplify an extraordinary level of corruption. They abuse formal and informal institutions to control the accumulation and distribution of resources and jobs in order to extend their power and amass illicit wealth.

For a further understanding of institutions in the Arab world, the next sections in this chapter will provide an in-depth assessment of the six aspects of governance and its impact on Arab societies.

6.3 Democracy (Governance input)

The first dimension of governance is a democracy, which can be considered the input of an institution’s system as it is the process by which governments and authorities are selected, monitored and replaced. Diamond (2005), defines democracy “...as a system of government in which the people choose their representatives, and can replace them, in regular, free and fair elections.”

Democracy also refers to the degree to which the people of a country can engage in the selection of their governments. This includes measuring different aspects of political rules, civil liberties and political rights. It introduces the concept of public accountability, which gives policymakers access to power and national resources while being held responsible for failures in executing policies (Jaunky, 2013). Democracy's key features notably include; freedom of the press, free political parties and open elections which give the government legitimacy and offer taxpayers a share in the decision-making process.

A broad understanding of democracy is grounded in two principles: firstly, popular control over public decision-making and decision-makers, and secondly political accountability among those who exercise that authority (Harrigan and El-Said, 2011). These are measured using two governance indicators; voice and accountability (VA), and political stability and absence of violence (PS). The first represents participation in free elections within a liberal system that affords equal opportunities for all, besides the independence of the media which observes those in authority and holds them accountable for their work (Kaufmann et al., 1999).

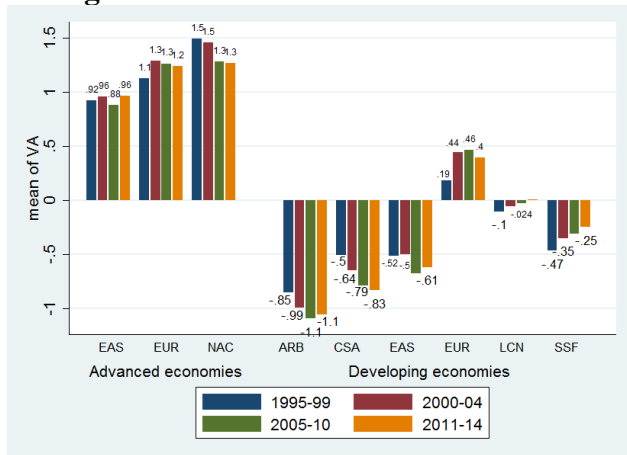
The second refers to the stabilisation of the political system. The political process and development can influence the process of overall development. Of importance to the process of development is a stable political environment. According to Morrison and Stevenson (1971, p. 348), political instability means "a condition in political systems in which the institutionalised pattern of authority breaks down, and the expected compliance to political authorities is replaced by political violence." In addition, an unstable political system can influence other components of a country's institutions. For instance, the rule of law can be affected by political instability through its impact on state institutions.

6.3.1 Voice and Accountability

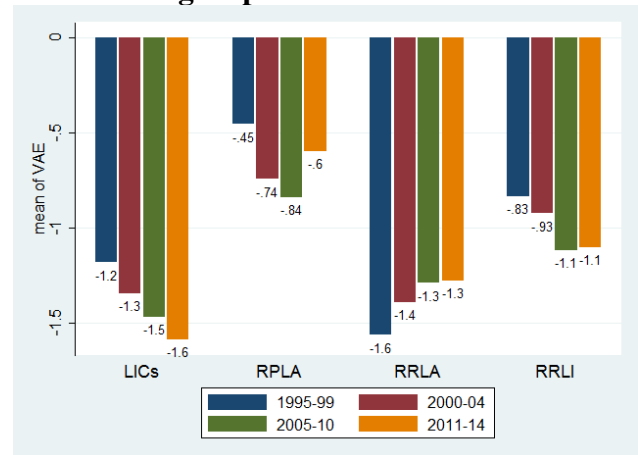
The voice and accountability (VA) scores for countries on the dataset are presented in Figure 6.3A. High scores for VA are concentrated in North America, Western and Eastern Europe, and the advanced economies in South Asia, with very low or even negative scores in most developing countries. However, in the last five years, progress in VA has either stalled or declined in all regions of the world, even in America and Europe. The world, therefore, seems to be moving towards a less liberal environment and sliding further and further into authoritarianism. Some democratic countries are at a stage of returning to dictatorial rule, while other countries that have been authoritarian are becoming even worse.

Figure 6.3: Voice and Accountability (VA) indicator

A. Region



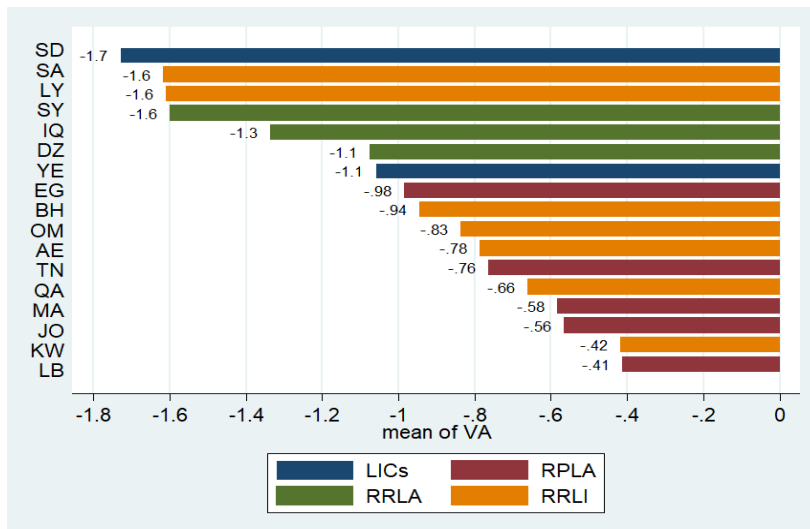
B. Arab subgroups



Source: Author’s estimates based on World Bank’s Worldwide Governance Indicators (WGI)

The voice and accountability scores in the Arab world during the study period were consistently low and deteriorating with a negative average, no exception (Figure 6.3B). The region not only ranked the lowest in the world with an average of -1 but the lowest individual country scores worldwide are also found in the region. For example, Sudan, Saudi Arabia, Libya and Syria with scores below -1.5, and are the lowest score in the world (Figure 6.4).

Figure 6.4: Voice and Accountability by Arab countries (1995-2014)



Source: Author’s estimates based on World Bank’s Worldwide Governance Indicators (WGI)

Once again, the explanation of VA in the Arab region is closely related to the historical “democracy deficit” of the Middle East, which has kept many dictators in place for many decades. According to Bellin (2012); Hinnebusch (2006) the ACs have the highest rate of political grievances, especially those arising from “democracy shortfall” of longstanding dictatorial rule, widespread governmental corruption, restricted opportunities for participation

in public and political life, a deteriorating justice system, and an oppressive security apparatus well-known for torture, arbitrary arrest, and other human rights violations. Costello et al. (2015) manifested that the Arab countries form the world's largest set of autocratic regimes and have a long history of poor governmental performance and human rights breaches.

The other explanations for lack of voice, participation and accountability, are related to the people themselves. The political systems seem to be suffering from limited checks and balances in the absence of strong parliaments and a genuinely independent judiciary, as well as prevalent corruption and policy implementation uncertainty. Thus, these shortcomings appear to be fuelling popular passions of mistrust in the political system as a whole with strong feelings that their voices do not have any value to change any issue. The impact of the lack of accountability translates into poorly informed economic decisions, irrational policy preferences, and ultimately, miserable socio-economic competitiveness as presented before Figure 6.2.

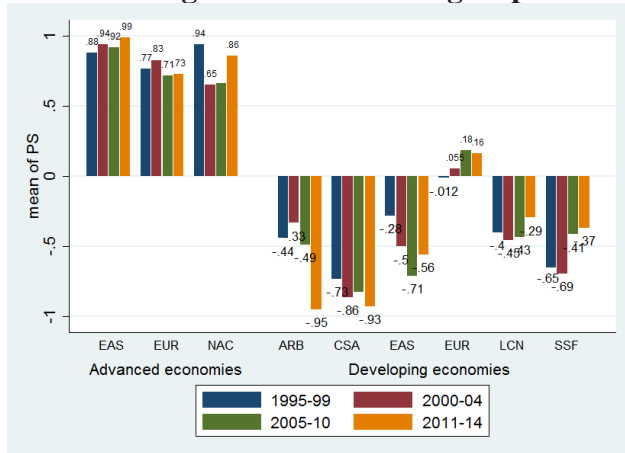
Evidence by Kaufmann et al. (2005) points out that countries with a strong voice and accountability structures tend to have more powerful economic institutions and are more competitive. For instance, although in Tunisia, a large amount of resources was devoted to encouraging innovation and research with numerous subsidy programmes and tax breaks, these funds did not yield any significant results. This may be due to Tunisia's governance regime, undermining its strategy and efforts to develop a knowledge-based economy.

6.3.2. Political Stability

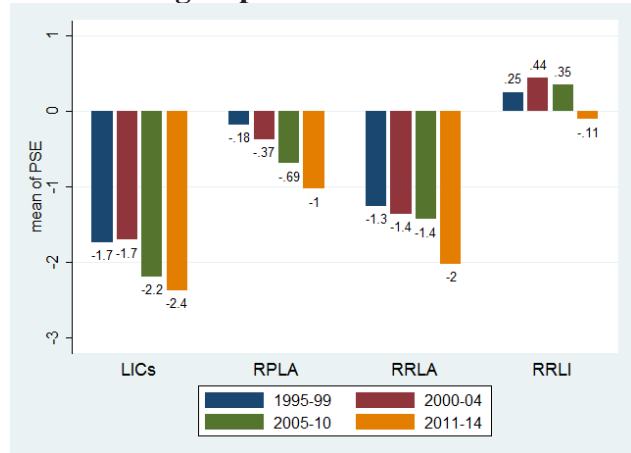
The political stability (PS) indicator scores for all regions, except the Arab region, were lower than the VA indicator (Figure 6.5A). For instance, the average PS scores for developed countries were less than half that of VA and 20% for developing states. Another noticeable point regarding Eastern European countries is the considerable progress they have made between 1995 and 2005, as their average VA index more than doubled from 0.19 to 0.46 and the PS score increased from zero to 0.18. Most post-communist states succeeded in sustaining at least a moderate level of democracy, in spite of turbulent economic and political progress, military conflicts and coup attempts (Fidrmuc, 2003).

Figure 6.5: Political Stability and Absence of Violence/Terrorism (PV)

A. World Regions and Arab subgroups



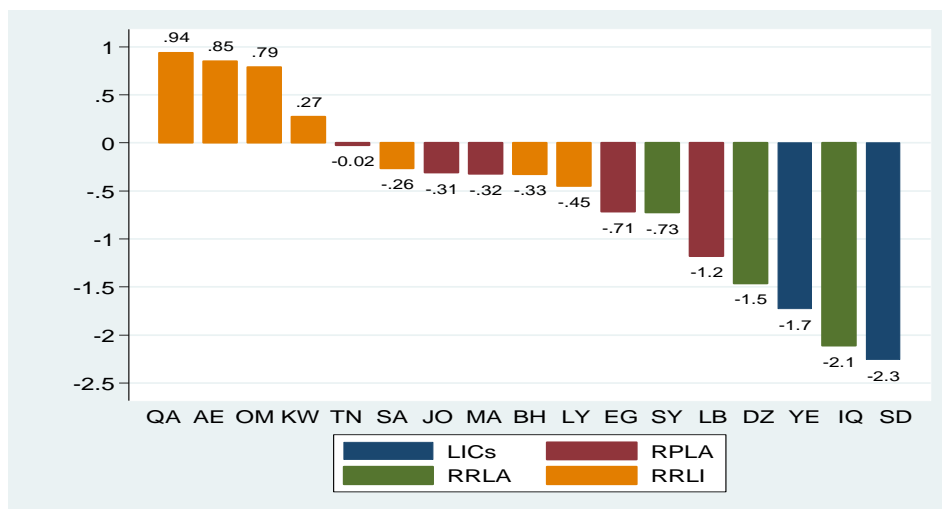
B. Arab subgroups and Arab countries



Source: Author's estimates based on World Bank's Worldwide Governance Indicators (WGI)

In contrast to the world's trend, the PS score in the Arab world was much better. For example, the overall PS average for the region was -0.5, which is a great improvement on the poor VA score of -1 (Figure 6.5B). However, three countries, Sudan, Iraq and Yemen, had the lowest scores in the region with averages worse than their VA indicator (Figure 6.6).

Figure 6.6: Political Stability for Arab countries (1995-2014)



Source: Author's estimated based on World Bank (2015), Worldwide Governance Indicators

Interestingly, also in Figure 6.6, four Arab countries (mostly monarchies) have positive scores, three of these, the UAE, Qatar and Oman, attained a level of political stability similar to some European countries. Although other non-republic nations such as Bahrain, Jordan, Morocco and Saudi Arabia did not achieve the same level and still have negative scores, they still achieved a considerable high level compared to other countries in the region. These figures are consistent with the argument that monarchies are more politically stable than republics in the

Arab region, as they have survived for decades against the political storms that have blown away the neighbouring republics especially the tide of the Arab Spring Revolutions that have swept most Arab countries since 2011 (Aysan et al., 2006). According to Yom and Gause III (2012), Arab kings and princes have seen sitting on their thrones secure against the winds of change.

Many arguments have been presented to explain this striking relationship between regime type and regime persistence. Firstly, the cultural argument holds that Arab Kings, Emirs, and Sultans not only enjoy their stable and long reign based on traditional religious and tribal legitimacy but also reinforced and promoted by a tribal organisation (Kostiner, 2000). Furthermore, the royal families of Morocco and Jordan claim descent from the Prophet Muhammad himself, according to article 19 of the Moroccan constitution, the king is the “Amir al-Mumineen” (Commander of the believers) and the defender of the faith and the Saudi kings, named as "Custodian of the Two Holy Mosques", act as a general symbol for all Muslims. While ‘presidents for life’, such as Hosni Mubarak, Ben Ali or Muammar Gaddafi, continuously need to manipulate elections and expand national-security imperatives in order to govern indefinitely (Filiu, 2011).

Secondly, the legitimacy of kings is virtually impossible to measure directly (Costello et al., 2015), simply because the royal ruler has the right to choose a new prime minister and grant them rights and privileges to achieve executive purposes. However, after a while, if people do not accept these policies, the king can intervene in the system to spearhead controlled reforms that defuse public discontent and then the majority of the blame can be transferred to an executive person rather than the real player (the monarch). Thus, the king can revoke all given rights and reassigns a new administrator to manage his own policy (Yom and Gause III, 2012). Where royal blood relatives dominate key public offices and positions, this can further help to keep the regime intact.

Thirdly, the monarchies experienced fewer protests during the Arab uprisings due to their cooperation to repress any dissent. In February 2011, the Gulf Cooperation Council Countries (GCC) (Saudi Arabia, Kuwait, Qatar, and the UAE) pledged US\$20 billion to support stabilisation in Bahrain and Oman and provided Jordan and Morocco access to a US\$5 billion fund to counter the demonstrations (Yom and Gause III, 2012).

Lastly, oil wealth provides the funds for financing social programmes, public jobs, and creating an internal security apparatus to repress dissent. In contrast, regimes in Egypt, Tunisia, Syria,

Libya, and Yemen have continued to depend on personal and tribal loyalties, extensive repression and poorly funded welfare programmes (Goldstone, 2011). During 2011, the Gulf monarchies spent their fossil-fuel incomes heavily on facing down a dangerous Arab spring, either to avoid the occurrence of protests or to suppress the demonstrations. For example, in Kuwait after popular protests in the El-Irada square in 2011, the Emir of Kuwait Sheikh Sabah Al-Ahmad decided; in order to calm his population, to grant to all citizens about US\$3,600 on the occasions of the 50th anniversary of the country's independence from British protection and the 20th anniversary of the liberation from Iraqi invasion (Al-Atiqi, 2013). Similarly, The Saudi King, Abdullah bin Abdul Aziz, announced plans to allocate allowances and social grants of about US\$36 billion to avoid protests against his government. The King offered a 15% pay raise for public employees and aid for students and the unemployed (Althani, 2012).

Overall, in terms of democracy, the lack of stability and accountability in the public sphere has allowed the status quo to remain entrenched in most of the ACs. All these factors were among the leading force behind the protests in 2011 and beyond. The real call of the Arab spring was for full civic rights, dignity, and the renegotiation of the social contract based on modern governance principles and inclusion.

6.4 Public Administration Capacity (Governance process)

The Public Administration capacity is considered the middle phase of the governance system. According to Schneider and Enste (2000), regulatory restrictions and bureaucratic procedures not only limit competition and performance of markets but also provide a fertile environment for corrupt activities. If people and businesses consider that contracts will not be enforced or defended, their incentive to engage in the informal economy increases. This dimension is covered by two essential factors: government effectiveness and regulatory quality.

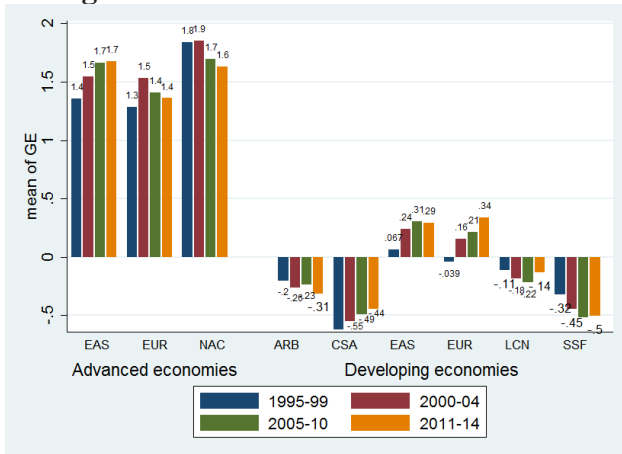
6.4.1 Government Effectiveness (GE)

The GE indicator measures the quality of public services, bureaucracy and the quality of policy formulation and implementation, in addition to the degree of its independence from political influences and the credibility of the government to such policies (Kaufmann and Kraay, 2008). According to OECD (2001), the delivery of civil services involves the interaction between the government (politicians), bureaucrats and citizens. The government mobilises citizens to pay taxes in return for public services. Using tax collected, the government hires bureaucrats to deliver services. Since taxpayers perceive taxes as the price for quality public services, the

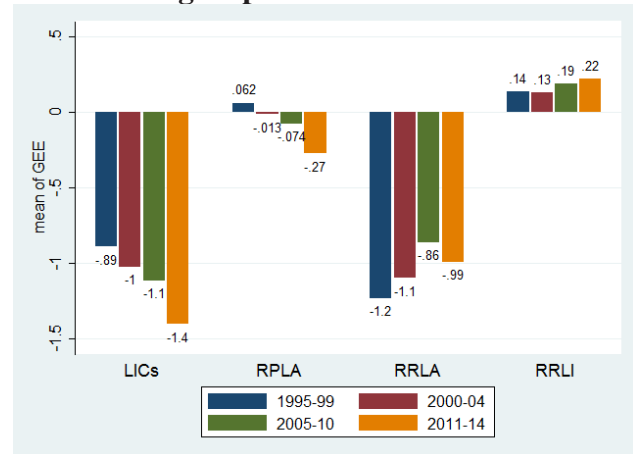
provision of poor-quality public services could be perceived as an abrogation of the social contract between a government and taxpayers, which could lead to tax evasion, and potentially increases the possibility of a fiscal deficit.

Figure 6.7: Government Effectiveness (GE) (1995 – 2014)

A. Region



B. Arab subgroups



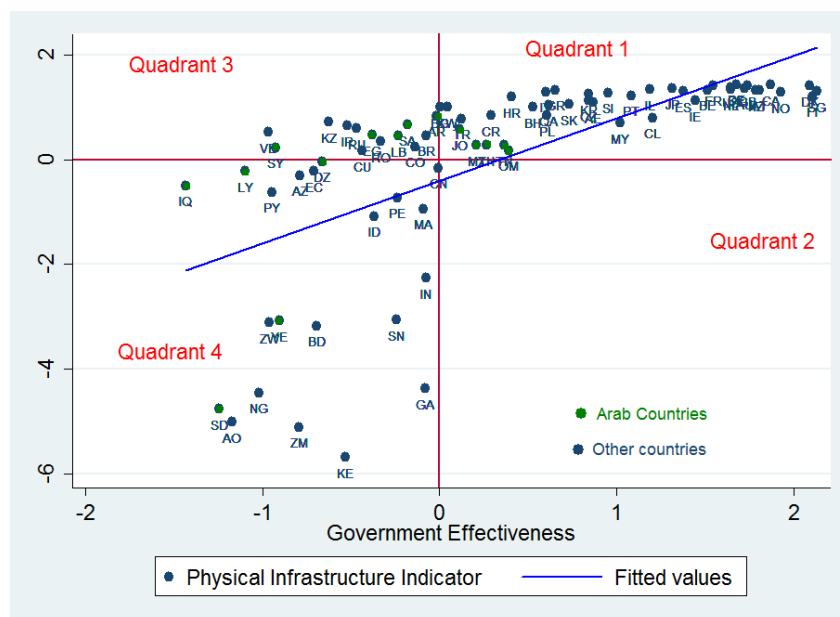
Source: Author’s estimates based on the World Bank’s Worldwide Governance Indicators (WGI)

The estimated scores of the GE indicator may classify the world into two groups, as seen in Figure 6.7A. The first group is countries which represent effective governments with an index above the world means value, and this includes North America, all European countries and all of Southeast Asia. Despite some developing countries making good or even excellent progress, such as in the case of transition economies in Eastern Europe, their GE indicator is still very low compared to advanced economies. Other developing regions that have scores below the mean are classified as ineffective.

The World Bank (2004b) shows that in many developing countries where public services are accessible, they are characterised by poor technical quality, dysfunctionality and inability to match the needs of the diverse public. According to Gani (2011), the government effectiveness element of governance influences the sustained long-term growth of developing countries. For instance, Pushak et al. (2007) found that there could be a higher growth payoff from macroeconomic stability and public expenditure in countries characterised by relatively better public sector governance. Therefore, states that maintain efficient governments designated by minimal bureaucracy, high-quality public service, and with an eye for financial integrity and better management of public resources, and equally enforce official rules and regulations with high potency, can gain the confidence of producers and investors.

The scatter plot in Figure 6.8 shows a positive relationship between government effectiveness and the provision of public services such as the physical infrastructure indicator with a correlation coefficient of 0.6629. This means either the government is effective and provides high-quality public services (quadrant 1), or it is ineffective and delivers unsatisfactory services (quadrant 4), or it affords moderate quality and its efficiency is still not so high (quadrant 3). More important, there is no strong evidence of effective government presenting low public services (quadrant 2).

Figure 6.8: The relationship between government effectiveness and public services provision (1995-2014)



Source: Author's estimates based on the World Bank's Worldwide Governance Indicators (WGI), and World Development Indicators

Concerning the Arab region, despite wide dispersion regarding public sector characteristics, the region on average performs only slightly worse than similar competitor countries in other regions, as measured by the government effectiveness indicator. The Arab region was the third-worst region after Central Asia and Africa (Figure 6.7A and 6.7B). However, this indicator is the best score for the region among all governance indicators with an average of -0.2; even in LICs subgroup, the score was about half of all previous indicators (VA and PS).

In the Arab region, according to Jabbra (1989), the core structures and procedures of administrative and bureaucratic systems were primarily designed and implemented by the Ottoman rule and were reshaped after the two world wars by the French or British colonial powers. After independence especially during the turn into the socialist era, there was a common belief in the Arab states that the bureaucracy of government should play an effective

central role in development, political and socioeconomic issues (Al-Hegelan and Palmer, 1985).

However, ACs found that the bureaucracy system was ill-equipped to carry out the daunting responsibility of development; its employees and even in some cases its top echelons did not have sufficient education, training and skills to enable them to carry out their duties with competence and effectiveness. Thus, from the 1980s, Arab leaders felt administrative development must accompany, if not precede, development. Hence, they proceeded to modernise their bureaucracies by inviting foreign experts to advise on how best to achieve administrative improvements, and public servants were sent abroad to train in the best institutions (Ayubi, 1986).

During the 1990s, Arab rulers realised that neither of their efforts to promote the administrative quality and capacity of their administration been successful nor had their hopes to achieve political and socioeconomic progress been satisfied (Jreisat, 1997). The bureaucracy was unable to reform itself and so could not improve its service to the public. In fact, "the bureaucracy has become an instrument of domination, and the bureaucrats have turned into a new exploitative class" (Riggs, 2001).

Currently, there are improvements in the progress in GE in some Arab states as most are located in quadrant 1 in Figure 6.8. This is due to implementing strategies aimed at improving the effectiveness of governments primarily in the UAE, Qatar, Bahrain and Oman. However, in the majority of Arab nations in spite of their numerous efforts to reform governmental bodies, they have been unsuccessful in delivering the necessary change and development. As Jreisat (2001) noted, Arab people mostly, consider bureaucracy as a mode of arduous procedures and defective arrangements. Government departments for them mean corrupt places, which are based on lazy and inflexible applications of outdated administrative processes and open the way for favouritism, nepotism and bribery.

This undesirable situation brings into question who is responsible for, and why the reform programmes have not succeeded in modernising Arab bureaucracies. From their side, governments' leaders accuse their public servants of being incompetent and corrupt, while most Arab citizens blame their political and governance system for such frustrating conditions. There are different diverse causes for this failure. Whereas there are several reasons related to each Arab country, they still share some common grounds for the deficiencies.

- The concentration of power is a standard feature of Arab authorities. It is concentrated at the top of the organisational hierarchy. This situation has led to a series of problems, including "red tape", lack of coordination, an absence of communication, unclear job descriptions, and overlapping tasks and functions (Schwanitz, 2004).
- The political rulers have always interfered with the bureaucracy in order to protect their regimes and promote their interests (Nabli, 2007). Such intervention is bound to cause confusion in the bureaucracy and distract it from pursuing development priorities and responding to the real demands of the citizens.
- Another serious issue facing Arab governments' effectiveness is the lack of qualified employees, poor training, and incongruences between the job requirements and available facilities (Sahnoun et al., 2014). As noted by the AfDB (2012), the private sector or multinational corporations attract most of the intelligent and outstanding people through high salaries, significant material incentives, and much better working conditions with flexible work rules. In contrast, a large number of educated people who join the public sector are often given jobs, which do not match their level of education and training or have inappropriate wages for their qualifications.
- Furthermore, corruption is a persistent feature of bureaucracy almost everywhere in the Arab countries. Corruption spread across governmental agencies because of public servants' weak commitment to regulations, their lack of appreciation of the concept of public service; as they see the provision of public services as a favour rather than citizen rights, inadequate salaries, and the absence or weakness of key institutions to ensure accountability (Pramanik, 2007; Salamey, 2015; Touati, 2014).
- Arab bureaucracies can be classified into two groups regarding staffing. The first group, which experience "overstaffing" are present in all Arab states except the RRLI. This has resulted in confusing and poorly coordinated administrative structures. Public service employment in these countries has become a way to hide unemployment and a means of absorbing fresh graduates into the job market but leads to a low degree of productivity, accountability and inefficiency (Pissarides and Véganzonès, 2006; World Bank, 2004a). The other group, which practice "labour importing" have understaffed bureaucracies, with many unqualified employees. These are countries prone to hiring foreign personnel to fill vacancies in the public sector (OECD, 2010). However, they are often not fully utilised and complain about not fully understanding their duties and responsibilities. Furthermore, in

some cases, the diversified background of international employees has contributed to reduced communication (Alvi, 2001).

6.4.2 Regulatory Quality (RQ)

The Regulatory Quality (RQ) indicator is another aspect of governance that can impact long-term development. It captures perceptions of the government's ability to formulate and implement sound policies and regulations that permit and promote a market-friendly environment, especially for private sector development (Kaufmann et al., 2006).

The world and regional trends for regulatory quality during the study period were quite close to the previous indicator (Government Effectiveness) in the public administration dimension. The burdensome regulation of entry for firms was associated with less democratic governments, greater corruption and larger informal economies in particular in Central Asia, Africa and Arab regions (Figure 6.9A). In these countries, the bad regulatory environment interferes with enterprise activities through permits and licenses, arbitrary taxation and superfluous statutes (Safavian et al., 2001). Therefore, "institution building," including building a "good" regulatory regime, is one of the most challenging problems facing all developing countries and the transition economies at present (Parker and Kirkpatrick, 2005). Because building effective regulatory structures are not only the technical design of the regulatory instruments but are also involved in the quality of supporting regulatory institutions and capacity (World Bank, 2002).

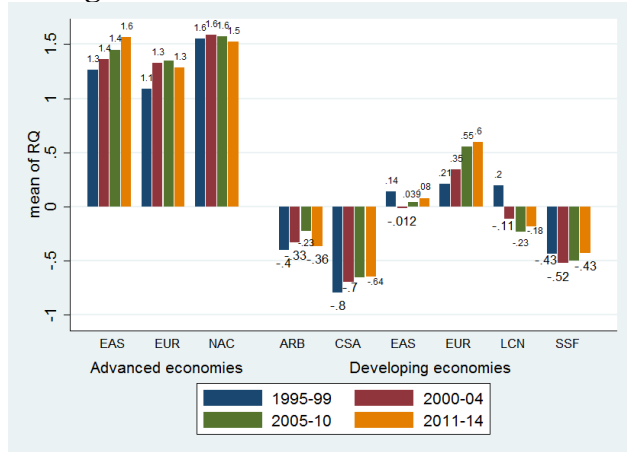
On the other hand, in developed countries which have more transparent guidelines in terms of issuance of permits, fees charged and taxation, one expects firms to engage in production. In addition, the social welfare purposes of regulation are concerned with the pursuit of economic efficiency, and with broader goals to promote sustainable development. Efficient regulation achieves the social welfare goals at minimum economic costs (Gani, 2011).

Regarding the Arab world, although the improvement of regulatory quality is considered as an essential element of governance reform across the region, as illustrated in Figure 6.9A and 6.9B), ACs have half of the world's mean score, and two subgroups (LICs and RRLA) hold the lowest score worldwide. In most of the Arab states, the absence of good regulatory quality makes it easier for the government to pursue market-unfriendly policies and impose excessive and onerous regulatory burdens, thus hindering the development process and frustrating the governance improvement efforts. However, GCC and others from RPLA countries have improved legislative capacities in recognition of their role in improving regulation. Given the

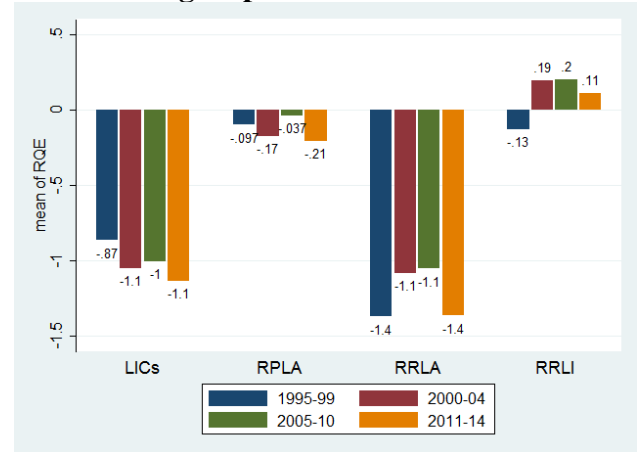
level of current regulatory activity, political commitment is pivotal to improving the quality of regulation.

Figure 7.9: Regulatory Quality (RQ)

A. Region



B. Arab subgroups



Source: Author’s estimates based on the World Bank’s Worldwide Governance Indicators (WGI)

This conclusion is supported by the Doing Business (2004) report which highlights how easy or difficult it is for a local entrepreneur in a region to open and run a small to medium-sized business when complying with relevant regulations, the Arab world as a whole earned a composite score equivalent to that of the 103rd country in the rankings (among a total of 184 countries ranked), behind Southeast Asia and Latin America. Nevertheless, the differences between the sub-regions were also pronounced as the GCC countries had an average score of 39, far ahead of the rest of the region. The lag is most considerable concerning regulatory issues in particularly bureaucracy, building permits, and contract enforcement. For instance, starting a business required an average of 8.3 procedures in the region in 2012, more than twice the number in North America, with Algeria scoring the worst, at 14 procedures, while Saudi Arabia was the best, at only three. Besides that, contract enforcement required an average of 45 procedures, the highest of all world regions. That performance partly explains the low rate of formal businesses creation in the region, which has among the lowest business densities of any world region and therefore not allowing the private sector to play its pivotal role in growth and development.

6.5 The State of Law (Governance output)

The state of law or the state of justice means, the state power is based on the national constitution and ensures the safety and constitutional rights of its citizens. This is the last

dimension of governance, and it concerns the rules of society, property rights and anti-corruption policies. It is represented by the last two indicators of governance, ‘rule of law’ and ‘control of corruption’.

6.5.1 Rule of Law

The term “rule of law” is used to mean independent, efficient, and accessible judicial and legal systems, with a government that applies fair and equitable laws, consistently, coherently, and prospectively to all of its people (World Bank, 2004a). Therefore, there are four routes to an appropriate and efficient rule of law in a society: firstly, through the control of violence and the provision of personal security; the second way is through protection of property and contract rights; Thirdly, by institutional checks on the government through independent judiciaries; and finally, through control of bribery and corruption.

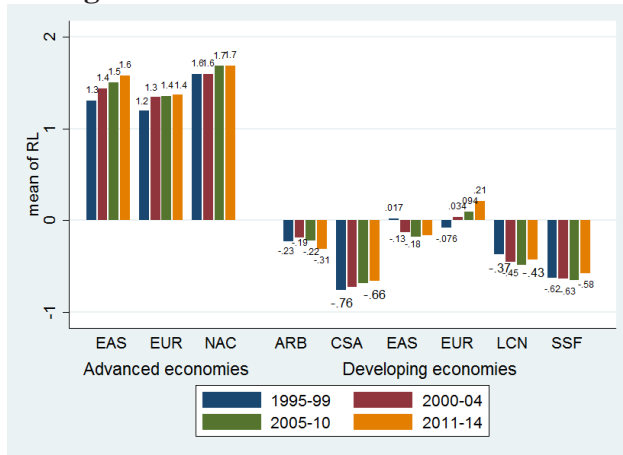
Figure 6.10A may help to explain why institutions were weak in many developing countries because the rules simply are absent, suboptimal, or useful regulations are poorly enforced. Except for few transition countries especially in Eastern Europe, all developing regions have negative scores regarding the rule of law, and their overall average (-0.5) was far below the average of democratic states (1.5) or even the world average (0.2). These states still suffer from ineffective legal and judicial systems, and laws are not reformed to fit the requirements of effective functioning in modern society. For instance, there is an absence of property rights, or they are not clearly defined or adequately protected in an economy driven to encourage opportunism, with individuals or groups exploiting the lack of private ownership. Furthermore, the spread of violence in developing countries through fully-fledged civil wars or crimes leads to personal insecurity linked with illegal activity and significantly affects development (Ayres, 1998; Buvinic and Morrison, 1999). The World Bank (2006) has estimated that decreasing the homicide rate by 10% increased per capita GDP by 0.7% – 2.9% over the subsequent five years.

It is fair to say that, the record of Arab states has been mixed, as shown in Figure 6.10C. While some countries, in particular, GCC and Jordan, have had positive progress, the rest of the region suffered from miserable conditions in terms of the Rule of Law (RL) indicator. These different scores pushed the overall average for the region ahead of all other developing regions. This contradiction can be explained if the nature of the improvement itself is carefully analysed. Indeed, the GCC countries have enhanced their legal infrastructure, particularly the quality of contract enforcement, reliable protection of property rights and the independence of commercial courts (Looney, 2013). Other serious efforts have increased the public’s

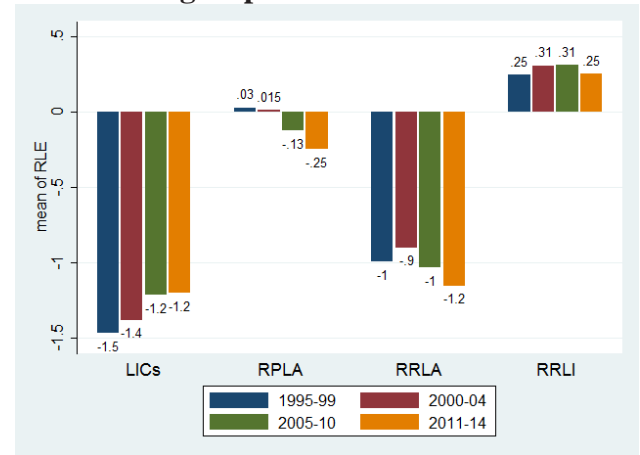
confidence in the rules of society, such as traffic laws. Also, it has significantly succeeded in reducing rates of violence and crime in its communities (Saif, 2009).

Figure 6.10 Rule of Law (RL)

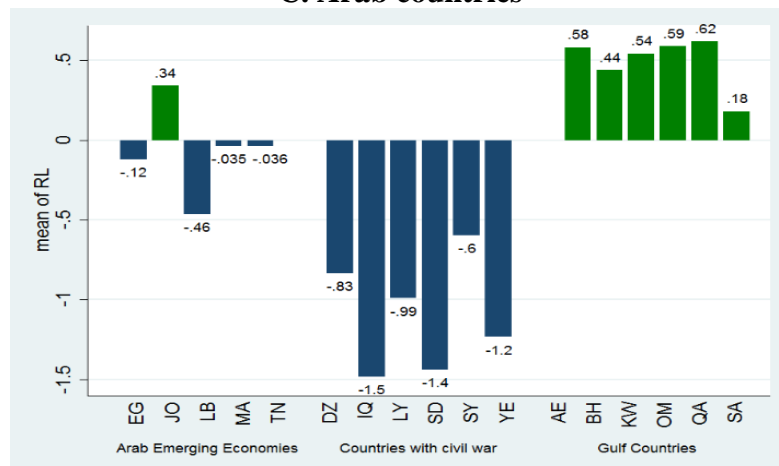
A. Region



B. Arab subgroups



C. Arab countries



Source: Author’s estimates based on the World Bank’s Worldwide Governance Indicators (2015).

Nevertheless, these sorts of improvements do not include essential elements of political governance that were addressed within the rule of law indicator. For instance, Qatar was able to undergo significant changes and ranked first in the region by an average score of 0.62. However, Freedom House describes the judiciary in Qatar as “not independent in practice”. While the constitution protects individuals from arbitrary arrest, detention and bans torture, Law 17, issued in 2002, grants the right to suspend these guarantees for “the protection of society” (Bahry, 2013).

The risk of this kind of development is that after a while, it will become difficult for the Gulf countries to sustain their progress if the necessary political reforms are introduced without a real desire to enact them. The Gulf case supports the argument that the maintenance of the rule of law is not necessarily unique to democratic societies (Ungar, 2002). Despite this, these two institutional characteristics; democracy and the rule of law, are highly correlated.

In both situations, the absolute absence of the rule of law in some Arab states or loss of the political aspect in others, the Arab masses have asked for an end to the system of autocratic rule and its replacement with the rule of law and institutions that respect the individual and collective freedoms of citizens, uphold the separation of powers and use elected structures as their basis (Schwanitz, 2004). However, the only response from the rulers is to decorate their constitutions with phrases that respect all aspects of the state of law including human rights, justice, and equality before the law, without any real actions on the ground (Kaufmann, 2006).

The following points highlighting, in brief, the major and frequent defects that impede the rule of law in most of the Arab countries:

- **Obstructions of justice:** Although independent judiciaries are in the heart of the rule of law of any state, all Arab justice systems have severe threats to their independence because of the direct influence from the executive authority or through their influence on the legislative authority (Cheema, 2005). Furthermore, the spread of military courts and state security courts negates from the principles of fair justice by detracting from guarantees of a fair trial (Moustafa, 2007). Thus, in reality, there is a considerable gap between constitutional texts and actual legal practice in protecting the personal security of the Arab citizen.
- **Constitutional failings:** Arab's constitutions do not include many key respects of international norms implicit in the charters to which ACs have acceded. These constitutions adopt ideological or doctrinal formulas but with empty stipulations of general rights and freedoms. This allows individual rights to be violated in the name of official ideology (Brown, 2012). Other constitutions also are not explicit with regards to freedom of opinion and expression and tend to restrict rather than to permit them (Malki, 2014).
- **Legal restrictions:** In fact, six Arab countries, Kuwait, Libya, Oman, Qatar, Saudi Arabia, and the United Arab Emirates, still prohibit the establishment of political parties, while in many other countries there is a high degree of restrictions on the formation of political parties (Al-Rasheed et al., 2009). In addition, although the majority of the Arab nations

support the right to form civil associations, most regulations which manage the civil society sector involve a wide array of restrictive measures that hinder the exercise of that right. The government have the right, and can any time dissolve the associations themselves, or their boards. Their affiliations and sources of funding are also subject to strict controls (Yom, 2005).

- **National security measures:** Many Arab states have undergone exceptionally long periods of martial law or emergency rule, and in most cases transformed from interim regulations to permanent ones. Declarations of emergency were often simply a pretext to suspend basic rights and exempt rulers from any constitutional rules. Particularly after the 11th September 2001 (9-11) attack on the USA, most Arab countries passed anti-terror laws based on a broad and unspecified definition of “terrorism” (Kötter et al., 2015). These moves have given government security agencies sweeping powers which became a form of a threat to basic freedoms in many countries. Such laws curbed freedom of expression and expanded police powers of search and arrest (Hazen, 2016). In some cases, these rules increase the use of military courts and allow illegal detention (Al-Rasheed et al., 2009).

6.5.2 Control of Corruption

Corruption is a general term that covers several aspects of abuse of authority including fraud, nepotism, bribery and even extortion (OECD, 2007). Transparency International (2002) defines corruption as consisting of “the abuse of delegated power for private ends and purposes”. In turn, the World Bank distinguishes three types of corruption, reflecting variations regarding the scope and frequency of practice. The first class is the abuse of political power; where political decision-makers, making and applying laws, use their official position to improve their wellbeing, their status or their personal power. Secondly, large-scale corruption which involves all relationships for private purposes between corporations or more general by networking ways and interest groups. Lastly, small-scale corruption when minor officials, who have no decision-making powers, practise it and small bribes often sustain it as support (Paldam, 2002).

The evidence from our dataset shows that corruption is a global problem, worsening over the last two decades in all regions either developed or developing (Figure 6.11A). According to the OECD (2014), it is estimated that more than one trillion dollars are spent each year on bribes globally and that US\$2.6 trillion was lost due to corruption in 2014; that is 5% of global GDP, and the actual figure is probably even higher. Furthermore, of the over 7 billion people

alive today, over 6 billion live in countries where corruption is endemic (Transparency International, 2016). Despite all these activities, corruption remains arguably the single most significant issue facing societies worldwide in general and emerging countries in particular.

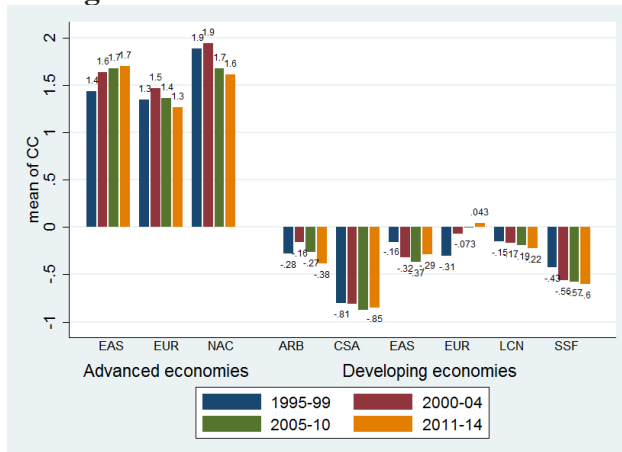
Tackling corruption is the focus of a massive effort and an ever-expanding body of rules and regulations across the world. Many countries have taken definitive steps towards tackling corruption risk in recent years through launching initiatives to battle against corruption or apply a Bribery Act (OECD, 2014).

In a society based on justice, compassion, and morals, corruption cannot be so conspicuous. Likewise, inequality, poverty, and deprivation cannot have any place in a society guided by high morals, ethics and values result in the absence of corruption (Robinson, 2012). However, in emerging economies in the early stages of development, the greed for achieving personal wealth or benefit, whether legally or illegally, is likely to foster development. The desire to achieve a specific standard of living as set by the society is the guiding force behind the fulfilment of material expectations either by lawful or unlawful means. However, after these levels of expectations are attained, it is likely that some people then start paying more attention to other moral and ethical human qualities (Kidd and Richter, 2003).

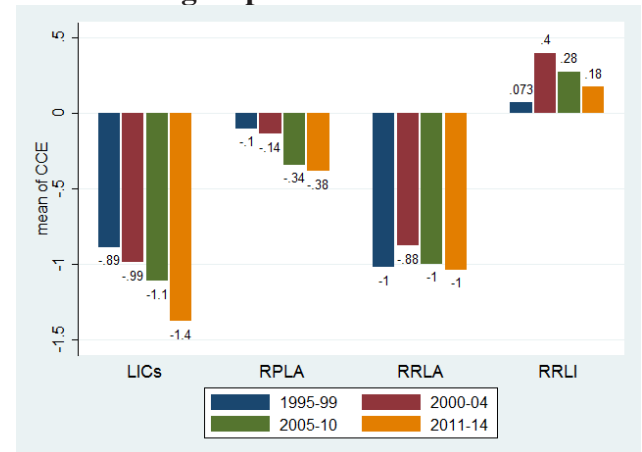
Most international studies and rankings give many Arab countries lower scores for control of corruption and government transparency. As shown in Figure 6.11A and 6.11B, the control of corruption index developed by the World Bank ranked the Arab region as the third-lowest region on the index with an average of -0.4 followed by Central Asia and Africa. Out of 17 countries only five, mainly the Gulf countries excluding Saudi Arabia, have managed a positive score and have progressively become less corrupt than other countries in the region, while Iraq is the most corrupt. Transparency International (2015) on its corruption perception index (CPI) scored, 90% of Arab countries with a "failing grade" and identified five out of the ten most corrupt countries in the world to be from the region. Only the UAE and Qatar were said to "have managed to remain above the average"; despite their scores have gradually declined.

Figure 6.11: Control of Corruption (CC)

A. Region



B. Arab subgroups



Source: Author’s estimates based on the World Bank’s Worldwide Governance Indicators (2015)

The International Country Risk Guide also estimated a corruption score of 4 out of a maximum of 6 for the Arab region over the period 1984 – 2013 (Ali and Saha, 2016). Moreover, according to the BTI (2014) report, most of the ACs are poorly ranked regarding corruption control, with scores fluctuating from 2 for some countries to 5 for others on a maximum scale of 10 (Chene and Hodess, 2007).

Based on all of these indicators, it is clear that in Arab countries corruption is a common and serious issue, which level has increased, but at different degrees and with diverse causes in each of the countries. According to Andvig and Fjeldstad (2000), the latent reasons behind corrupt behaviour is the offer of bribes, which are, simultaneously, an economic, institutional, political, and cultural problem.

On the socioeconomic side, as mentioned in chapter 5, latent reasons behind corruption include the high prevalence of poverty, illiteracy, along with unemployment (Al-Habees and Rumman, 2012). As for poverty, the condition is not better. In 2010, 140 million persons were living under the poverty line, that is about 19% of the Arab population living on less than US\$2.00 a day. Regarding illiteracy, Arab countries have the lowest adult literacy rate in the world (UNESCO, 2009).

Another important reason is salaries to the employee, especially in the public sector, are incredibly low in some countries. Such low incomes drive civil servants towards corruption. This is particularly prevalent in the high ranks of government officials; being very low paid gives them an even stronger excuse to continue this habit. More generally, and by comparison

with other developing or emerging regions, wages in most Arab countries (except the Gulf countries) are found to be much lower. In 2014, estimates indicate that the average real GDP per capita in the ACs was only about US\$5,861 against US\$8,642 in Latin America, and US\$6,462 in the East and Central Asia, while the world's average was US\$10,631 (Touati, 2014).

Specific to the economic side also, the rent-based economies characterising certain Arab countries, in turn, do increase corruption, as the natural resources lying at the origin are sold at prices appreciably higher than their real cost. Therefore, the sale of concessions is usually associated with bribery payments (Hvidt, 2011). Similarly, the Arab regimes safeguard their sustainability in power through the generous financing of organised-repression agencies and media financing. For instance, in Iraq after the invasion by the United States in 2003, corruption played a significant part in wasting its resources; especially the oil-related ones. Regarding the report of Government Accountability Office (GAO) in 2007, the quantity of oil daily sold by means of smuggling since 2003 would be estimated at a value ranging from \$5 million to \$15 million, which is equivalent of 10,000 up to 300,000 barrels a day, with the complicity of corrupt executives in charge. This explains why Iraq is classified in the first rank on the list of 180 countries affected by corruption in both the public and private sectors.

Furthermore, concerning the social dimension of corruption in Arab nations, small-scale corruption (bribe) is deeply rooted in the social norms. Many Arab societies do not or fail to recognise bribe as inappropriate behaviour. The consent to this type of corruption as being something "normal" is dangerous since it helps to consolidate a culture of bribery and encourage corruption as an institution, as bribe providers and the receivers no longer view bribery as a problem (Touati, 2014).

It is also worth noting that, in the Arab region, corruption is not exclusively the result of economic and social factors, but also political circumstances. The political aspect, in turn, stimulates corruption. Moreover, it is not a simple task in the Arab world to separate political power from the economic one, as they must often converge into either a similar trend, a duly-assumed long-lasting alliance, or into an objective consensus on a common ground of real interests.

In such cases, structural corruption is part of systematic State policy. Structural corruption is one of the main barriers impeding reform in the ACs, given the fact that it is systematically used to undermine political and civil activities, and create classes from the aristocracy and

bureaucratic elites, who took advantage of the status quo and became the main part of the stake groups in the political power structure (Cartier-Bresson, 2000).

Pramanik (2003;2007) findings on the distribution of economic power (DER), shows the Arab region is highly polarised. The index value of DER for the nine wealthy Arab countries was very unfavourably at 27 compared with the value of European and North American countries at 67. Given such a high concentration of resources, who benefits from public services or government development investments? Undoubtedly, the allocation functions covering these economic activities are easily manipulated in favour of those who also finally control economic power. Therefore, as long as the economic power remains concentrated within the privileged, or more precisely, the ruling class and their allies, the openings for corruption concerning the regulation of economic activities in the basic sectors of the economy can hardly be closed in any feasible way (Pramanik, 2007).

This chain of political corruption is made possible by the concentration of political power in few hands that make full use of the concentration of the economic powers at their disposal, and the manipulation of law paves the way for economic corruption, as a natural consequence of the political corruption.

One possible solution to undermine this chain is an improvement in democracy, as the decentralisation of power comes only through the recognition of the people's power to change the politicians who promote corruption. In democratic systems, citizens can remove politicians. Thus politicians think carefully when they are faced with the choice of engaging in an illicit act. Since democracy in the Arab region remains virtually absent, political corruption not only prevents autocrats and their underlings from being held accountable for their poor economic judgment but also prevents critics from pointing out government incompetence and corruption (Emara and Jhonsa, 2011).

In conclusion, the phenomenon of corruption which has spread throughout the whole Arab world was initially caused by social and economic aspects but has been enhanced by poor governance and incompetent institutions. Therefore, corruption should be considered as a result, rather than a reason.

6.6 Main observations on governance in the Arab region

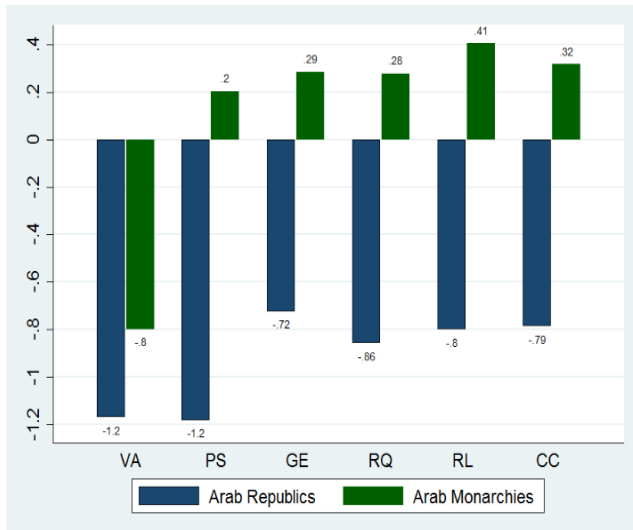
The first important observation from the above comparative analysis is that some countries generally show significant progress in governance indicators. In contrast, the rest of the Arab

countries lag behind in the rankings. Interestingly, the first countries are the Gulf kingdoms except for Saudi Arabia, as can be seen in Figure 6.12A. Generally, Arab monarchies have made significant progress in most of the governance indicators especially in the rule of law and corruption control during the past two decades, while the republics still have substantial deficits in all aspects and improvements or the willingness to promote good governance is very limited. This remark raises puzzling and controversial questions: Is the monarchy regime more compatible with achieving a high institutional reform? Alternatively, are the royal systems the most suited for the nature of the Arab peoples?

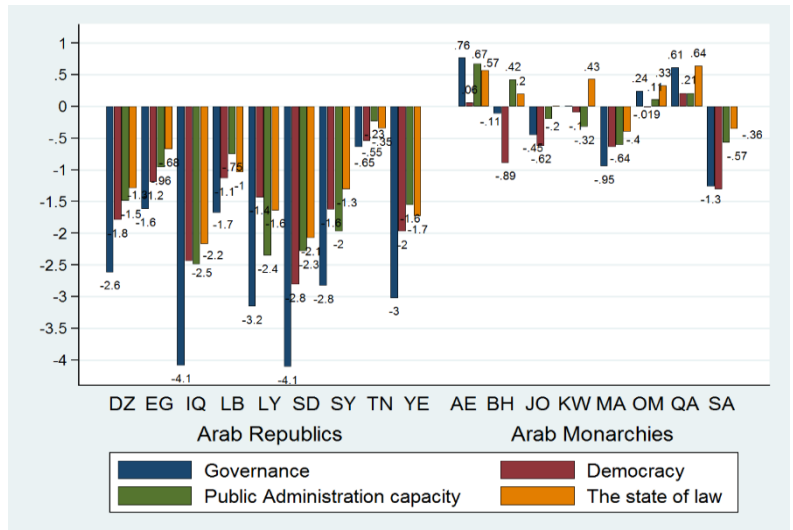
As presented in Figure 6.12B, although most of the Arab monarchies have high scores, they have not all had the same progress in the indicators. For instance, the Kingdoms of Saudi Arabia, Morocco and Jordan not only have negative scores for all indicators, but they also have scores which are significantly different from other countries in the group. For the Republics, although none had positive scores for all the indicators, some of them, such as Tunisia and Lebanon, have made much better progress than other Kingdoms.

Figure 6.12: The Governance indicators in Arab monarchies and republics

A. Overall Performance



B. By Countries



Source: Author's estimates based on World Bank's Worldwide Governance Indicators (WGI)

Concerning the political stability of Gulf monarchs, Besides the reasons in the above section 6.3.2, the kingdoms have one important advantage: their political structures are flexible. Modern monarchies can hold considerable executive power while ceding legislative authority to elected parliaments. This gives monarchs more room to manoeuvre to pacify the people. Additionally, in monarchies, succession can result in change and reform, rather than the

destruction of the whole system. In monarchies, rulers will stay in office as long as they are willing to share their power with elected officials or hand the reins to a younger family member who heralds significant reforms (Goldstone, 2011).

Furthermore, countries such as UAE, Qatar, Bahrain and Oman, who have made good progress in some of the governance indicators, have applied appropriate and efficient strategies to enhance the quality of bureaucracy and control corruption. In particular, the federal government of the UAE, which set long-term national priorities, as outlined in the “Vision 2021” and includes diversification towards a knowledge-based economy, developing public service excellence and moving towards sustainable patterns of living (ESCWA, 2017). These strategies have contributed to the UAE, achieving considerable development with outcomes close to advanced economies in terms of the environment for doing business or competitiveness metrics (World Bank, 2017a).

However, all these achievements were only in economic and administrative aspects of governance while its political institutions were utterly extractive. Besides their vast natural resource wealth, the transformation to somehow inclusive economic institutions in some Gulf countries is at the root of the country’s high economic performance. A large migrant population has been helpful not only economically as a source of low-cost labour, but also politically in diminishing any calls towards more inclusive institutions. This happened while extractive political institutions and their political system remained under the control of the royal rulers. The autocrat ruling families and their regimes are non-pluralist who use repression to control opposition, support political clienteles, and they have been the main beneficiaries of this growth. For instance, the Al-Nahyan family in the UAE leads both political and economic activities. The Economist (2012), for example, alleged that the UAE entered into a confrontation with the Islamists and laid off dozens of teachers who were believed to have Islamic political tendencies. The UAE authorities also withdrew the citizenship of those accused of involvement in political opposition and calling for reforms.

One may argue that this kind of growth will ultimately become unsustainable. The development in GCC countries cannot continue unless the political institutions become more inclusive. Simply put, without changing its political institutions, Gulf economies may not be able to diversify their economies further and become less independent on oil rents in order to advance to the next stage of economic growth, based on innovation. In addition, in these states, which have a monopoly on violence and executive power, and operate without accountability, they

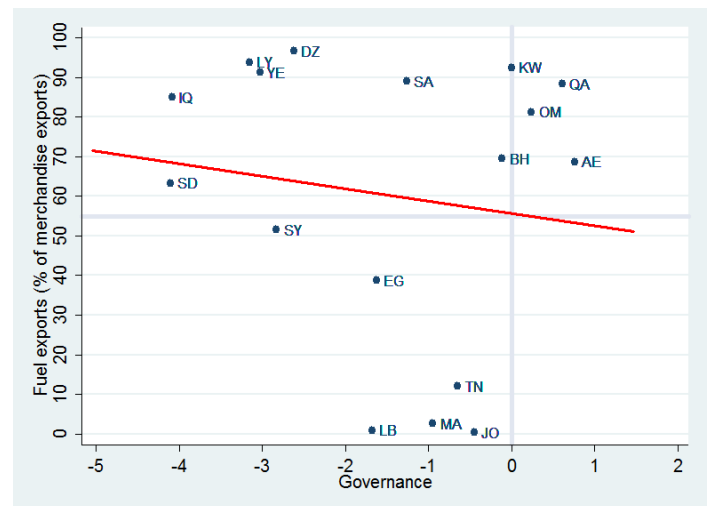
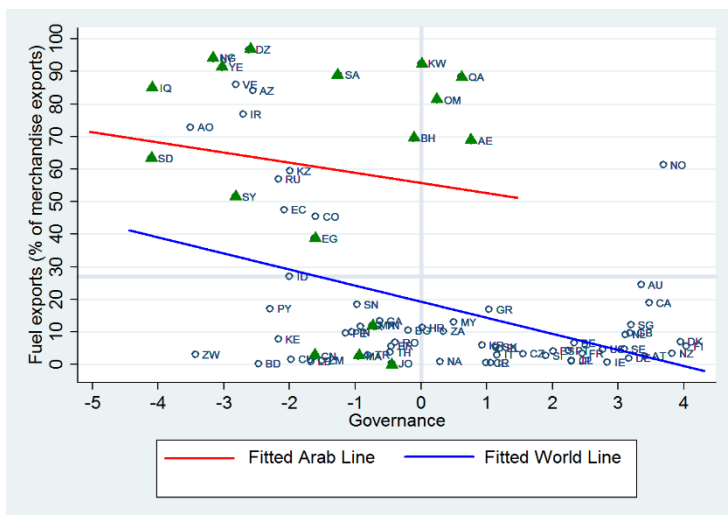
will not be able to provide the rule of law or inclusive economic institutions in a sustained way. At the same time, the financial incentives which used to placate the population will never continue forever, especially with the decline in oil prices, and there will be no substitute for political reform. According to Yamani (2013), the demands of the youth in the Gulf states were not just economic, they were demanding “real citizenship rights, and being treated by their government with dignity.”

In a related context, a potential confounding issue is an overlap between oil wealth and governance system. For instance, all Gulf countries used rents from their huge natural resource abundance; which is entirely under the control of their rulers, to buy loyalty, increase government legitimacy foster regime stability and repress dissent (Colombo, 2012). This natural resource rent is also what allowed them to ride out the storm of the Arab Spring.

Figure 6.13: Relationship between natural resource abundance and governance (1995-2014)

6.13A World and Arab countries

6.13B Arab countries only



Source: Author’s estimates based on World Bank’s Worldwide Governance Indicators (WGI)

As could be observed from Figure 6.13A and 6.13B, resource rents have negative impacts on good governance and institutions in the world in general and the Arab region in particular. Additionally, most ACs appear to be outliers compared to other countries by being located in the quadrant of high oil and low governance. In fact, the relationship is displayed through a clear segmentation of the labour markets, which acts as an effective mechanism for rent distribution in the form of well-remunerated public-sector jobs and other rich social welfare schemes to national citizens.

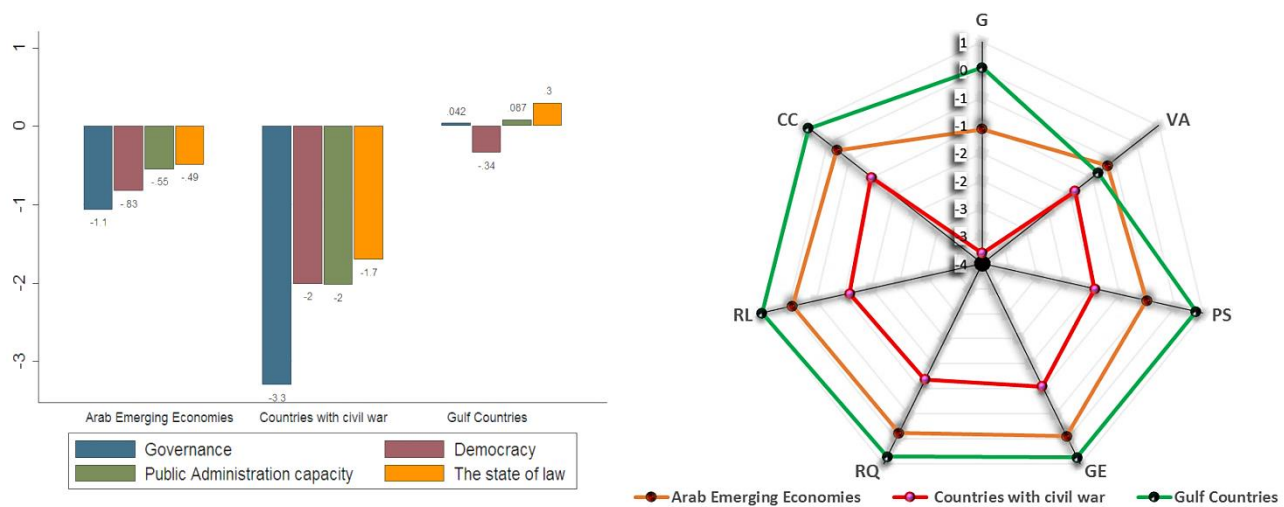
In contrast, the populous group comprised of poorer rentier countries have experienced conflict, violence and social unrest (Ali and Elbadawi, 2012) and (Selim and Zaki, 2016). For instance, the combination of repression and natural resource abundance seemingly made Libya and Iraq especially combustible: large political stakes combined with a dictatorship unafraid of using overwhelming oppression. This result is consistent with a claim in the literature focusing on the Arab region that natural resources hurt democracy and enable governments to maintain their authoritarian rule (Anderson, 1987; Karam and Zaki, 2016; Looney, 2009; Salti, 2008; Selim and Zaki, 2016).

Therefore, in all cases, Arab countries, regardless of whether they are labour-scarce or labour abundant, resource-rich or resource-poor, have for many decades been ruled by single political parties controlled by a dictator, who manipulates election processes and intervenes in the judicial system. They also excessively use the force of the military, security agencies and police on their citizens, with widespread violations of human rights and systematic repressions against all opposition (Albrecht and Schlumberger, 2004).

The last critical observation focuses on the level of governance of countries that faced civil war or violent political conflicts such as Iraq, Sudan, Algeria and recently, Syria and Libya. According to Figure 6.14, countries that experience civil wars already suffer from inferior governance practice. According to Walter (2015), the relationship between civil wars and institutions is bi-directional, as violent conflicts destroy the whole governance system from the side, while the weaker the institutions, the more likely a country was to experience civil fight. Institutional frames can support the credibility of states committed to reform and eliminate the need for violence. Additionally, rulers that are accountable to the public are liable to govern better or at least in the interests of a broader audience. Thus, the grievances will be less severe, creating fewer incentives to challenge the state.

Therefore, although raising the population's standard of living and increasing economic growth could help reduce the risk of violence, focusing on institutional reform and political accountability mechanisms may be the best way to reduce the occurrence of civil conflicts and wars. However, in these countries, building an appropriate and good institutional system is not an easy exercise since the dictators in government are unlikely to give up absolute authority easily. Establishing a good governance policy is the safest route to avoid future civil conflicts and wars as the data shows that if there is significant institutional change, the likelihood of returning to such excessive violence dramatically diminishes (Walter, 2015).

Figure 6.14: Governance indicators among ACs highlighting violent conflict (1995-2014)



Source: Author’s estimates based on World Bank’s: *Worldwide Governance Indicators (WGI)*, *World Development Indicators*, and *EIU*

6.7 Concluding Remarks

Although Arab countries are different in many economic and institutional aspects, there are at least three commonalities among them. First, across the Arab world, both economic and political power is concentrated in the hands of a few. Second, the typical Arab state can be characterised as a police state; its coercive apparatus is both fierce and extensive. Third, external revenues from oil and other energy resources profoundly shape the region’s political economy.

In light of these common factors, waves of protests had taken place in the Arab region in 2011, referred to as the "Arab Spring". The movements emanated essentially from long-simmering and closely interlinked political, economic and social dissatisfaction. This, in turn, was derived from the repression of political, civil and media liberties, weak institutions and economic problems, and was exacerbated by corruption, nepotism and lack of opportunities. The uprising exposed the extent of people’s anger about the internal security agencies that maintained authoritarian regimes. The Arab citizens were looking to end the cruel treatment from the hands of unaccountable officials - the want for “human dignity”. In the language of the demonstrators, this was as powerful as a motivator for popular mobilisation as was the passion for “bread” and “freedom.”

The Arab countries have generally failed in terms of the capacity of institutions not only due to repression, dictatorships, and absence of 'state of law', but also the autocratic regimes who are associated with a high level of corruption. The ruling elites who control both the polity and key sectors of the economy exemplify an extraordinary level of corruption.

Regarding regulatory quality, ACs have half of the world's mean score, and two subgroups (LICs and RRLA) hold the lowest scores worldwide. In most of the Arab states, the absence of good regulatory quality makes it easier for the government to pursue market-unfriendly policies and impose excessive and onerous regulatory burdens, thus hindering the development process and frustrating the governance improvement efforts. However, GCC and others from RPLA countries have improved legislative capacities in recognition of their role in improving regulation.

The chapter also points out that in addition to repression, autocracies, for their survival, rely on patronage relationships and the exchange of the right of political inclusion for greater economic security. Oil wealth, in particular, has sustained regime longevity in oil-rich autocratic regimes irrespective of the degree of widespread repression, while in some other autocracies (all outside the Arab region) economic crises have paved the way for the initiation of the democratisation process. Therefore, it is possible to argue that the prospects for a popular uprising in the Arab kingdoms will persist so long as their rulers continue to maintain broad-based coalitions, secure access to hydrocarbon rents, and enjoy bountiful support from foreign leaders.

In the Arab world, the analysis has also shown that development in governance performance is not strongly associated with neither types of the political system - republic or monarchies, nor economic resources abundance be they oil or otherwise. Improvements in the quality of institutions have stemmed from effective executive strategies, implemented in a few Arab countries, in particular, the UAE, Qatar, Oman and Kuwait. These programmes enhanced the effectiveness of the governments, the quality of bureaucracy and public services, besides practical plans to control corruption. This economic and administrative development combined with oil wealth is at the root of the economic and institutional growth in these countries. However, this happened in an environment of extractive political institutions such as the royal families dominating the political system. While all institutions must be inclusive of sustaining economic growth, the question then is whether these countries can reach the next stage of economic growth, based on innovation, without changing their political institutions, especially in an era of low world oil prices.

In conclusion, this chapter completes what was started in the previous chapter in terms of capturing a broader and in-depth assessment of the Arab region's growth and development circumstances from institutional perspectives. The inference from the analysis in the chapter is that emphasising the rule of law, enhancement of democracy, ensuring the independence of the judiciary, and providing equal opportunities at all levels will expand the chances of successful development in the Arab nations and avoid any civil conflicts. This will be an essential factor to help to accelerate the region's integration in the global trends in political, economic, human and cultural development. The next chapter will attempt to undertake a more robust analysis to provide additional evidence to support conclusions made in this chapter through the use of appropriate economic models and econometric estimation approaches.

Chapter 7

The Impact of Economic and Institutions Reform Programmes on Economic Growth: An Econometric Analysis

Chapter 7: The Impact of Economic and Institutions Reform Programmes on Economic Growth: An Econometric Analysis

7.1 Introduction

This chapter contributes to the ongoing debate on the effectiveness of reform programmes in achieving sustained growth/development for developing countries in general and Arab countries in particular. In addition, the chapter provides a more in-depth and robust analysis to support the conclusions from Chapters 5 and 6 regarding the effectiveness of reform programmes. The chapter aims to robustly assess the economic, social and institutional reform effort of the countries by estimating a conditional convergence equation for economic growth. An assessment is made of six sub-samples of the dataset; advanced economies, developing countries, Arab countries, and a comparison between sub-samples of the Arab region - GCC countries, Arab emerging countries and countries that have experienced or are still under civil war⁴⁶.

The setup of the empirical model is primarily driven by the Solow-Swan growth model with the estimation approach following “Barro-type regression” as discussed in the methodology chapter 4 (Barro and Sala-i-Martin, 1995).

The findings in this chapter will illustrate the similarities and differences between these groups to determine the essential components of development, as well as the challenges of growth, as it relates in particular to institutions. Shapley decomposition will be utilised to estimate the relative contribution of each component in the growth model in order to highlight key variables influencing growth in each group. These outcomes will help design an appropriate model of development that can be applied in general to the Arab region, taking into consideration the specific features of each Arab group.

Variables of two key components were used for the analysis – economic reforms and governance quality indicators. As discussed in the previous chapters, the aggregated economic reform indicators were generated using principal component analysis (PCA). The first composite component is **macroeconomic stability reform (M)** incorporating exchange rate

⁴⁶ As mentioned in Chapter four in sub-section 4.6.1 the classification of Arab countries in this chapter will be slightly different than the previous analysis due to homogeneity problems and number of observations of each group.

7.2 Panel Unit Root Tests

Before testing the existence of a long-run cointegrating equilibrium among the variables, the integration properties of each panel have to be examined, since an incorrect transformation of the data may lead to spurious results (Nosier, 2012).

The results of the panel unit root tests in Table 7.1.1 and 7.1.2 are based on two-panel unit root tests for all variables in levels and first differences namely, Levin-Lin-Chu (LLC) and Im-Pesaran-Shin (IPS) (Gengenbach et al., 2006; Im et al., 2003). The panel unit root (with the intercept function) tests statistics confirm that all the series have not a panel unit root in level at the 5% significant level, except for business reform (B) and human capital (H) series which are stationary in the first difference, I (1). First differencing can remove non-stationarity as appears from these two variables (Table 7.1.2). Hence, the co-integration tests can be examined with the intercept only to avoid the potential stationarity of the dependent variable with the trend (Hsiao, 2014; Mátyás and Sevestre, 2008).

Table 7.1.1: Panel unit root tests for variables in level

Tests Variables	Levin, Lin & Chu (LLC)	Im, Pesaran and Shin (IPS)	Final Result
RGDPG	-16.64600 (0.000)	-15.7851 (0.000)	I(0)
M	-3.73479 (0.001)	-2.66146 (0.0039)	I(0)
E	-7.77880 (0.000)	-3.19758 (0.007)	I(0)
B	-7.33402 (0.0000)	0.32819 (0.6286)	I(1)
H	-1.695 (0.0450)	3.70912 (0.9999)	I(1)
P	-8.28406 (0.0000)	1.10117 (0.0486)	I(0)
G	-8.5056 (0.0000)	-3.526 (0.0002)	I(0)

Source: Authors' calculations using EViews 10 and Stata 14.

Table 7.1.2: Panel unit root tests for nonstationary variables in the first difference

Tests Variables	Levin, Lin & Chu (LLC)	Im, Pesaran and Shin (IPS)
B	-10.149 (0.0000)	-4.3132 (0.0000)
H	-19.344 (0.0000)	-18.9102 (0.0000)

Source: Author's calculations using EViews 10.

7.3 Panel Co-Integration Tests

Two different tests of cointegration were performed to explore the co-movement among the variables in the model: the Kao and Pedroni tests of cointegration, taking into consideration the results of the panel unit root tests. Three tests of Pedroni (panel v, panel rho, and group rho) indicate that there is no co-integration among economic growth (RGDPG) and its determinants. In contrast, both the Kao test and four other tests of Pedroni, including panel PP, group PP, panel ADF, and group ADF reject the null hypothesis of no cointegration at the 5% level of significance as illustrated in Table 7.2.

Table 7.2: Results of panel co-integration tests for all countries

Co-integration Tests	Kao Test	Pedroni Test						
		H1: common AR coefficients (within dimension)				H1: individual AR coefficients (between dimension)		
Test Statistic	ADF	Panel v	Panel rho	Panel PP	Panel ADF	Group rho-	Group PP-	Group ADF-
Intercept	3.0977 (0.010)	-3.2097 (0.9993)	5.2588 (1.000)	-5.047 (0.000)	2.11037 (0.0026)	7.24033 (1.000)	-9.1885 (0.000)	1.82218 (0.008)

Source: Authors' own calculations using EViews.

Note: P-values are given in parentheses. Modified Akaike information criterion (MAIC) is used to determine the optimal number of lags to be included in the second stage regression.

According to the Monte Carlo simulation of Pedroni (Arellano and Bond, 1991), the panel ADF and PP, as well as the group ADF and PP, are the most appropriate statistical tests for this model since they are working properly in the case of the middle sample size as illustrated before. Therefore, we can regard the estimation model as being panel co-integrated.

7.4 Diagnostic Testing of CLRM Assumptions

Wooldridge (2010) and Raj and Baltagi (2012) describe three potential econometric problems that could affect panel data analysis of least squares regression models. These are related to the violations of the assumptions of the classical linear regression model (CLRM); multicollinearity, heteroscedasticity, and autocorrelation. Table 7.3 presents the tests for these problems.

Table 7.3: Diagnostic test statistics for study samples

<i>Sample</i>	<i>Heteroscedasticity</i>	<i>Serial correlation</i>		<i>Multicollinearity</i>
	<i>White's test (Prob > chi2)</i>	<i>Durbin– Watson statistic</i>	<i>Wooldridge test (Prob > F)</i>	<i>Variance inflation factor (VIF) - Mean</i>
Advanced Economies	180.38 0.0000	1.6	57.961 0.0000	1.4
Developing Countries	160.97 0.0000	1.3	1.232 0.0038	1.7
Arab Countries	129.22 0.0022	1.9	1.195 0.2928	2.5
Arab Gulf Countries	90.51 0.1224	1.9	0.991 0.3652	3.3
Arab Emerging Economies	77.77 0.1156	1.9	1.025 0.3685	3.4
Arab Countries with civil war	64.84 0.1483	1.9	1.239 0.2844	5.2

Source: Author's calculations using Stata 14

Note: P-values are given in parentheses

Regarding the heteroscedasticity problem, its potential existence is a major concern especially for variance analysis because it could lead to invalidating statistical tests of significance which assume that the modelling errors' variances do not vary with the effects being modelled. Therefore, utilising White test to investigate whether the error variance of each observation is constant or not becomes critical because non-constant variance can cause an estimated model to yield biased results (Hoechle, 2007). Based on p-value the of chi2, the results of the White test indicate that the variance-covariance matrices are heteroscedastic in the first three samples, while the null hypothesis of homoscedasticity could be not rejected in the three Arab sub-group samples. Thus, in order to correct heteroscedasticity in the first three samples, the standardised coefficients, with t-statistics about heteroscedastic-robust standard errors are given in parentheses for the regression for these samples.

Additionally, it is necessary to execute autocorrelation tests in order to find out if the error terms are independently distributed (serial independence), using Durbin-Watson (DW) and Wooldridge tests (Asteriou and Hall, 2016). Only in samples from advanced economies and developing countries, the null hypothesis of the Wooldridge test, of no first-order autocorrelation could be rejected as a significant test statistic, indicates the presence of serial correlation (Drukker, 2003). These results are consistent with Durbin–Watson statistics as shows a positive serial correlation (Table 7.3). For the rest of the samples, the Wooldridge test

is statistically insignificant, and DW statistics also indicate that all the equations in these models are free from the problem of autocorrelation.

Concerning multicollinearity, it occurs when two or more predictor variables in regression models are highly correlated, meaning that one variable can be linearly predicted from the others with a non-trivial degree of accuracy. If two variables are highly collinear, it is very difficult to isolate the impact of each variable on the regressand. This problem can be checked with a correlation coefficient and VIF (Variance Inflation Factor) statistics (Gujarati, 2004;2014).

To assess whether the independent variables are associated with each other, a correlation matrix was performed. Pearson and Spearman's correlation coefficient are used for this purpose. According to Guerreiro et al. (2012) when data consists of continuous dependent and independent variables, Pearson's correlation may be used, but if dependent and independent variables are mixed (continuous and categorical variables in case of dummies), Spearman's correlation may be appropriate in this case. Therefore, since the model include dummy variables such as those representing the financial crisis and Arab spring, Spearman's correlation coefficient was performed for all the independent variables as shown in Appendix 7.1.1, while Pearson's correlation was used in the rest of sub-models as in Appendices 7.1.2 to 7.1.7. Dancy and Reidy report that the best situation is when the independent variables are highly correlated with the dependent variable, but not with each other. They also report that variables are highly correlated with each other when the correlations are 0.8 or above, and in those cases, multicollinearity may exist.

Based on the results in Appendix 7.1, overall the independent variables are not correlated with each other, except in a few cases, particularly the correlation between governance and physical infrastructure (0.71*), and components of physical infrastructure and governance (Appendix 7.1.6).

To robustly test that this problem does not exist, the variance inflation factor (VIF) was estimated. Gujarati (2004) suggests that if a VIF value is higher than 10, there is cause for concern about the existence of multicollinearity, which was not the case for all study samples. In other words, no exact linear relationship exists among explanatory variables included in the model. Lastly, due to the high correlation among components of the governance indicator, as shown in Appendix 7.1.7, a stepwise approach was adopted for the analysis by one by one

instead of a compacted model to avoid any multicollinearity concerns that might affect other coefficients in the model.

7.5 Testing heterogeneity of panel data

Testing the heterogeneity of the countries in this section is based on the discussion in chapter four. In this section, the analysis runs pooled OLS, fixed effects and random effects estimations to check the robustness of the results for each sample in the study. Tables 7.4.1-7.4.6 contain results of the static panel data models from estimating the baseline growth model formalised in equation (7.1).

Table 7.4.1: Test of heterogeneity of panel data models for Advanced Economies

DEPENDENT VARIABLE: (RGDPG)	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Macroeconomic stability (M)	-0.579*** (0.109)	-0.672*** (0.158)	-0.588*** (0.144)
External stability (E)	-0.116** (0.0589)	-0.219* (0.122)	-0.119* (0.0649)
Structural reform (B)	-0.0207 (0.0800)	0.0816 (0.118)	-0.0152 (0.0890)
Human capital (H)	-0.175 (0.367)	-0.332 (0.249)	-0.182 (0.307)
Physical infrastructure (P)	0.869** (0.416)	0.969 (0.689)	0.921 (0.564)
State variable (Lag GDP per capita)	-0.879*** (0.126)	-1.960*** (0.418)	-0.900*** (0.138)
Pop. growth rate	-0.123*** (0.0404)	-0.138** (0.0582)	-0.125*** (0.0432)
oil rent	-0.00214 (0.0189)	-0.0174 (0.0475)	0.00130 (0.0177)
Tech	0.353*** (0.0864)	0.309* (0.207)	0.354*** (0.0913)
Financial crisis Dummy	-0.960*** (0.150)	-0.833*** (0.0941)	-0.955*** (0.101)
Constant	8.345*** (1.296)	18.99*** (4.653)	8.485*** (1.479)
F	18.16***	27.69***	
chi2			341.9***
R-squared	0.331	0.341	0.331
LM test, chi2			0.80
Hausman, chi2		51.98***	
Observations	494	494	494
Countries	26	26	26

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

Source: Author's calculations

In the estimated results in Tables 7.4.1 and 7.4.2 which represents advanced economies and developing countries samples respectively, the overall F-statistics are significant for all panel data models, and therefore the null hypothesis cannot be rejected, that the explanatory variables (taken as a whole) do not explain changes in the dependent variable. Hence, the determinants selected in this study can be considered to sufficiently illustrate variations in the real per capita GDP growth.

Table 7.4.2: Test of heterogeneity of panel data models for Developing Countries

DEPENDENT VARIABLE: (RGDPG)	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Macroeconomic stability (M)	-0.367*** (0.0687)	-0.606*** (0.150)	-0.451*** (0.109)
External stability (E)	0.0649 (0.0482)	0.0926 (0.101)	0.0723 (0.0764)
Structural reform (B)	0.253*** (0.0581)	0.154* (0.115)	0.278*** (0.0653)
Human capital (H)	0.0420 (0.287)	-0.0931 (0.365)	-0.0686 (0.422)
Physical infrastructure(P)	0.0744** (0.0331)	0.662*** (0.167)	0.145** (0.0634)
Pop. growth rate	-0.202*** (0.0523)	-0.174** (0.0813)	-0.181** (0.0869)
oil rent	0.0245 (0.0160)	0.188* (0.0963)	0.0536** (0.0252)
State variable (Lag GDP per capita)	-0.505*** (0.0591)	-1.437*** (0.324)	-0.661*** (0.104)
Tech	-0.0108 (0.0249)	-0.0624 (0.0449)	-0.0275 (0.0378)
Financial crisis Dummy	-0.263** (0.107)	-0.291** (0.116)	-0.271** (0.107)
Constant	5.446*** (0.506)	13.61*** (2.774)	6.810*** (0.899)
F	17.8***	6.257***	
chi2			138.4***
R-squared	0.257	0.225	0.251
LM test, chi2			28.14***
Hausman, chi2		21.24**	
Observations	920	920	920
Countries	50	50	50

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

Source: Author's calculations

In both cases, the Hausman test was significant, and thus, the null hypothesis of the absence of correlation between countries' unobservable individual effects and growth determinants was rejected. This means country-specific heterogeneity is playing a significant role in economic growth in these countries. In this case, the pooled OLS and random effect should not be the

most appropriate the models, regardless of the significance of the LM test, as fixed effect specification outperformed both random effect specification and pooled OLS (Greene, 2012; Mátyás and Sevestre, 2006). Therefore, the fixed-effect model would be the most appropriate for their analysis.

Table 7.4.3: Test of heterogeneity of panel data models for all Arab Countries

DEPENDENT VARIABLE: (RGDPG)	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Macroeconomic stability (M)	-0.380*** (0.125)	-0.193 (0.317)	-0.380*** (0.126)
External stability (E)	0.0294 (0.0758)	0.165 (0.124)	0.0294 (0.0875)
Structural reform (B)	0.311*** (0.104)	0.274* (0.193)	0.311*** (0.0934)
Human capital (H)	-0.900 (0.654)	-1.069* (0.853)	-0.900 (0.859)
Physical infrastructure(P)	-0.144** (0.0681)	-0.115 (0.231)	-0.144** (0.0580)
Pop. growth rate	-0.620*** (0.161)	-0.660*** (0.213)	-0.620*** (0.170)
oil rent	-0.0137 (0.0255)	0.0314 (0.0689)	-0.0137 (0.0125)
Tech	-0.141*** (0.0369)	-0.0425 (0.0420)	-0.141*** (0.0438)
State Variable (Lag GDP per capita)	-0.144 (0.121)	-1.201** (0.526)	-0.144** (0.0682)
Financial crisis Dummy	-0.268 (0.176)	-0.282 (0.204)	-0.268 (0.214)
Arab spring Dummy	-0.527*** (0.161)	-0.565** (0.217)	-0.527** (0.215)
Constant	-0.760 (1.959)	1.394*** (0.235)	-0.760 (1.267)
F	10.08***	5.694***	
chi2			1266***
R-squared	0.317	0.19	0.317
LM test, chi2			22.72***
Hausman, chi2		9.75	
Observations	279	279	279
Countries	16	16	16

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

Source: Author's calculations

Regarding Table 7.4.3 for the whole Arab sample, as in previous samples, the F-statistics are significant for all panel data models. Concerning the pooled OLS model that ignores the potential for unobserved heterogeneity, and thus overcomes the panel nature of the data

altogether, the estimated LM test indicates the rejection of the null hypothesis of the irrelevance of unobservable individual effects as ($\text{var}(u) > 0$) and implied that a pooled OLS regression would not be the most appropriate. Furthermore, the Hausman test was insignificant, and the null hypothesis of the absence of correlation between countries' unobservable individual effects and growth determinants was not rejected, and therefore the random effect model was most suitable. Thus, the estimated relationship in equation (7.1) is a panel model with random effects for all Arab countries.

Table 7.4.4: Test of heterogeneity of panel data models for the sub-sample Arab Gulf Countries

DEPENDENT VARIABLE: (RGDPG)	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Macroeconomic stability (M)	-0.376 (0.310)	-0.275 (0.555)	-0.239 (0.222)
External stability (E)	0.164 (0.366)	0.471* (0.205)	0.310 (0.268)
Structural reform (B)	0.411** (0.203)	0.169 (0.396)	0.339** (0.167)
Human capital (H)	-1.103*** (0.375)	-1.094** (0.302)	-1.215*** (0.244)
Physical infrastructure(P)	1.445* (0.968)	0.519 (1.437)	1.198** (0.528)
Pop. growth rate	-0.812*** (0.271)	-0.609** (0.208)	-0.625*** (0.207)
oil rent	0.410** (0.245)	0.571 (0.371)	0.370*** (0.132)
State variable (Lag GDP per capita)	-0.591 (0.471)	-1.067 (1.175)	-0.615* (0.347)
Tech	-0.161** (0.0618)	-0.0820 (0.0968)	-0.158*** (0.0588)
Financial crisis Dummy	-0.372 (0.299)	-0.412 (0.235)	-0.457 (0.286)
Constant	5.794 (6.391)	9.389 (11.74)	7.126 (4.820)
F	6.142***	3.68***	
chi2			46.92***
R-squared	0.506	0.375	.317
LM test, chi2			0.00
Hausman, chi2		3.35	
Observations	106	113	113
Countries	6	6	6

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

Source: Author's calculations

The Arab sub-samples estimations as presented in Tabled 7.4.4 - 7.4.6 shows that all models for Arab Gulf countries and emerging Arab economies are overall significant based on the F

and chi2 statistics, but for the sample of Arab countries with civil war, only the pooled OLS model is statistically significant while fixed and random effect models are not significant. For the three cases, there is evidence of potential unobserved heterogeneity across countries owing to the insignificance of the estimated chi2 of the Lagrange Multiplier (LM). Consequently, the null hypothesis cannot be rejected that variances across entities are zero ($\text{var}(u) = 0$). On the other hand, the Hausman test for all these samples was statistically insignificant, which confirms that there is probably no observed individual heterogeneity.

Table 7.4.5: Test of heterogeneity of panel data models for the sub-sample of Arab Emerging Economies

DEPENDENT VARIABLE: (RGDPG)	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Macroeconomic stability (M)	-0.561* (0.291)	0.00190 (0.462)	-0.148 (0.388)
External stability (E)	0.453** (0.210)	0.524 (0.279)	0.442 (0.272)
Structural reform (B)	0.473*** (0.164)	0.327* (0.203)	0.294* (0.168)
Human capital (H)	0.336* (0.238)	0.236 (0.149)	0.316** (0.127)
Physical infrastructure(P)	-0.436* (0.281)	0.259 (0.491)	0.00458 (0.210)
Pop. growth rate	-0.188 (0.303)	-0.303** (0.0965)	-0.371*** (0.0759)
oil rent	0.0380 (0.0459)	-0.169 (0.0885)	0.0158 (0.0301)
Tech	-0.132 (0.0914)	0.0187 (0.0509)	0.0546 (0.115)
State Variable (Lag GDP per capita)	-0.784 (0.733)	-2.108* (1.148)	-1.129 (0.725)
Arab spring Dummy	-1.133*** (0.165)	-1.371** (0.351)	-1.360*** (0.318)
Constant	8.954 (10.22)	0.790 (0.396)	11.16 (10.28)
F		5.66***	
chi2	182.4***		70.79***
R-squared	0.446	0.372	0.436
LM test, chi2			0.00
Hausman, chi2		0.78	
Observations	100	100	100
Countries	5	5	5

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

Source: Author's calculations

Table 7.4.6: Test of heterogeneity of panel data models for the sub-sample of Arab Countries with civil war

DEPENDENT VARIABLE: (RGDPG)	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Macroeconomic instability (M)	-0.229 (0.145)	-0.203 (0.256)	-0.449** (0.196)
External stability (E)	-0.130 (0.0841)	0.137 (0.202)	-0.0476 (0.114)
Structural reform (B)	-0.294** (0.122)	-0.386 (0.230)	-0.0946 (0.107)
Physical infrastructure(P)	-0.0859 (0.132)	0.415 (0.384)	0.0569 (0.0959)
Pop. growth rate	-0.681* (0.407)	-0.303 (0.344)	-0.433* (0.227)
oil rent	0.0572 (0.0828)	0.216 (0.138)	0.127 (0.102)
State Variable (Lag GDP per capita)	-0.0899 (0.277)		-7.79e-05* (4.48e-05)
Arab spring Dummy		0.303* (0.136)	0.281* (0.164)
Human capital (H)	0.00645 (0.115)	-0.300 (0.155)	-0.227 (0.146)
Constant	-4.102 (4.827)	0.339 (0.706)	-4.728** (2.307)
F		1.01	
chi2	31.1***		12.99
R-squared		0.085	
LM test, chi2			0.00
Hausman, chi2		1.01	
Observations	101	101	101
Countries	6	6	6

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

Source: Author's calculations

It should be noted that the results of the heterogeneity of the countries are consistent with the previous analysis in Chapters five and six. There are many differences in several indicators among developing countries and within industrialised nations. Arab countries share some similar characteristics; however, differences are still recognised. For the various Arab sub-groups, the countries in each of the three groups are very similar with very limited variations, which again confirms the confidence in the classification adopted by the study. Therefore, the fixed-effect model is appropriate for both advanced economies and developing countries, while the random effect model is for the Arab sample, and the pooled OLS is appropriate for the three Arab groups. Introducing governance variables into estimation did not change this

classification except for the whole Arab sample as the fixed effect became a much better fitting model than the random effect.

Consequently, based on the discussion in chapter 4.7.4, regarding the endogeneity concerns of institutional variables, a bias correction to the Least Square Dummy Variable (LSDV) model is applied for advanced economies, developing and Arab countries, while pooled OLS is the most appropriate for the 3 Arab sub-samples.

7.6 Panel estimated results

In this section, the estimation of the growth model is based on equation (7.1) and the results of the heterogeneity test as presented in the previous section. Tables 7.5.1-7.5.6 contain effects of the impact of reform components on economic growth for the six samples of the study. In each Table col. (1) represents the basic model as in the selected model in Tables 7.4.1-7.4.6, while col. (2) to (6) display the components of the aggregated indicators, which are of more interest and more useful for policy. In col. (2), we examine the elements of macroeconomic stability. Similarly, col. (3) assesses the components of external stability, col. (4) structural reforms, col. (5) human capital and col. (6) Physical infrastructure components. The final col. (7), presents the value of Shapley decomposition showing the contributions of each key component to the dependent variable.

To examine the influence of reforms in addition to governance variables, Tables 7.6.1-7.6.5 estimate the effect of the aggregated governance variable integrated into the basic model in col. (1). While col. (2) to (7) present the impact of each respective individual governance element in order to avoid the endogeneity problem and the high multicollinearity among governance factors. Finally, col. (8) demonstrates the contributions of reform component after introducing the governance portion into the model through utilising the Shapley approach.

7.6.1 Estimated panel data models for Advanced Economies

In the basic model, col. (1) of Table 7.5.1, the inverse relationship between GDP per capita growth rate and the coefficient of the lagged GDP per capita implies that convergence occurs at the rate of about 2% per year. This effect is substantial in comparison with the other effects, that is, conditional convergence can have significant influences on growth rates.

The basic model (col. (1)) also indicates that only two components of reform are statistically significant. The stabilisation effect was the most potent factor in both internal (M) or external (E) stability. However, the levels of significance and signs of coefficients were not the same.

While the macroeconomic instability (M) was negative and associated with growth at a high significance level, the external stability (E) was negative and significant only at 10%. In the same column; although the rest of the socioeconomic factors were not significant, some of their elements have an influential effect on economic growth as will be illustrated later.

Additionally, two other variables were statistically significant not only in the basic model but also in all sub-models for advanced countries; High-technology exports as a percentage of manufactured exports (Tech) appears to have a positive and statistically significant relationship, suggesting that devoting resources towards technological innovation encourages more growth. The other factor was the financial crisis dummy variable (for years 2008, 2009 & 2010), which had a highly significant negative effect (-0.83) on economic growth. This supports the extremely sharp decline in growth for this group of countries, as discussed in Figure 5.3 in chapter 5. The dummy indicates whether there were financial crisis effects present in a particular period, as it equals one for years 2008, 2009, 2010 and is zero for other years. The coefficient of the variable was -0.83 in basic model 1 and the same range in other models indicating that the financial crisis has a negative impact on annual economic growth rates. The estimate in col. (1) indicates that, with other variables held constant, the financial crisis period had a negative impact on growth, with the annual growth rate falling by 56%⁴⁸. The result is consistent with most of the literature on the effect of the financial crisis on economic growth such as Barrios et al. (2010); Carlson et al. (2011); OECD (2013).

Regarding the first part of economic reform and given the way that the macroeconomic instability (M) was defined, the signs of the coefficients are predicted to be negative. The result (-0.672) in col. (1) of Table 7.5.1 indicates that a 1% change in macroeconomic instability in advanced countries will lead to about 0.67% fall in economic growth. Four of the five macroeconomic instability elements are significant at least at the 10% level. First, the exchange rate, which is negative and significant at the 5% level. The coefficient of the budget deficit is also negative and significant, and contributes to reducing growth by about 0.12%, while high and persistent unemployment in advanced economies is seen as a barrier to economic growth with an increase of the unemployment rate by 1% leading to a 1.11% fall in growth. However,

⁴⁸ The interpretation of the financial crisis dummy coefficient is based on the difference between the value 1 and the exponents of the absolute value of the estimated coefficient log-odds (i.e. taking their antilog) and multiplied by 100 (Gujarati, 2014, p. 55).

Based on that $[\exp(\beta) - 1]100$, so $[\exp(-0.833) - 1]100 = -56\%$.

the public debt was working in the opposite direction by stimulating economic growth by 0.22%.

Table 7.5.1: Estimated models of reform and its components on economic growth for advanced economies

VARIABLES	(1) BASIC MODEL	(2) M	(3) E	(4) B	(5) H	(6) P	(7) Shapley Value %R2
Macroeconomic instability (M)	-0.672*** (0.158)		-0.71*** (0.162)	-0.59*** (0.140)	-0.60*** (0.147)	-0.63*** (0.161)	14
Exchange rate		-0.828** (0.310)					
Deficit		-0.116** (0.0510)					
Public debt		0.221* (0.282)					
Inflation		-0.0119 (0.0515)					
Unemployment		-1.11*** (0.273)					
External stability (E)	-0.219* (0.122)	-0.156 (0.113)		-0.144 (0.129)	-0.252* (0.130)	-0.168 (0.121)	1.1
Current account			-0.0290 (0.0486)				
Terms of trade			-0.936 (0.672)				
Diversification index			0.905 (0.648)				
Structural reform (B)	0.0816 (0.118)	0.0947 (0.115)	0.101 (0.121)		0.0485 (0.117)	0.0889 (0.119)	3.5
FDI				0.0795* (0.0510)			
credit to the private sector				-0.264** (0.112)			
concentration index				-0.330 (0.502)			
Human capital (H)	-0.332 (0.249)	-0.466* (0.235)	-0.281 (0.260)	-0.217 (0.314)		-0.399 (0.234)	6.5
health expenditure					-1.201** (0.495)		
school enrolment					0.00288 (0.0134)		
life expectancy					0.0920** (0.0713)		
scientific articles published					1.113*** (0.167)		
Physical infrastructure(P)	0.969 (0.689)	1.512* (0.803)	0.789 (0.656)	0.672 (0.760)	0.906 (0.838)		4.2
Fixed telephone						0.449* (0.224)	
Improved water source						0.330** (0.135)	
Improved sanitation facilities						-0.48*** (0.0941)	
Lag GDP per capita	-1.960*** (0.418)	-3.095*** (0.504)	-2.122*** (0.417)	-1.678*** (0.501)	-1.987*** (0.684)	-2.064*** (0.588)	16.2
Pop. growth rate	-0.138** (0.0582)	-0.147** (0.0615)	-0.134** (0.0571)	-0.120** (0.0526)	-0.131** (0.0547)	-0.127** (0.0513)	3.8
Oil rent to GDP	-0.0174 (0.0475)	-0.0358 (0.0391)	-0.0186 (0.0442)	-0.0305 (0.0457)	-0.0614 (0.0496)	0.0837 (0.0563)	1.2
Tech	0.309* (0.207)	0.311* (0.244)	0.363* (0.191)	0.304* (0.193)	0.235* (0.211)	0.333* (0.210)	6.1
Financial crisis Dummy	-0.833*** (0.0941)	-0.876*** (0.0876)	-0.802*** (0.0936)	-0.802*** (0.0970)	-0.778*** (0.0887)	-0.800*** (0.108)	43.3
Constant	18.99*** (4.653)	32.21*** (5.343)	25.84*** (5.956)	16.88*** (5.849)	13.96*** (4.379)	34.34*** (8.121)	
Observations	494	494	494	494	494	494	
Countries	26	26	26	26	26	26	
R-squared	34.1	38.8	34.5	37.4	36.8	37.5	34.1
F statistic	27.69***	21.75***	27.52***	27.05***	42.42***	32.23***	

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

On the other hand, although the aggregate external stability (E) variable was negatively significant at 1% (col. (1)), none of its elements seems to be significant in explaining GDP growth as shown in col. (3). Regarding structural reforms (B), the aggregate is not significant, but the coefficients of the two components are significant as in col. (4). The coefficient of inward foreign direct investment as a percentage of GDP (FDI) is positive and significant at 10%. However, in the same column, credit to the private sector variable, which is used as a measure of the level of financial sector development, is negative and statistically significant.

With reference to human capital (H), its aggregate indicator is insignificant, but three components; public health expenditure, life expectancy, and scientific articles published are statistically significant at 5% and 1% respectively. The coefficient of life expectancy is positive as expected and implies each additional year in life expectancy contributes 0.1% to economic growth. The coefficient of the numbers of scientific articles; used as a proxy for R&D and innovation, in developed economies is positive and highly significant, with a proportional change in growth is as high as 1.1%.

Concerning physical infrastructure (P), while the aggregate variable was not significant, all its elements were significant but with opposite signs. For instance, fixed telephone subscriptions and improved drinking water were positive and statistically significant as expected. In contrast, improved sanitation facilities were highly significant, but with a negative coefficient sign and reduced growth by 0.48%.

Finally, regarding institutions variables as presented in Table 7.6.1, adding governance component (G) variable to the basic model as in col. (1) through bias correction methods, change the external stability coefficient to insignificant, which seems to be more reasonable. The aggregate governance variable and all its components were positive and strongly significant except for the control of corruption as seen in col. (2) to (7) of Table 7.6.1.

Table 7.6.1: Estimated models of reform with the inclusion of governance components on economic growth for advanced economies

	(1) Basic Model With G	(2) VA	(3) PS	(4) GE	(5) RQ	(6) RL	(7) CC	(8) Shapley Value (%) (38.2)
Macroeconomic instability (M)	-0.52*** (0.130)	-0.52*** (0.130)	-0.54*** (0.128)	-0.50*** (0.129)	-0.52*** (0.129)	-0.56*** (0.126)	-0.53*** (0.130)	12.9
External stability (E)	-0.158 (0.102)	-0.169* (0.100)	-0.160 (0.100)	-0.158 (0.101)	-0.159 (0.101)	-0.164 (0.101)	-0.163 (0.102)	1
Structural reform (B)	0.0658 (0.0989)	0.0694 (0.0994)	0.0760 (0.0984)	0.0613 (0.0980)	0.0510 (0.0985)	0.0639 (0.0987)	0.0604 (0.0987)	3.2
Human capital (H)	-0.484 (0.448)	-0.503 (0.448)	-0.422 (0.445)	-0.457 (0.452)	-0.482 (0.448)	-0.488 (0.446)	-0.476 (0.449)	6.1
Physical infrastructure(P)	0.843 (0.714)	0.795 (0.723)	0.954 (0.711)	0.750 (0.718)	0.826 (0.721)	0.883 (0.720)	0.674 (0.714)	4.1
Governance(G)	0.298*** (0.104)							2.4
Voice and accountability		0.512** (0.254)						
Political stability			0.458*** (0.173)					
Government Effectiveness				0.392* (0.227)				
Regulatory quality					0.431** (0.201)			
Rule of law						0.653** (0.281)		
Control of Corruption							0.213 (0.181)	
lag GDP growth	0.158*** (0.0439)	0.17*** (0.0433)	0.15*** (0.0431)	0.17*** (0.0443)	0.17*** (0.0443)	0.17*** (0.0438)	0.17*** (0.0435)	
Lag GDP per capita	-1.99*** (0.396)	-1.90*** (0.397)	-1.80*** (0.396)	-2.06*** (0.402)	-2.05*** (0.404)	-2.16*** (0.404)	-1.81*** (0.395)	17.1
Pop. growth rate	-0.13*** (0.0375)	-0.13*** (0.0377)	-0.12*** (0.0369)	-0.13*** (0.0373)	-0.13*** (0.0377)	-0.13*** (0.0374)	-0.13*** (0.0373)	3.7
Oil rent to GDP	0.00265 (0.0397)	-0.0102 (0.0399)	0.00065 (0.0400)	0.00360 (0.0410)	-0.0102 (0.0396)	-0.00563 (0.0398)	-0.00728 (0.0382)	1
Tech	0.256 (0.208)	0.280 (0.207)	0.222 (0.207)	0.248 (0.207)	0.255 (0.206)	0.304 (0.206)	0.283 (0.207)	6
Financial crisis Dummy	-0.71*** (0.112)	-0.69*** (0.113)	-0.70*** (0.110)	-0.71*** (0.112)	-0.72*** (0.110)	-0.70*** (0.113)	-0.71*** (0.111)	42.4
Observations	494	494	494	494	494	494	494	
Countries	26	26	26	26	26	26	26	

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

7.6.2 Estimated panel data models for Developing Countries

The estimated results for developing countries are presented in Table 7.5.2. The coefficients of the lagged GDP per capita are negative and significant in all models. The estimated coefficient of -1.43 for this variable in the col. (1) implies that convergence occurs at a rate of about 1.43% per year.

Table 7.5.2: Estimated models of reform and its components on economic growth for Developing Countries

	(1) Basic Model	(2) M	(3) E	(4) B	(5) H	(6) P	(7) Shapley Value (%) R2
Macroeconomic instability (M)	-0.606*** (0.150)		-0.599*** (0.106)	-0.560*** (0.107)	-0.588*** (0.105)	-0.592*** (0.106)	10.5
Exchange rate		0.0156 (0.045)					
Deficit		-0.120*** (0.035)					
Public debt		-0.180* (0.093)					
Inflation		-0.170*** (0.039)					
Unemployment		-0.324** (0.134)					
External stability (E)	0.0926 (0.101)	0.107 (0.089)		0.108 (0.0854)	0.0821 (0.0879)	0.0697 (0.0871)	2.8
Current account			-0.0168 (0.0317)				
External debt			-0.106* (0.085)				
International reserves			0.0893 (0.0905)				
Diversification index			-0.141 (0.656)				
Structural reform(B)	0.154* (0.115)	0.151* (0.095)	0.122 (0.101)		0.143 (0.0964)	0.180* (0.095)	8.1
FDI				0.088** (0.037)			
Credit to the private sector				-0.0178 (0.116)			
Concentration index				0.572** (0.222)			
Human capital(H)	-0.0931 (0.365)	-0.165 (0.271)	-0.0946 (0.274)	-0.114 (0.270)		-0.114 (0.270)	2.6
Health expenditure					-0.167*** (0.059)		
School enrolment					-0.0068 (0.0061)		
Life expectancy					0.043* (0.024)		
Scientific articles published					0.0038* (0.073)		
Physical infrastructure(P)	0.662*** (0.167)	0.598*** (0.133)	0.620*** (0.135)	0.673*** (0.130)	0.590*** (0.144)		6
Fixed telephone						0.207** (0.140)	
Improved water source						0.050*** (0.015)	
Access to electricity						0.004 (0.010)	
Improved sanitation						0.010 (0.016)	
Lag GDP per capita	-1.437*** (0.324)	-1.439*** (0.236)	-1.449*** (0.224)	-1.513*** (0.253)	-1.455*** (0.244)	-1.513*** (0.232)	40
Pop. growth rate	-0.174** (0.0813)	-0.171*** (0.0456)	-0.171*** (0.0457)	-0.166*** (0.0454)	-0.190*** (0.0456)	-0.175*** (0.0455)	20.6
Oil rent to GDP	0.188* (0.0963)	0.184*** (0.0493)	0.187*** (0.0499)	0.168*** (0.0497)	0.201*** (0.0496)	0.198*** (0.0499)	2.5
Tech	-0.0624 (0.0449)	-0.0695* (0.0387)	-0.0605 (0.0387)	-0.0635* (0.0383)	-0.0659* (0.0384)	-0.0641 (0.0385)	3.8
Financial crisis Dummy	-0.291** (0.116)	-0.307*** (0.0979)	-0.305*** (0.0979)	-0.289*** (0.0968)	-0.312*** (0.0967)	-0.291*** (0.0969)	3.7
Constant	13.61*** (2.774)	15.17*** (2.220)	13.96*** (1.950)	14.98*** (2.111)	3.281 (5.550)	-7.627** (3.819)	
Adjusted R2	22.0	26.6	25.8	26.8	26.9	26.2	22.0
F statistic	6.257***	9.447***	9.580***	11.09***	10.62***	9.817***	
Observations	920	920	920	920	920	920	
Countries	50	50	50	50	50	50	

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

The results of the basic model, as seen in col. (1) highlights the significance of the three components of socioeconomic reforms on economic growth with the predicted signs. Macroeconomic stability, structural reform and physical infrastructure were significant at a different level with 1% for the first and third, and 10% for the second variable. External stability and human capital were not significant in the basic model, but some of their elements have highly significant effects on economic growth. Additionally, the dummy variable of the financial crisis years was negative and statistically significant. That is, with all other variables held constant, the financial crisis years led to a decrease in annual growth by 25.2%⁴⁹ compared to the years without a crisis. The oil rent as a percentage of GDP, which has a significant direct effect on growth by 0.19%.

Given the importance of macroeconomic stability on growth; as appears in the magnitude of the coefficient (-0.61), all sub-elements, except exchange rate, were statistically significant with the expected sign as presented in col. (2). The government deficit and the public debt contributed negatively to economic growth in developing countries with estimated coefficients of -0.12 and -0.18, respectively. Furthermore, the consumer price index and unemployment have a profoundly harmful effect on growth, while unemployment reduced growth by 0.32%, inflation reduced it by 0.17%.

With respect to the elements of external stability (col. (3)), only external debt as a percentage of export was highly significant, and the findings appear to show that external debt had a direct adverse effect on output growth for the period covered. In elements of the structural reforms (B) as seen in col. (4), inward foreign direct investment as a percentage of GDP (FDI) positively impacts on growth by 0.1% and is statistically significant at 5%. The export concentration index was also significantly positive, with estimates showing that countries with a high concentration level in exports improve their economic growth by 0.57%.

The aggregate human capital (H) indicator is insignificant. Nevertheless, three of its components; life expectancy, scientific articles published, and public health expenditure were statistically significant at least at 10% level. While the coefficients of life expectancy and scientific articles published were positive, health expenditure has a negative sign. The physical infrastructure (P) aggregate variable is positive and significant. The estimated coefficient means an increase in one unit of infrastructure increases growth by 0.66%. In addition, two of

⁴⁹ $[\exp(-0.291) - 1]100 = - 25.2 \%$

its components; access to improved water sources and telephone subscriptions were positive and highly significant at 1% and 5% level, respectively.

The remarkable result to emerge from cols. (1) and (7) in Table 7.6.2 was that the coefficient of governance (G) indicator is positive and statistically significant based on bias correction methods with Fixed Effects. Out of the six governance indicators, only two components; government effectiveness (GE) and control of corruption (CC) have a statistically significant effect on growth. GE, which captures the ability of governments to design and implement sound policies, contributed to the economic outcome by 0.53%, while CC seems to positively contribute to growth by about 0.22%.

Table 7.6.2: Estimated models of reform with the inclusion of governance components on economic growth for Developing Countries sample

VARIABLES	(1) Basic Model-with G	(2) VA	(3) PS	(4) GE	(5) RQ	(6) RL	(7) CC	(8) Shapley Value (%) (23.3)
Macroeconomic instability (M)	-0.45***	-0.48***	-0.50***	-0.45***	-0.48***	-0.48***	-0.46***	9.4
	(0.125)	(0.122)	(0.122)	(0.119)	(0.122)	(0.120)	(0.123)	
External stability (E)	0.105	0.106	0.104	0.0856	0.105	0.104	0.0976	2.7
	(0.0779)	(0.0781)	(0.0788)	(0.0799)	(0.0776)	(0.0775)	(0.0790)	
Structural reform (B)	0.0971	0.129	0.107	0.0965	0.0913	0.0980	0.0956	7.4
	(0.110)	(0.117)	(0.112)	(0.111)	(0.110)	(0.109)	(0.111)	
Human capital (H)	-0.210	-0.194	-0.205	-0.205	-0.203	-0.208	-0.207	2.4
	(0.282)	(0.283)	(0.278)	(0.282)	(0.281)	(0.282)	(0.282)	
Physical infrastructure(P)	0.656***	0.599***	0.628***	0.701***	0.639***	0.646***	0.651***	5.6
	(0.144)	(0.139)	(0.142)	(0.150)	(0.142)	(0.145)	(0.142)	
Governance(G)	0.164*							2.7
	(0.111)							
Voice and accountability		0.269						
		(0.188)						
Political stability			-0.00130					
			(0.122)					
Government Effectiveness				0.532**				
				(0.212)				
Regulatory quality					0.117			
					(0.181)			
The rule of law						0.180		
						(0.242)		
Control of Corruption							0.222*	
							(0.154)	
lag GDP growth	0.255***	0.255***	0.256***	0.251***	0.256***	0.257***	0.256***	
	(0.0353)	(0.0351)	(0.0351)	(0.0357)	(0.0349)	(0.0352)	(0.0355)	
Lag GDP per capita	-1.56***	-1.48***	-1.51***	-1.64***	-1.53***	-1.55***	-1.51***	40
	(0.269)	(0.253)	(0.261)	(0.277)	(0.263)	(0.272)	(0.257)	
Pop. growth rate	-0.153***	-0.153***	-0.147***	-0.144***	-0.150***	-0.149***	-0.149***	20.4
	(0.0460)	(0.0459)	(0.0464)	(0.0467)	(0.0464)	(0.0463)	(0.0466)	
Oil rent to GDP	0.188***	0.185***	0.182***	0.192***	0.185***	0.187***	0.184***	2.8
	(0.0604)	(0.0602)	(0.0599)	(0.0603)	(0.0604)	(0.0606)	(0.0601)	
Tech	-0.0668*	-0.0677*	-0.0689*	-0.0700*	-0.0691*	-0.0685*	-0.0671*	3.7
	(0.0391)	(0.0392)	(0.0382)	(0.0391)	(0.0393)	(0.0392)	(0.0395)	
Financial crisis Dummy	-0.225**	-0.221**	-0.232**	-0.225**	-0.231**	-0.229**	-0.231**	3.4
	(0.100)	(0.0995)	(0.0989)	(0.0996)	(0.0991)	(0.0990)	(0.0992)	
Observations	920	920	920	920	920	920	920	
Countries	50	50	50	50	50	50	50	

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

7.6.3 Estimated panel data models for all Arab Countries

As discussed previously, the random effect estimate is the most appropriate estimate for the whole Arab countries sample. In col. (1) of Table 7.5.3, the estimated coefficients of the lagged GDP per capita is significant with a negative sign. Their magnitude implies that convergence occurs at the rate of about 0.14% per year.

As seen in col. (1) the basic model emphasises the significance of reform components on economic growth. Macroeconomic instability (M) and structural reform (B) were highly significant, at 1% with the expected signs. However, the physical infrastructure (P) variable was significant (5% level) but with an unexpected inverse impact on growth. Remarkably, the oil rent variable did not have a significant effect on economic output in the Arab region as a whole in the basic model. Nevertheless, the impact becomes substantial but still negative in col. (4) with the inclusion of the components of structural reform (B). It implied that an increase in oil rent as a percentage of GDP would lead to reducing growth by 0.04% annually. The negative and significant coefficient of the Arab spring years' dummy variable means that the Arab spring period led to a decrease in annual growth by about 41%⁵⁰ compared to the years prior to 2011. The second control variable was high-technology exports as a percentage of manufactured exports, which appear to also have an unexpected negative and statistically significant relationship with growth.

Regarding the macroeconomic instability elements in col. (2), only the coefficients of the exchange rate and budget deficit are statistically significant and have the expected negative relationship with a similar impact on growth (0.07%). Interestingly, the current account surplus as in col. (3) has a similar effect but in the opposite direction. Inward foreign direct investment as a percentage of GDP (FDI) is the most significant variable in the structural reform indicator in promoting growth in the Arab world. A 1% change in FDI on average leads to a 0.13% increase in growth. Furthermore, although the coefficient of aggregate human capital (H) indicator was insignificant, the health expenditure component was statistically significant and negatively affect GDP per capita by 0.45%, while none of the physical infrastructure (P) indicator elements was statistically significant as presented in col. (6).

⁵⁰ $[\exp(-0.53) - 1]100 = -41\%$

Table 7.5.3: Estimated models of reform and its components on economic growth for all Arab countries

	(1) BASIC MODEL	(2) M	(3) E	(4) B	(5) H	(6) P	(7) Shapley Value (%) R2
Macroeconomic instability (M)	-0.380*** (0.126)		-0.263** (0.132)	-0.375** (0.147)	-0.357*** (0.120)	-0.373*** (0.121)	6.5
Exchange rate		-0.065** (0.0288)					
Deficit		-0.078* (0.0564)					
Public debt		-0.0472 (0.0961)					
Inflation		-0.0298 (0.0693)					
Unemployment		-0.113 (0.167)					
External stability (E)	0.0294 (0.0875)	0.0731 (0.123)		-0.00606 (0.0928)	0.00360 (0.0803)	0.0247 (0.111)	1.3
Current account			0.080*** (0.0308)				
External debt			0.0278 (0.0634)				
International reserves			-0.0501 (0.0660)				
Diversification index			0.0605 (0.798)				
Structural reform(B)	0.311*** (0.0934)	0.260*** (0.0848)	0.311** (0.122)		0.310*** (0.0848)	0.261** (0.118)	5
FDI				0.132*** (0.0460)			
Credit to the private sector				-0.0573 (0.123)			
Concentration index				-0.088 (0.186)			
Human capital(H)	-0.900 (0.859)	-1.033 (0.884)	-1.004 (0.932)	-1.007 (0.893)		-0.992 (0.929)	2.3
Health expenditure					-0.449** (0.179)		
School enrolment					-0.0266 (0.0393)		
Life expectancy					-0.0341 (0.0334)		
Scientific articles published					0.267 (0.354)		
Physical infrastructure(P)	-0.144** (0.0580)	-0.145** (0.0682)	-0.120* (0.0615)	-0.0864 (0.0569)	-0.0409 (0.0894)		7.5
Fixed telephone						0.087 (0.181)	
Improved water source						-0.230 (0.595)	
Access to electricity						-0.016 (0.012)	
Improved sanitation						0.005 (0.011)	
Lag GDP per capita	-0.144** (0.0682)	-0.141* (0.0736)	-0.158* (0.0866)	-0.108 (0.0721)	-0.128 (0.0805)	-0.178** (0.081)	22.8
Pop. growth rate	-0.620*** (0.170)	-0.641*** (0.173)	-0.645*** (0.172)	-0.653*** (0.181)	-0.596*** (0.189)	-0.644*** (0.181)	41.8
Oil rent to GDP	-0.0137 (0.0125)	-0.0122 (0.0147)	-0.0163 (0.0139)	-0.0365** (0.0155)	-0.0140 (0.0123)	-0.0180 (0.0199)	3.1
Tech	-0.141*** (0.0438)	-0.135*** (0.0458)	-0.128*** (0.0418)	-0.128*** (0.0392)	-0.131*** (0.0422)	-0.141*** (0.0433)	5.2
Arab Spring Dummy	-0.527** (0.215)	-0.467* (0.242)	-0.446* (0.253)	-0.449* (0.240)	-0.367 (0.265)	-0.437* (0.257)	4.6
Constant	-0.760 (1.267)	0.106 (1.507)	-0.458 (1.803)	-1.167 (1.288)	8.936 (9.983)	3.695 (2.420)	
Observations	279	279	279	279	279	279	
Adjusted R2	31.7	31.3	31.7	31.6	33.2	31.3	31.7
F statistic	1266***	64498***	4912***	1456***	3240***	4071***	
Countries	16	16	16	16	16	16	

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

The assessment of the quality of governance indicators on GDP per capita growth in the Arab region is illustrated in Table 7.6.3. It is worth noting that the inclusion of the governance aggregate variable to the basic model as in col. (1) reduced the magnitudes of the significant positive coefficient of structural reform indicator and changed the level of its significance from 1% to 10%. At the same time, the magnitude of the negative factors such as human capital and physical infrastructure increased and became more significant.

Table 7.6.3: Estimated models of reform with the inclusion of governance components on economic growth for whole Arab states sample

	(1) BASIC MODEL WITH-G	(2) VA	(3) PS	(4) GE	(5) RQ	(6) RL	(7) CC	(8) Shapley Value (%) (35.4)
Macroeconomic instability (M)	-0.0154 (0.202)	-0.33*** (0.124)	-0.202 (0.141)	-0.190 (0.199)	-0.307** (0.125)	-0.277* (0.149)	0.411 (0.362)	5.7
External stability (E)	0.0593 (0.0904)	-0.00334 (0.0808)	0.0634 (0.0829)	0.0483 (0.0885)	-0.0147 (0.0767)	0.0230 (0.0784)	0.0705 (0.101)	1.1
Structural reform (B)	0.210* (0.114)	0.278*** (0.102)	0.284*** (0.101)	0.129 (0.152)	0.235** (0.104)	0.258*** (0.0995)	0.166 (0.142)	4.9
Human capital (H)	-1.361* (0.705)	-0.825 (0.619)	-1.055 (0.642)	-1.016 (0.652)	-0.813 (0.612)	-0.811 (0.619)	-1.837** (0.879)	2.1
Physical infrastructure(P)	-0.356*** (0.137)	-0.104 (0.0683)	-0.235** (0.0983)	-0.188* (0.105)	-0.110 (0.0671)	-0.149 (0.0999)	-0.33*** (0.124)	5.9
Governance(G)	0.782** (0.338)							5.8
Voice and accountability		0.0922 (0.352)						
Political stability			0.420* (0.218)					
Government Effectiveness				1.016 (0.852)				
Regulatory quality					0.355 (0.399)			
Rule of law						0.248 (0.354)		
Control of Corruption							2.517*** (0.956)	
lag GDP growth	-0.496*** (0.162)	-0.224* (0.120)	-0.285** (0.121)	-0.438** (0.198)	-0.311** (0.150)	-0.278** (0.134)	-0.60*** (0.196)	
Lag GDP per capita	0.310*** (0.100)	0.185** (0.0920)	0.185** (0.0735)	0.246** (0.0978)	0.204** (0.0799)	0.172** (0.0702)	0.342*** (0.113)	20.4
Pop. growth rate	-0.580*** (0.158)	-0.55*** (0.147)	-0.60*** (0.154)	-0.52*** (0.147)	-0.59*** (0.145)	-0.54*** (0.142)	-0.58*** (0.177)	41
Oil rent to GDP	0.0753 (0.0491)	-0.00822 (0.0312)	0.00125 (0.0269)	0.0242 (0.0411)	0.00612 (0.0330)	3.30e-05 (0.0329)	0.122* (0.0645)	3.4
Tech	-0.175*** (0.0430)	-0.13*** (0.0370)	-0.15*** (0.0377)	-0.16*** (0.0424)	-0.14*** (0.0398)	-0.13*** (0.0368)	-0.13*** (0.0447)	5.2
Arab Spring Dummy	-0.418** (0.187)	-0.394** (0.191)	-0.454** (0.189)	-0.40** (0.189)	-0.398** (0.189)	-0.403** (0.185)	-0.397** (0.184)	4.7
Observations	279	279	279	279	279	279	279	
Countries	16	16	16	16	16	16	16	

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

This observation only applies to the whole Arab sample. The possible explanation for this result is that the governance factor attempted to highlight the defects of the mismanagement of human capital and the shortage in basic life-supporting facilities, which affected the structure of the reform program. The significance of the sub-governance indicators confirms this possibility.

While the aggregate governance (G) indicator was associated with boosting economic growth by 0.78%, the Political stability (PS) variable contributes 0.42%. Of most significance is the control of corruption (CC) sub-variable which has the most potent coefficient within all models of the whole Arab sample with a 1% change leading to a highly significant change in growth by 2.52%.

7.6.4 Estimated panel data models for Arab Gulf Countries (GCC)

The estimates of the basic model for GCC countries as presented in col. (1) of Table 7.5.4 indicates that the state variable (lagged GDP per capita) although negative was not significant. This implies that the convergence force does not affect growth in these countries. Moreover, in the same column, three principal component variables were statistically significant in the model. Both structural reform (B) and physical infrastructure (P) have a positive effect on growth by 0.41% and 1.45% respectively, while human capital (H) contributes negatively to output growth by 1.1% at 1% significance level. Importantly, since all economies in this group are oil exporters, the oil rent was significantly favourable at 5% and led to increased growth by 0.41%. In contrast, different from other samples, the Arab spring dummy variable was not significant. Besides, high-technology exports seemed to have a negative relationship with growth.

For stabilisation effect's components, the appreciation of local currencies in GCC has led to positive change in growth by 0.28% (col. (2)), which is consistent with the positive impact of international reserves as shown in col. (3). Two main factors increase the instability of these countries; expansion in public debt and unemployment, as they are attributed to reducing growth by 0.31% and 0.42%, respectively. As in all other samples, foreign direct investment in col. (4) was positively associated with growth by 0.13% and statistically significant at 10%.

Table 7.5.4: Estimated models of reform and its components on economic growth for Arab Gulf Countries (GCCC)

	(1) BASIC MODEL	(2) M	(3) E	(4) B	(5) H	(6) P	(7) Shapley Value (%) R2
Macroeconomic instability (M)	-0.376 (0.310)		-0.310 (0.293)	-0.247 (0.272)	-0.123 (0.345)	-0.284 (0.300)	2.4
Exchange rate		0.288** (0.270)					
Deficit		0.0707 (0.0844)					
Public debt		-0.307** (0.266)					
Inflation		-0.0566 (0.133)					
Unemployment		-0.417* (0.266)					
External stability (E)	0.164 (0.366)	0.0926 (0.493)		0.290 (0.339)	-0.0141 (0.376)	0.477 (0.386)	2
Current account			0.0201* (0.128)				
External debt			0.248 (0.351)				
International reserves			0.512* (0.268)				
Diversification index			-1.978 (1.559)				
Structural reform(B)	0.411** (0.203)	0.200 (0.292)	0.225 (0.224)		0.604** (0.301)	0.389* (0.201)	6
FDI				0.128* (0.0779)			
Credit to the private sector				-0.0999 (0.856)			
Concentration index				-0.00259 (0.913)			
Human capital(H)	-1.103*** (0.375)	-0.980** (0.400)	-1.572*** (0.386)	-1.115** (0.450)		-0.990** (0.412)	13.5
Health expenditure					-0.408* (0.310)		
School enrolment					-0.0346* (0.0201)		
Life expectancy					-0.238 (0.165)		
Scientific articles published					0.199 (0.275)		
Physical infrastructure(P)	1.445* (0.968)	1.936** (1.189)	1.861** (0.810)	1.218 (0.883)	1.346 (0.975)		4.3
Fixed telephone						1.384* (0.798)	
Improved water source						0.0144 (0.111)	
Access to electricity						-0.0604 (0.0599)	
Improved sanitation						-0.00191 (0.122)	
Lag GDP per capita	-0.591 (0.471)	-1.605* (0.856)	-1.216** (0.566)	-0.605 (0.482)	-0.539 (0.503)	-0.866 (0.676)	3.8
Pop. growth rate	-0.812*** (0.271)	-0.855*** (0.308)	-0.558*** (0.209)	-0.621*** (0.223)	-0.806*** (0.288)	-0.556** (0.221)	39.5
Oil rent to GDP	0.410** (0.245)	0.587** (0.294)	0.531** (0.224)	0.336 (0.286)	0.446* (0.257)	0.501 (0.330)	10.6
Tech	-0.161** (0.0618)	-0.0984 (0.0671)	-0.136* (0.0742)	-0.143* (0.0757)	-0.166*** (0.0591)	-0.199*** (0.0668)	14.9
Arab Spring Dummy	-0.372 (0.299)	-0.351* (0.317)	-0.600* (0.311)	-0.397 (0.384)	-0.484 (0.307)	-0.264 (0.295)	3.3
Constant	5.794 (6.391)	21.31 (12.87)	13.55** (6.602)	7.393 (7.811)	30.82** (14.85)	11.34 (11.94)	
Observations	106	106	113	113	106	113	
Adjusted R2	50.6	52.6	48.5	46.8	52.6	48.5	50.6
F statistic	6.142***	4.661***	7.496***	5.684***	6.218***	5.780***	
Countries	6	6	6	6	6	6	

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

Despite the notable progress in the area of human capital in the GCC countries, its full potential has not been realised. This could be seen in the high negative significant coefficients of human capital (H) in col. (1) and its elements in col. (5). Health expenditure and gross primary school enrollment negatively affect growth by 0.41% and 0.03% respectively, at significant levels of 10%. Interestingly, the aggregate physical infrastructure (P) variable in col. (1) and its sub-component, fixed telephone line subscriptions in col. (6) were significantly positive and led to increased growth by a similar proportion (1.4%) and significant level (10%).

Table 7.6.4: Estimated models of reform with the inclusion of governance components on economic growth for Arab Gulf Countries (GCC)

VARIABLES	(1) BASIC MODEL WITH-G	(2) VA	(3) PS	(4) GE	(5) RQ	(6) CC	(7) RL	(7) Shapley Value %
Macroeconomic instability (M)	-0.531* (0.270)	-0.637** (0.285)	-0.546** (0.267)	-0.640** (0.280)	-0.550** (0.268)	-0.478* (0.274)	-0.453 (0.293)	2.2
External stability (E)	-0.107 (0.323)	-0.159 (0.337)	-0.118 (0.324)	-0.0718 (0.319)	-0.136 (0.318)	-0.0238 (0.325)	-0.124 (0.322)	1.9
Structural reform (B)	0.507** (0.215)	0.466** (0.206)	0.550** (0.210)	0.395 (0.243)	0.546*** (0.203)	0.473** (0.215)	0.557*** (0.191)	5.3
Human capital (H)	-1.22*** (0.401)	-0.998** (0.440)	-1.17*** (0.391)	-1.22*** (0.389)	-1.15*** (0.400)	-1.35*** (0.419)	-1.20*** (0.394)	11.7
Physical infrastructure(P)	1.989** (0.877)	1.677** (0.707)	1.701* (0.930)	2.236*** (0.830)	1.708** (0.720)	2.027*** (0.721)	2.038** (0.838)	4.5
Governance(G)	0.178 (0.309)							3.4
Voice and accountability		-0.840 (0.698)						
Political stability			0.0052 (0.275)					
Government Effectiveness				0.748* (0.617)				
Regulatory quality					0.0895 (0.573)			
Control of Corruption						0.314 (0.422)		
Rule of law							0.642* (0.767)	
Lag GDP per capita	-0.911 (0.618)	-0.461 (0.382)	-0.625 (0.532)	-1.252* (0.636)	-0.643* (0.387)	-0.977* (0.565)	-0.895* (0.478)	3.5
Pop. growth rate	-0.65*** (0.188)	-0.70*** (0.188)	-0.68*** (0.183)	-0.59*** (0.201)	-0.68*** (0.182)	-0.61*** (0.213)	-0.66*** (0.184)	39
Oil rent to GDP	0.502** (0.195)	0.564*** (0.199)	0.448** (0.188)	0.637*** (0.229)	0.471** (0.211)	0.521*** (0.190)	0.543** (0.215)	10.5
Tech	-0.0879 (0.0615)	-0.0392 (0.0539)	-0.0777 (0.0574)	-0.108* (0.0640)	-0.0817 (0.0662)	-0.0833 (0.0579)	-0.0766 (0.0575)	15
Arab Spring Dummy	0.154 (0.332)	0.101 (0.340)	0.148 (0.338)	0.151 (0.332)	0.148 (0.335)	0.174 (0.334)	0.0857 (0.337)	3
lag GDP growth	0.410*** (0.0997)	0.379*** (0.103)	0.401*** (0.0972)	0.412*** (0.0999)	0.402*** (0.0981)	0.409*** (0.0998)	0.400*** (0.0965)	
Observations	106	106	106	106	106	106	106	113
R-squared	59.2	59.5	59.0	59.3	59.1	59.1	59.5	59.2
Countries	6	6	6	6	6	6	6	6
F statistic	18.39***	17.18***	18.10***	18.50***	18.18***	18.65***	18.32***	6.35 ***

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

In spite of the aggregate governance (G) variable being insignificant, introducing this variable in the regression as in col. (1) in Table 7.6.4 improved the significant level of macroeconomic stability (M) to 10% and the positive effects of structural reform (B), physical infrastructure (P) and oil rent from 0.41%, 1.4%, and 0.41% to 0.51%, 2%, and 0.50% respectively. Government effectiveness (GE) is one of the two significant components of the governance (G) indicator, which stimulates growth by 0.75%. The other is the rule of law (RL) variable, which coefficient is positive and statistically significant with a one-unit change in its index, leading to a 0.64% increase in growth.

7.6.5 Estimated panel data models for Arab Emerging Economies

The basic model for Arab emerging economies in col. (1) of Table 7.5.5 indicates that all socioeconomic reform factors have the most influential power on economic growth rather than the other control variables including the convergence variable, oil rent, population growth and level of technology. As discussed in chapters 5, this group, also called Arab reformers, was the most affected by reform programmes as they have undergone significant changes in their policy environment over the last 20 years. With the exception of physical infrastructure (P), not only were all aggregated reform variables significant with expected signs but also many of their sub-elements were statistically significant. Furthermore, the coefficient of the Arab spring dummy in the basic model was negative and highly significant, leading to a decline in growth rate by 67.8%⁵¹ compared to the years before 2011.

Both aspects of stabilisation - internal and external, have significant influences on enhancing economic output by 0.56% and 0.45% respectively. While unemployment was the most severe macroeconomic problem, and the main source of internal instability, the current account surplus was at the root of external stability. Remarkably, the coefficient of unemployment was the highest among all models, as a 1% increase in unemployment led to reduced economic growth rate by a similar percentage.

⁵¹ $[\exp(-1.133) - 1]100 = - 67.8 \%$

Table 7.5.5 Estimated models of reform and its components on economic growth for Arab Emerging Economies

	(1) BASIC MODEL	(2) M	(3) E	(4) B	(5) H	(6) P	(7) Shapley Value (R2%)
Macroeconomic instability (M)	-0.561* (0.291)		-0.789** (0.360)	-0.628** (0.274)	-0.680** (0.278)	-0.133 (0.401)	13.4
Exchange rate		-0.179 (0.210)					
Deficit		0.0869 (0.111)					
Public debt		0.366 (0.381)					
Inflation		0.0731 (0.0851)					
Unemployment		-1.004** (0.472)					
External stability (E)	0.453** (0.210)	0.384* (0.208)		0.395** (0.200)	0.501** (0.205)	0.443** (0.221)	4.3
Current account			0.121* (0.0640)				
External debt			-0.134 (0.261)				
International reserves			-0.00409 (0.223)				
Diversification index			-1.511 (1.073)				
Structural reform(B)	0.473*** (0.164)	0.408** (0.161)	0.505*** (0.176)		0.489*** (0.164)	0.547*** (0.170)	11.8
FDI				0.180*** (0.0543)			
Credit to the private sector				-0.366 (0.270)			
Concentration index				0.460 (0.329)			
Human capital(H)	0.336* (0.238)	0.636* (0.327)	0.219 (0.268)	0.551** (0.244)		0.331 (0.290)	3.5
Health expenditure					-0.275* (0.148)		
School enrolment					0.024** (0.012)		
Life expectancy					-0.070 (0.095)		
Scientific articles published					-0.238 (0.161)		
Physical infrastructure(P)	-0.436* (0.281)	-0.849** (0.365)	-0.344 (0.298)	-0.308 (0.301)	0.307 (0.343)		2.4
Fixed telephone						-0.056** (0.251)	
Improved water source						-0.019 (0.043)	
Access to electricity						0.017 (0.030)	
Improved sanitation						-0.011 (0.028)	
Lag GDP per capita	-0.784 (0.733)	-1.176 (2.649)	0.329 (1.232)	-0.0104 (0.758)	-0.758 (0.804)	-1.210 (0.980)	23.5
Pop. growth rate	-0.188 (0.303)	-0.336 (0.338)	-0.245 (0.307)	-0.435 (0.330)	-0.472 (0.338)	-0.433 (0.334)	6.6
Oil rent to GDP	0.0380 (0.0459)	0.0600 (0.0789)	-0.0206 (0.0643)	-0.0339 (0.0533)	0.00103 (0.0460)	0.0172 (0.0472)	0.8
Tech	-0.132 (0.0914)	-0.115 (0.0895)	-0.169* (0.0916)	-0.137 (0.0842)	-0.126 (0.0878)	-0.112 (0.0921)	1.6
Arab Spring Dummy	-1.133*** (0.165)	-0.993*** (0.173)	-1.251*** (0.185)	-1.176*** (0.164)	-0.690*** (0.207)	-1.298*** (0.226)	32.5
Constant	8.954 (10.22)	16.55 (35.69)	-5.220 (15.63)	1.408 (10.06)	14.94 (28.27)	17.97 (16.35)	
Observations	100	100	100	100	100	100	
Countries	5	5	5	5	5	5	
Adjusted R2	44.6	46.5	45.1	45.1	74.2	46.7	44.6
chi2	182.4***	241.9***	198.1***	239.1***	205.9***	199.5***	

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

The structural reform (B) component was positive and highly significant, at 1%. It impacts directly on growth by 0.47%, underpinned by a comparatively highly significant (1%) influence of inward foreign direct investment as seen in col. (4), which positively impacts on growth by 0.18%. With regards to human capital (H), the aggregate variable in col. (1) seems to be significant at 10%. However, the signs of the significant elements of human capital were not the same. While health expenditure as a percentage of GDP was negative at 10% significant level, the gross primary school enrollment positively affects output by 0.02% at 5% significant level. For the last component of reform, the physical infrastructure (P) aggregate variable in col. (1) and its component, fixed telephone line subscriptions in col. (6), were significantly negative and led to falls in growth by 0.44% and 0.06% respectively.

Table 7.6.5: Estimated models of reform with the inclusion of governance components on economic growth for Arab Emerging Economies

	(1) BASIC MODEL WITH-G	(2) VA	(3) PS	(4) GE	(5) RQ	(6) RL	(7) CC	(8) Shapley Value (%)
Macroeconomic instability (M)	-0.208*	-0.28**	-0.506**	-0.245*	0.256	-0.215**	-0.120**	11.4
	(0.567)	(0.452)	(0.554)	(0.546)	(0.415)	(0.503)	(0.480)	
External stability (E)	0.126	0.239**	0.0370	0.124*	0.299*	0.194	0.165	5.4
	(0.286)	(0.293)	(0.304)	(0.281)	(0.285)	(0.293)	(0.274)	
Structural reform (B)	0.826***	0.877***	0.751**	0.838***	0.709**	0.812***	0.834***	11.2
	(0.298)	(0.306)	(0.305)	(0.307)	(0.301)	(0.297)	(0.310)	
Human capital (H)	0.178	0.233	0.409	0.216	0.407	0.184	0.168	4.5
	(0.460)	(0.460)	(0.446)	(0.489)	(0.411)	(0.446)	(0.474)	
Physical infrastructure(P)	-0.149*	-0.075*	-0.312*	-0.170*	-0.362	-0.0780	-0.141	2.4
	(0.344)	(0.339)	(0.357)	(0.354)	(0.323)	(0.363)	(0.343)	
Governance(G)	-0.231							6.1
	(0.470)							
Voice and accountability		0.534*						
		(0.301)						
Political stability			-0.696					
			(0.430)					
Government Effectiveness				-0.488				
				(0.861)				
Regulatory quality					1.254**			
					(0.596)			
Rule of law						-0.504		
						(0.589)		
Control of Corruption							-0.151	
							(0.517)	
Lag GDP per capita	-2.228***	-1.736**	-2.53***	-2.20***	-2.11***	-2.20***	-2.08***	22.4
	(0.790)	(0.806)	(0.718)	(0.832)	(0.724)	(0.687)	(0.761)	
Pop. growth rate	-0.464	-0.492	-0.356	-0.534	-0.488	-0.449	-0.477	6
	(0.385)	(0.386)	(0.370)	(0.419)	(0.377)	(0.386)	(0.390)	
Oil rent to GDP	0.0372	0.0360	0.0522	0.0497	0.0805	0.0234	0.0382	1.1
	(0.0496)	(0.0464)	(0.0488)	(0.0503)	(0.0518)	(0.0532)	(0.0521)	
Tech	0.0729	0.0505	0.0565	0.0711	0.0778	0.0510	0.0745	1.5
	(0.193)	(0.184)	(0.184)	(0.200)	(0.176)	(0.185)	(0.200)	
Arab spring Dummy	-0.930***	-1.02***	-1.21***	-0.95***	-0.81***	-0.95***	-0.88***	28
	(0.324)	(0.284)	(0.351)	(0.327)	(0.299)	(0.312)	(0.292)	
lag GDP growth	0.0190	-0.0111	-0.00475	0.0206	0.0107	0.00525	0.0181	
	(0.144)	(0.141)	(0.139)	(0.143)	(0.142)	(0.146)	(0.145)	
Observations	95	95	95	95	95	95	95	
R-squared	51.3	52.0	53.4	51.4	52.6	51.7	51.2	51.3
Countries	5	5	5	5	5	5	5	
chi2	204.8***	216.9***	207.9***	203.7***	210.97***	272.7***	234.5***	

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

Regarding institutional reform – the aggregate governance (G) variable and its components, in Table 7.6.5, only voice and accountability (VA) and regulatory quality (RQ) have a significant impact on growth, while all other factors including the aggregate governance indicator had an insignificant effect on the reformers sample. However, RQ has the most significant impact among all variables in Arab emerging economies.

7.6.6 Estimated panel data models for Arab Countries with civil war

Based on the results in Table 7.5.6, which relates to Arab countries that have experienced or are currently undergoing civil war conditions, the majority of findings were contrary to expectations from prior studies or economic theory. For instance, the coefficient of the unemployment variable had a positive effect on growth, while foreign direct investment (FDI), structural reform, external stability, human capital, and even physical infrastructure had a significant and adverse impact on economic output.

In fact, there are several reasons why this result seems strange or at least different from the previous results of the five samples. Firstly, it is well known that economic theory is a set of arguments that explain the behaviour of economic phenomena, and hence serves as a guide to decision-makers. Since these phenomena are intertwined, economic theory sets assumptions to define the conditions that must be met in order to predict the direction of relations (Bade and Parkin, 2007). However, in cases of armed conflicts, military and political factors, rather than economic factors, control all statuses in a country. These factors are frequently associated with other forms of intrastate conflict, insurgency and counter-insurgency, uprisings, genocide or genocidal actions (Weber, 1994). Therefore, in such cases, using economic theory, with all its assumptions, to explain change could be considered inappropriate (Collier, 1999).

According to Bhardwaj (2012), during civil wars, the economy of the state is usually controlled by noneconomic factors steering the general scene, like the nature and actions of the regime, how it rose to power, and its level of militarisation. In addition to this, international bodies and regional players' aid and interventions, all play a major role in the development of the conflict and policymaking.

Table 7.5.6: Estimated models of reform and its components on economic growth for Arab Countries with civil war

VARIABLES	(1) BASIC MODEL	(2) M	(3) E	(4) B	(5) H	(6) P
Macroeconomic instability (M)	-0.0385 (0.181)		-0.0706 (0.196)	-0.125 (0.150)	0.0880 (0.186)	-0.176 (0.182)
Exchange rate		-0.202** (0.0879)				
Deficit		0.0687 (0.0530)				
Public debt		-0.482** (0.192)				
Inflation		-0.0976 (0.0715)				
Unemployment		0.807** (0.394)				
External stability (E)	-0.160* (0.0863)	-0.150 (0.134)		-0.136* (0.0786)	-0.0218 (0.0950)	-0.148 (0.0909)
Current account			-0.0514 (0.0561)			
External debt			-0.0506 (0.157)			
International reserves			-0.0818 (0.150)			
Diversification index			0.0446 (2.271)			
Structural reform(B)	-0.392*** (0.123)	-0.404*** (0.136)	-0.401*** (0.129)		-0.364*** (0.128)	-0.391*** (0.126)
FDI				-0.163*** (0.0448)		
Credit to the private sector				0.318* (0.192)		
Concentration index				-0.976** (0.484)		
Human capital(H)	-0.551** (0.216)	-0.577** (0.178)	-0.580** (0.237)	-0.203 (0.174)		-0.0991 (0.248)
Health expenditure					-0.693*** (0.202)	
School enrolment					-0.0464** (0.0209)	
Life expectancy					0.197*** (0.0631)	
Scientific articles published					-0.523** (0.228)	
Physical infrastructure(P)	0.333* (0.188)	0.361** (0.173)	0.347 (0.210)	-0.0354 (0.190)	-0.129 (0.240)	
Fixed telephone						0.106** (0.0524)
Improved water source						0.00604 (0.0175)
Access to electricity						0.0206 (0.0175)
Improved sanitation						-0.0362 (0.0241)
Lag GDP per capita	-0.0397 (0.297)	-0.987*** (0.357)	-0.068 (0.334)	-0.114 (0.294)	0.708* (0.377)	-0.102 (0.365)
Pop. growth rate	-0.859** (0.434)	-0.465 (0.531)	-0.935** (0.459)	-0.928** (0.402)	-0.246 (0.420)	-0.687 (0.444)
Oil rent to GDP	0.0713 (0.0839)	0.248** (0.103)	0.0789 (0.104)	0.311** (0.135)	-0.0862 (0.108)	0.0878 (0.0975)
Civil war Dummy	-0.418* (0.216)	-0.602** (0.300)	-0.432* (0.234)	-0.095 (0.685)	-0.194 (0.61)	-0.0895 (0.261)
Constant	-3.449 (4.996)	-2.759 (5.101)	-3.185 (5.988)	-3.114 (4.637)	-29.11** (12.44)	-7.041 (7.863)
Observations	101	96	101	101	96	101
Number of countries	6	6	6	6	6	6
chi2	44.15	54.95	45.01	51.73	55.70	42.64

***, **, and * indicate the coefficient is significantly different from zero at 1%, 5%, and 10% respectively

The other important reason is that most economic studies which involve periods of civil strife or war, use qualitative analysis such as descriptive or exploratory techniques rather than quantitative and statistical models (Baddeley, 2011; Bhardwaj, 2012; Boskin and Lau, 1990; Collier, 1999;2011; Collier and Hoeffler, 1998; Fearon, 2011; Stewart, 2000; Walter, 2015). The reason for this, as mentioned before, is that the assumptions of economic theory do not seem to apply to these unstable conditions, in addition to the lack of sufficient economic data during these unstable periods.

Furthermore, the chi2 test of the model was insignificant as in col. (1), whereas it was highly significant in all previous models. This means that the estimated model and its variables for this group failed to explain changes in the dependent variable. Thus other influences, mostly military, that are not captured in the present model may be responsible for explaining these countries growth rates. Consistent with this argument, the intercept dummy variable of the civil war was significant and reduced the economic output by 35%⁵² as seen in col. (1) of Table 7.5.6.

Nevertheless, the study attempted to isolate the impact of the war on the results by conducting a comparative analysis between wartime and peacetime for the same group, to examine whether the outcome would change. However, the results, as in Table 7.6.6, did not confirm any significant differences. The chi2 test conducted between the two models shows no significant difference between the model's coefficients of the two periods except for the human capital variable, which is, undoubtedly, the first victim in a time of civil wars. However, the two estimated models in Table 7.6.6 are not reliable due to the small number of observations, which increases the probability of statistical type II error. The error means not rejecting a null hypothesis when the alternative hypothesis is the true state of nature (Tabachnick (2013)

Moreover, estimates presented in Appendix 7.2.1 and 7.2.2 confirm the same hypothesis. For example, the unemployment rate and foreign direct investment hardly show any differences between war and peacetime, with the results of other coefficients very close to each other. To a large extent, all these results conform to reality. The civil wars in the Arab region had a different nature from civil wars in other parts of the world. Arab civil wars did not change the regimes; they allowed them to continue during and after the conflict. Examples include President Bouteflika in Algeria, Albashir in Sudan or Saleh in Yemen.

⁵² $[\exp(-0.42) - 1]100 = - 35 \%$

Consequently, the results are not expected to change as long as the same policies and strategies are implemented. Therefore, the result of Arab countries with civil wars will be excluded from the discussion below. The following section will discuss in details the similarities and differences among only five regions (advanced economies, developing countries, the whole Arab region, Arab emerging countries and GCC).

Table 7.6.6: Wartime versus peacetime - comparison of the estimated effect of reform on the economic growth of Arab Countries with civil wars

	(1) Wartime	(2) Peacetime	(3) chi2-test of differences among models
Macroeconomic stability (M)	-1.08** (0.45)	0.17 (0.58)	3.16
External stability (E)	-0.27 (0.30)	0.33 (0.51)	1.31
Structural reform (B)	-0.07 (0.27)	-0.622 (1.10)	0.26
Human capital (H)	0.85 (0.80)	-0.65 (0.60)	4.27**
Physical infrastructure(P)	-1.22 (1.20)	0.15 (0.51)	2.11
Governance (G)	0.26 (0.28)	-0.33 (0.93)	0.47
Lag GDP per capita	2.11 (2.21)	-0.45 (0.81)	2.61
Pop. growth rate	1.60 (1.27)	-0.37 (1.07)	1.63
Oil rent to GDP	-0.14 (0.15)	0.72 (0.61)	3.19
Prob > F	0.341	0.398	

** indicate the coefficient is significantly at 5%

7.7 Discussion of panel estimated results

Following the results presented in the previous sections, this section attempts to interpret the outcomes for each sample highlighting the similarities and differences among world regions and demonstrates the extent to which outcomes are similar to existing literature, in addition to other significant findings.

7.7.1 State Variable

The estimated coefficients of the lagged GDP per capita were significant with a negative sign for all models of advanced economies, developing countries and Arab countries. The results are consistent with the conditional convergence concept of the neoclassical growth model, that the lower the starting point of per capita GDP, relative to the long-run or steady-state position,

the faster the growth rate. The convergence is conditional because the steady-state levels of capital and output per worker; in the Solow–Swan model, depend on many other variables, and the position of the production function characteristics that might vary across economies. Thus, the models exhibit the familiar convergence pattern among different regional income levels. For instance, the impact of the state variable was 2% in wealthy countries, while the effect reduced to 1.4% in developing nations and only 0.14% in Arab countries. Similar empirical results were found by Adedokun (2017); Barro (2000); Barro and Sala-i-Martin (1995); Calderón and Servén (2010); Hall and Ahmad (2012); Silberberger and Königer (2016).

7.7.2 Reform Variables

7.7.2.1 Macroeconomic stability

With few exceptions, the negative signs of the aggregate macroeconomic instability coefficients and the highly significant levels of this variable and its elements in all samples, support the argument that an economy, which has the desired degree of macroeconomic stability, would ensure confidence in investors, provide incentives for the most productive destination of inputs, and enhance the profitability of investments at reasonable rates of risks (Alguacil et al., 2011; Mohieldin, 1995; Ulvedal, 2013). In contrast, an economy marked by macroeconomic volatility will present an excessive degree of uncertainty, which in turn will deter agents from investing or will cause them to make wrong decisions regarding the allocation of resources to alternative projects with dire consequences for economic growth (ILO, 2015; Martinez and Sancher-Robles, 2009).

Efficient management of the exchange rate is considered to be an essential policy objective in governments to achieve a set of diverse objectives of economic growth, control inflation, and sustain external competitiveness. The evidence from the developed and some of the Arab countries' analyses support the argument that the devaluation of domestic currencies makes exports more competitive and cheaper to foreigners. Thus the demand for exports may increase (Ping, 2011). In the same vein, imports become more expensive, which may reduce demand for imports and reduce pressures on a country's reserves. Higher exports, in particular, will help boost growth (Kalyoncu et al., 2008; Lambertini and Tavares, 2005). Furthermore, because the elasticities of exports and imports are much higher in industrialised countries than Arab countries, the percentage gain was 0.83% and 0.06% for the respective samples.

In contrast, the internal stabilisation in Gulf countries was affected positively by currency appreciation. The particular case of this group was due to their exchange rate policy as they

have all pegged their currencies to the US dollar for nearly three decades. Since oil is the main export commodity in these countries, and oil prices are valued in dollars, any exchange rate fluctuation could drastically reduce revenues if the currencies were not pegged. In addition, due to sustained high oil prices from the early 2000s to 2014, Gulf countries obtained massive revenues by creating sovereign wealth funds (SWFs) (Bahgat, 2017). According to the Sovereign Wealth Funds Institute, in 2010, GCC countries held funds to the tune of 4.7 trillion US dollars (Hvidt, 2011). Therefore, the current policy avoids currency fluctuation, eliminates uncertainties in international transactions, and applies other approaches to maintaining investors' confidence in the economy. Consistent with this result, the coefficient of international reserves for the same group of countries in col. (3) of Table 7.5.4 was positive and statistically significant, unlike in the other samples.

Regarding the budget deficit, the relationship is observed to be negative with economic growth as seen in all its significant coefficients in the case of advanced economies, developing countries and Arab countries. Interestingly, results of the first two groups were approximately the same (0.12%), but with higher significant levels in the second sample, while the coefficient in the third sample has a slightly lower impact on growth by only about 0.08%. The same negative relationship was realised by Adak (2010); Adam and Bevan (2005); Eminer ; Fischer (1993). These results are also consistent with the neoclassical approach, which argues an inverse relationship between deficit and growth (Rahman 2012). This issue is more commonly seen in developing countries, as they have deficient in private sector investment leading to the need for increased government investment to drive aggregate demand. In contrast, on the revenue side, the government lacks adequate revenues to cover its large expenditures, and hence such this process results in high budget deficits and inflation rates (Arjomand et al., 2016).

Public debt is another interesting and contradicting factor. While it was significantly positive in advanced economies, it has a detrimental effect in developing and Gulf economies. According to Greiner (2010;2011), the impact of debt on growth could be positive if it is used to finance productive investment, which is the case in advanced economies. Furthermore, Presbitero (2008) showed that industrialised countries are better able than developing nations to borrow and use domestic and foreign financing in a productive way, without carrying the costs of the disincentive to investment, capital flight, policy volatility and the crowding out that goes hand in hand with massive debts. However, in developing countries, the inverse consequences of debt overhang are likely to offset the potential benefits derived from the

availability of additional funds. This results from weak economic management and bad governance within emerging countries (Blake, 2015).

Not surprisingly, the study's results also confirm that unemployment is one of the most problematic issues not only for emerging countries but also for advanced economies. High and persistent unemployment in most of the world regions, as discussed in Chapter 5, hurts economic growth. According to Castells-Quintana and Royuela (2012), unemployment could undermine economic growth not only because it is a waste of resources, but also because it creates redistributive constraints and subsequent distortions, drives people to poverty, restrictions liquidity, limits labour mobility, erodes self-esteem and increases social unrest and conflict.

This link between economic growth and unemployment can be clarified in terms of the necessary input of services provided by employees needed to sustain an economy and to enhance economic growth. When there is a high level of unemployment, the level of output also decreases due to the reduction in the number of workers contributing to the output (Ogebe 2015). The key to the relationship between changes in the rates of GDP growth and unemployment is the rate of growth in potential output. The rate of growth of potential output is a function of the rate of growth in potential productivity and the labour supply when the economy is at full employment. When the unemployment rate is high, then actual GDP falls short of potential GDP, this is referred to as the output gap (Levine 2012).

Based on the estimated results, unemployment in both samples of developed and developing countries had an adverse and highly significant effect on economic growth by 1.1% and 0.32% respectively. Surprisingly, the magnitude of the inverse effect in advanced economies was the highest among all samples, while traditionally the less developing countries (LDCs) usually have higher unemployment rates⁵³ (Lewis, 2013). However, the regression outcomes are affected by mixed unemployment rates among developed regions, especially after the global financial crisis, while it was only 5% in Southeast Asia, it reached 6.5% in North America and about 9 % in the Eurozone. In addition, there was a considerable gap in unemployment rates between EU members, for example, the average rate in Spain was 20.1 %, while in Austria it was only 4.4 %.

On the other hand, although the unemployment variable in the regression's result for the whole Arab sample as in table 7.5.3 was not significant, in the rest of the Arab sub-groups, it indicates

⁵³ F-test has shown significant differences of the impact of unemployment among models.

an inverse relationship. Remarkably, in the case of the emerging Arab economies, unemployment was the only significant variable among the components of macroeconomic instability. Consistent with section 5.3.1.2 in Chapter 5, and following Wahba and Assaad (2017), employment creation is a major bottleneck for most Arab economies with a growing labour force and no corresponding expansion in the public sector, which leads to high youth unemployment. Engaging newcomers in the labour market requires an expanding private sector, which is also willing to generate work opportunities at a much faster rate than the growth in the labour force.

Amin et al. (2012) argue that overpopulation relative to the physical resources of capital, land and water, and overprotective labour regulations were the major reasons for the high unemployment rate. Most Arab countries tend to have excessive hiring bottlenecks involving notice requirements, severance payments and fines for terminating redundant workers. According to the World Bank (2017a) “doing business measures”, the region ranks as the most rigid on the redundancy index and is third from the top of the ‘difficulty of hiring’ index.

In the case of the GCC, the employment situation has been shaped by an oil-based growth model. Following the oil prices boom after 1973 and subsequent initiation of ambitious development projects, the hiring of both skilled and unskilled non-national labour was needed to sustain the rapid economic growth (Nabli, 2007). However, after more than forty years of importing labour, the pace of private-sector jobs’ creation for nationals has recently curbed, implying a challenging employment outlook. Crockett (2014) shows that Gulf countries face persistent high youth unemployment rates, reaching 30% in Saudi Arabia. In addition, private firms are suffering from fiscal reforms and government spending is down.

7.7.2.2 External stability

Although in all samples, the aggregate external stability variable has shown a slight impact on economic growth relative to other components of reform programmes, its elements of foreign stabilisation indicated several relevant results.

First, in developing countries, the coefficient of total foreign debt stock as a percentage of goods and services exports significantly impacted growth negatively by 0.11%. The findings appear to show that external debt had a direct adverse effect on output growth for the period covered. This relationship is in agreement with the argument that relying on foreign debt to boost economic growth is not a good policy. This may also be explained by poor governance,

such as corruption and lack of government effectiveness. Instead, developing countries may be better off trying to reduce their external debt and supplement their lack of domestic saving with other forms of foreign capital such as foreign direct investment (Effendi, 2001; Kasidi and Said, 2013; Okonkwo and Odularu, 2013).

The results also highlight the importance of current account surplus in promoting economic growth in the Arab region; the whole Arab sample and for Arab sub-groups; Gulf countries (oil-rich countries) and emerging economies (resource-scarce nations). The coefficient of the Arab sample was highly statistically significant (1%), while in the other two samples, it was 10%. The importance of this indicator in the Arab reformers (emerging economies) group was much higher than the other samples, as it stimulated growth by 0.12%. Additionally, with the steady growth of oil exports and despite the growth in imports, the Arab countries' current account moved from almost a net balance on the average in the 1990s to a surplus averaging at 7.0 % of GDP over the 2001-2007 period (Aristovnik, 2007). Further evidence to support these arguments is the significant positive effect of international reserves for gulf countries, as mentioned in the above section.

In conclusion, with regard to internal and external economic stabilisation and its relationship with economic reform in the Arab region, the lack of consistency of fiscal and monetary policies played a significant role in the economic instability of the region's countries and the emergence of several economic problems with social features such as unemployment. Over time, the accumulation of these problems aroused the anger of large segments of the populations and eventually exploded through the Arab uprisings in 2011. On the other hand, the economic reform programmes applied by the emerging economies in the region were successful in reducing the deficit in the balance of payments and the general budget and diminishing the external debt. This had a positive impact on the economic growth of most of these countries. Only in some cases was the impact limited to maintaining the same levels of growth and avoiding any decline in growth rates.

Furthermore, the surpluses of the oil sector in the oil-exporting countries played a significant role in achieving stabilisation. This was clearly reflected positively in the current account balance and the stability of the exchange rate supported by a high level of international reserve. On the other hand, despite the implementation of several diversification policies in the Arab countries, the variegation of the production structure remains one of the main obstacles to economic stability.

7.7.2.3 Structural reform

The highly significant structural reform aggregate variable for all samples, except advanced economies, confirm its importance of any successful economic reform, especially in developing countries. Indeed, the effect of structural reforms itself, and its association with other indicators; particularly the stabilisation variables, help improve economic growth through generating additional indirect benefits.

The magnitude of the coefficients varied among regions. It was 0.15% in developing countries with 10% significant level, while the effect was higher in the full Arab sample (0.31%), 0.41% in GCC and 0.47% in emerging Arab economies. The results are reasonable, as the latter is a group of reformers who have targeted these kinds of reforms for many years.

The outcomes support the IMF literature' conclusions by Abbott et al. (2010); El-Erian et al. (1996); IMF (2014); Kireyev (2000); Swiston and Barrot (2011); Williamson (2004), that structural reforms are essential to promote competition in the economy through maintaining appropriate regulatory frameworks, enhancing the services sector, improving the value chain in manufacturing, and achieving stronger integration at the regional and international levels. Moreover, market reforms, especially reforms in the labour market which improves labour utilisation and boost output, have the potential to reduce structural unemployment and employment rates and improve economic activity, raising potential growth and welfare of citizens. (Canton et al., 2014).

The other notable result in this context was that all coefficients of inward foreign direct investment (FDI) as a percentage of GDP was positive and statistically significant for all samples without any exception. This finding is consistent with results of earlier studies, which argue that FDI could actively encourage growth, whether in industrialised or emerging economies (Cieřlik and Anh, 2016; Wisniewski and Pathan, 2014).

While the effect of the variable was approximately similar among developing and developed countries in the range of 0.08%, it was double this figure in the three samples of Arab nations. FDI could boost employment and stimulate technological change through the adoption of foreign technology and know-how (Alfaro, 2003; De Gregorio, 2005; De Mello, 1999; Schnellenbach, 2007). Technology transfer through foreign investment helps expand the existing stock of knowledge through labour training, skill acquisition and diffusion. It contributes to introducing new management practices and a more efficient organisation of the

production process. Consequently, FDI can play an essential role in modernising a national economy and promoting economic development.

Concerning, the aspect of financial development, the result from developed countries offer contradictory evidence than what was presented by Goldsmith (1969); Schumpeter (1934b) or recently by Caporale et al. (2015); Fink et al. (2004), which noted that well-developed financial system increases growth by channelling savings to the most productive investment projects. The study outcome means an extension of credit to the private sector does not seem to stimulate economic growth, similar to the results by Arcand et al. (2012); Cecchetti and Kharroubi (2012); Koivu (2002); Petkovski and Kjosovski (2014); Sarkar (2009). According to Cecchetti and Kharroubi (2012) if bank credits to the private sector exceed 90% of GDP, then finance becomes a burden on growth. They mention that a faster rate of financial sector growth may be detrimental to the growth of the economy because the financial sector competes for resources with the rest of the economy. In some other cases, financial intermediaries can compete with domestic firms, which could lead to a credit crunch that lowers investment and productivity and thus financial development may impact negatively on economic growth (Sarkar, 2009).

The export concentration index was observed to have a positive effect on growth in the developing countries sample, although this result contradicts other research outcomes which argue that more diversified production structures lead to lower volatility of output, more macroeconomic stability and higher growth (Aditya and Roy, 2010; Agosin, 2007; Imbs and Wacziarg, 2003; Manama, 2016; Mejía, 2011; Wiig and Kolstad, 2012). However, the model outcome is more consistent with conventional trade theory, which emphasises the benefits of specialisation due to comparative advantage, especially in the relatively abundant factor endowments (Salvatore, 2012). Furthermore, it is not possible to ignore the historical aspect, that most developing nations for a long time have been heavily dependent on a small range of traditional primary commodities and few export commodities as their sources of growth (IMF, 2014).

In conclusion, structural reform presented an essential role in stimulating the economic growth of the Arab countries generally, and RPLA countries specifically, as they implemented more organised economic reform programmes. Attracting foreign direct investment is one of the most critical elements of structural reform due to its direct and indirect economic benefits. However, the applied program of structural reform was partial, non-integrated, and did not include more effective strategies to develop the financial sector or diversify the structure of the economy of ACs.

7.7.2.4 Human capital

Concerning public health expenditure as a percentage of GDP, the coefficients for all study samples were negative and statistically significant. The negative sign of the health expenditure component is explained in the literature as follows. Government health expenses as expenditure items lead to increase aggregate demand, which may therefore positively impact on growth. However, excessive higher government expenditures negatively impact on growth especially if they are consumption expenditures (crowding out effect hypothesis) (Bakare and Olubokun, 2011; Bedir, 2016; Churchill et al., 2015; Lacheheb et al., 2014).

This argument is also supported by the strength of the coefficients in the study regions. Surprisingly, the highest decline in growth due to these expenditures was in advanced economies by 1.2%, while it was less than half a per cent in other groups. These estimates are consistent with the result of Mahmoudzadeh et al. (2017), who found that the "crowding effect" is greater in developed than developing countries. Additionally, the outcomes are supported by the relationship between economic growth and public health expenditure among advanced economies and developing countries as shown in the scatter diagram in Appendix 7.3; although both fitted lines had a negative slope, the line of advanced economies was steeper than the line of developing countries.

On the other hand, the second human capital element, life expectancy at birth, seems to have led to increased growth in both developing and developed countries by 0.09% and 0.04% respectively. This confirms the argument of the World Health Organization (WHO) that as much as 50% of economic growth differentials between developed and developing nation is attributable to ill health and low life expectancy (Oni, 2014). Regardless of the differences among regions, the results support the claim that lower mortality may increase income per capita by increasing the productivity of available resources (Acemoglu and Johnson, 2007; Baldacci, 2004; Cervellati and Sunde, 2011; Lorentzen et al., 2008).

With reference to gross primary school enrolment, used as a proxy for education, the results were contradictory. While it has a positive effect in emerging the Arab group, its effect on growth is negative in the GCC countries. The role of education in reducing poverty and enhancing economic growth is well established, but such positive impacts are dependent on several factors. For instance, Mingat and Tan (1996) found that higher education has a positive and statistically significant impact only in the group of developed countries, while primary education has a positive effect in less advanced, and finally secondary education has a positive

impact in developing countries. Similarly, Petrakis and Stamatakis (2002) determined that the growth effects of education depend on the level of income; low-income countries benefit from primary and secondary school, while high-income developed countries benefit from higher education. This result is also consistent with the scatter plots in Appendix 7.4 on the relationship between primary school enrolment and economic growth. The plots show the positive relationship in emerging Arab countries, while it was obviously negative in the Gulf countries. Based on these explanations, primary education may not be the appropriate proxy for Gulf countries in examining the role of education on growth.

The other striking finding is the coefficient of the number of publications of scientific and technical journal articles. The coefficient of this variable was highly significant in developed countries which enhanced economic outcomes by 1.1%. The variable was used in the study as a proxy for innovation capacities, which is the main root of growth and development in these countries (Hasan and Tucci, 2010; Maradana et al., 2017).

Therefore, it was not surprising that the level of technology was only positive and significant in the advanced economies sample. Understanding this complementary relationship between those variables could help to explain the current level of prosperity for industrial economies. This relationship is documented in numerous studies. For instance, Tuna et al. (2015) prove that new developments can only be maintained by inventions, which means the exploration of new knowledge which is applied to current production techniques. The initial work of Begg, Lansbury, et al. (1994) argues that new knowledge, gained through research and development, and innovations are the most critical factors in the development process.

In conclusion, the above analysis shows that human capital did not have the expected impact on economic growth in the Arab region. With a slight exception, health, education and scientific research outputs were not effective instruments to achieving sustained growth in Arab states. This result is consistent with the outcomes of the analysis in Chapter 5, which showed that Arab governments have not sufficiently invested in the human capital even in oil-exporting countries. This is because the reform programmes that were implemented did not target the human capital elements, but rather marginalised it. Consequently, this was one of the primary reasons leading to the Arab uprisings in 2011.

7.7.2.5 Physical infrastructure

The output contribution of infrastructure varied across the study samples. Surprisingly, the effect of infrastructure was statistically insignificant in the advanced economies sample, while as shown in Figure 5.22 in chapter 5, these countries have the highest levels of infrastructure in the world. This must be directly related to their early stock of infrastructure assets, as most of them had already fully covered their need for infrastructure services a long time ago. However, this outcome raises an important question about the cost of acquiring and operating these infrastructures and whether the infrastructure is under- or over-provided.

In other words, the optimal level of infrastructure provision could be achieved by equating marginal social return and cost. According to Servén (2010), if the infrastructure level is close to its optimal, the general-equilibrium growth impact of a marginal increase to the infrastructure stock should be zero. This is as the direct output impact of improved assets would cancel out the adverse effect of diverting more resources towards infrastructure accumulation.

On the other hand, the positive impact of infrastructure on growth in both developing and Gulf countries is supported by studies by the African Union (2014); Calderón and Servén (2004); Ismail and Mahyideen (2015); Kodongo and Ojah (2016); Romp and De Haan (2007) who showed that growth was positively affected by infrastructure stocks. In this case, infrastructure changes aggregate output either through its direct impact on production as an additional input, or they boost total factor productivity by reducing transaction and other costs, thus allowing more efficient use of standard productive inputs.

Furthermore, the GCC group had the highest infrastructure effect in terms of stimulating growth and jobs among all regions, with a 1% change influencing growth by as much as 1.5%. This effect was associated entirely with the volume of public investment, including infrastructure in these countries. According to Ianchovichina et al. (2013), because of the predominantly high oil prices in the last two decades, public investment spending in the GCC was significantly higher than in most developing regions (except East Asia), and double the size of the OECD average. In particular, expenditure on infrastructure boosted employment in the construction sector, which was a major source of job growth in the 2000s compared to other sectors and countries (Vivien and Briceño-Garmendia, 2010). Construction created about 30% of the jobs in MENA (most of which are from the GCC states), which was twice the average for a fast-growing, high investment countries such as Indonesia and Brazil (Estache and Garsous, 2012).

Inadequate supply of infrastructure or unreliability in services may inhibit investment in productive capital, thus restrict and reduce economic output (O’Fallon, 2003). This is the case in most emerging and LICs in the Arab region; therefore, it affected the overall results for the full Arab sample. Since the availability of proper infrastructure is particularly essential, vis-à-vis its impact on production costs for small and medium enterprises, poor quality or unreliable infrastructure service provision in these countries may mean the private sector is reluctant to invest in productive capital or may have to reduce such investments in favour of ‘complementary’ capital to compensate for the lack of infrastructure (Nijkamp and Poot, 2004). Additionally, excessive public investment in infrastructure compared to other productive economic activities could have a negative impact on the economy as it draws scarce resources away from maintenance and operation of existing stocks (Fedderke, 2006). While in this situation, investment in infrastructure projects should be based on social benefit-cost analysis, the opportunity cost of investment should be taken into consideration not only between infrastructure and other sectors but also among different kinds of infrastructure projects.

Interestingly, in advanced economies, the unexpected adverse effect of improved sanitation facilities may seem contradictory to the positive impact of improved water in the same regression as both are components of health facilities. However, this is not surprising, the WHO Regional Office report for Europe⁵⁴, states that the region did not meet the Millennium Development Goal (MDG) sanitation target in 2015. Approximately 62 million people lack access to sufficient sanitation facilities in terms of functioning toilets and safe means to dispose of human faeces. On the other hand, the European Region had met the MDG target for drinking-water in 2015. Additionally, as seen in Appendix 7.5, the relationship between economic growth and sanitation facilities was slightly negative. This could be caused by the outlier observations of Ireland and some observations of Greece, as they lagged behind other industrialised countries. When those outlier observations were removed, the relationship turned out to be positive.

In conclusion, the GCCC are the only Arab countries that have given priority to the development of infrastructure within strong and effective development programmes. GCCC have allocated large budgets to develop and support their infrastructure system, which has positively reflected in their economic growth. In contrast, the rest of the Arab countries suffer from a severe shortage of public services and basic facilities such as drinking water, sanitation

⁵⁴ <http://www.euro.who.int/en/health-topics/environment-and-health/water-and-sanitation/data-and-statistics>

and electricity. Consequently, the lack of these essential services, which is a key requirement for any individual, have hindered the development process and may have led to the anger of the Arab citizens towards their governments.

7.7.2.6 Governance

The overall outcomes of institutional reform are consistent with the hypothesis that governance is a positive and statistically significant determinant of economic growth, as discussed in chapter three.

The first noticeable result emerges from the advanced economies sample, in which the aggregate governance indicator and all its components, except control of corruption, play a significant role in enhancing economic output. For instance, an improvement in government effectiveness index by one leads to an increase in GDP growth by 0.40% and up to 0.65% from the rule of law. These findings strongly confirm that developed nations usually have comparatively well-established and advanced governance systems based on the rule of law, effective regulations, rational specialisation of tasks, transparency and accountability mechanisms, political stability, and a professional and highly skilled civil service (Baland et al., 2010; El Anshasy and Katsaiti, 2013; Kaufmann et al., 1999; OECD, 2002; Silberberger and Königer, 2016; Uddin et al.; Williams and Siddique, 2008). It is accepted that these components compose the appropriate building blocks of good institutions. Thus, existing inclusive political and economic institutions could explain why developed countries are relatively well equipped to carry forward the complex challenges of sustainable growth.

The aggregate governance indicator, government effectiveness and control of corruption were significant factors for developing countries. These results are consistent with other studies in different regions of the world such as Ajide et al. (2014); Gani (2011) for Sub-Saharan African, Godinez and Liu (2015); Kutan et al. (2009); Weyland (1998) for Latin America and, Knack (2006); Smilov and Toplak (2008) for Eastern Europe. Together these results highlight that the majority of developing nations are suffering from the same governance deficits (Butkiewicz and Yanikkaya, 2011; Tiwari and Kalita, 2011), which is one of the reasons for their poor economic performances.

The Aggregate governance indicator, political stability and control of corruption were all significant for the full Arab sample, while government effectiveness and the rule of law were

significant for GCC countries, and for the emerging Arab economies, it was voice and accountability, and regulatory quality.

For Arab countries as a whole, control of corruption was the most significant and largest factor boosting growth by 2.5% within all economic and political indicators. This outcome agrees with other studies focusing exclusively on corruption in the Arab world (Baklouti and Boujelbene, 2015; Guetat, 2006; Kutan et al., 2009; Saha and Ben Ali, 2017; Touati, 2014). It is a confirmation that corruption distorts the economy and legal environment leading to an unfair distribution of state resources and services. Eliminating corruption leads to better government effectiveness, promotion of positive incentives in the society, equal opportunities for all citizens, and ultimately ensuring more sustained and inclusive growth. Political stability was also found to be a key determinant of economic growth by 0.42%, which confirm that a stable political system improves investment or speed up productivity, creating a friendly business environment in ACs and consequence, raise the GDP growth rate. Alternatively, Political instability increases the uncertainty in the economy and deters the risk-averse entrepreneurs from taking action for profitable investment opportunities. After the turmoil's of 2011 in the Arab world, attention should be given to maintaining political stability, reduction of internal and external conflicts, as well as of ethnic tensions. Restoring political stability will be critical to reverse the recent collapse of foreign investment and tourism to the region.

Regarding the institutional status in the Gulf countries group, Government effectiveness (GE) was the most influential governance components by raising growth by 0.75%. This outcome captures the capacity of a government to produce and achieve sound policies as well as the provision of public goods and services. This result also based on implemented programmes which aimed for improving the quality of governmental bureaucracy in GCC (ESCWA, 2017). These countries have applied very promising public investment projects especially in 'social infrastructure' (such as schools, hospitals) and 'economic infrastructure' (such as network utilities, energy, water, transport, and digital communications) (Ianchovichina et al., 2013). All of these public investment schemes are considered essential ingredients for the success of any modern economy (Stewart, 2010).

Moreover, the rule of law has been enhanced in GCC countries, such as improvements in the legal infrastructure, particularly the quality of contract enforcement, protection of property rights and the independence of commercial courts (Looney, 2013). Other significant efforts have increased the public's confidence in the rules of society, such as the Traffic Law. It has

also succeeded to significantly reduce rates of violence and crime in its communities (Saif, 2009).

By contrast, the results in emerging Arab countries were slightly different; the sources of increased growth are voice and accountability, and regulatory quality (0.53% and 1.25% respectively). These results are expected given the economic and political conditions in these countries. Firstly, the outcome of voice and accountability, used as a proxy for democracy, reflects the political situation in these countries. In 2011, the decisive moments that changed the region forever were the downfall of Tunisian President Ben Ali and Egyptian President Mubarak. Following this, a massive wave of non-violent demonstrations and protests swept the Arab region calling for more involvement of the populace in the political environment of these countries (Davis, 2013).

The aim of the democratic movement in emerging Arab countries was more than political. People, especially the youth, were frustrated by their ineffective and corrupt states, and a society where they cannot apply their talents and ingenuity, and achieve their ambitions (Acemoglu and Robinson, 2013). They recognised that the roots of these problems were the way political power is exercised and monopolised by a narrow elite. In addition, there were other related issues such as the manipulation of election processes, the excessive force used by the military, security agencies and police, and systematic repressions against all opposition (Malik and Awadallah, 2013).

The above result is consistent with numerous studies confirming the positive relationship between democracy and growth (Abdel-Latif et al., 2014; Heo and Tan, 2001; Jaunky, 2013; Rachdi and Saidi, 2015; Sen et al., 2006). The positive changes that democracy brings; such as delegation of authority and regulations of social conflicts, on economic growth heavily outweigh the adverse and restrictive effects of autocracy. According to Nobel laureate Amartya Sen, democracies enrich individual lives through the granting of political and civil rights and do a better job in improving the welfare of the poor (Acemoglu et al., 2008). Second, they provide political incentives to rulers to respond positively to the demands of the citizens since the right to rule is derived from popular support manifested in competitive elections (Lake and Baum, 2001).

Another key outcome for Arab emerging countries (or Arab reformers) was the strong positive linkage between regulatory quality and growth. This relationship results from the strict structural reform programmes, such as the liberalisation of the market and banking system, and

the financial sector deregulation, that these countries have implemented in order to promote competition in the economy and improve growth (Spilimbergo et al., 2009). Regulatory quality complements these transitions by capturing how governments encourage a market-friendly environment, especially private sector development (Kaufmann et al., 2006).

Similar results are demonstrated by Djankov et al. (2004); Djankov et al. (2006); Jalilian et al. (2007); Messaoud and Teheni (2014). They conclude that the provision of an appropriate regulatory regime which encourages rather than constrains economic growth is an essential part of good governance. The ability of the state to provide sufficient regulatory institutions can be expected to be a determinant of how well markets and the economy perform.

In the same context, regulatory quality complements voice and accountability. Dowdle (2017); Parker (1999) argue that a well-functioning regulatory system is one that balances accountability and transparency. Accountability requires regulatory agencies to be accountable for the consequences of their actions, to operate within their legal powers, and to observe the rules of due process when arriving at their decisions. Transparency relates to regulatory decisions being reached in a way that is accessible to interested parties. The third process, which provides regulatory legitimacy, is consistency. Inconsistent regulatory decisions lead to uncertainty for investors, raises the cost of capital and may severely damage the willingness to invest.

7.8 Contributions of reform programmes components to growth

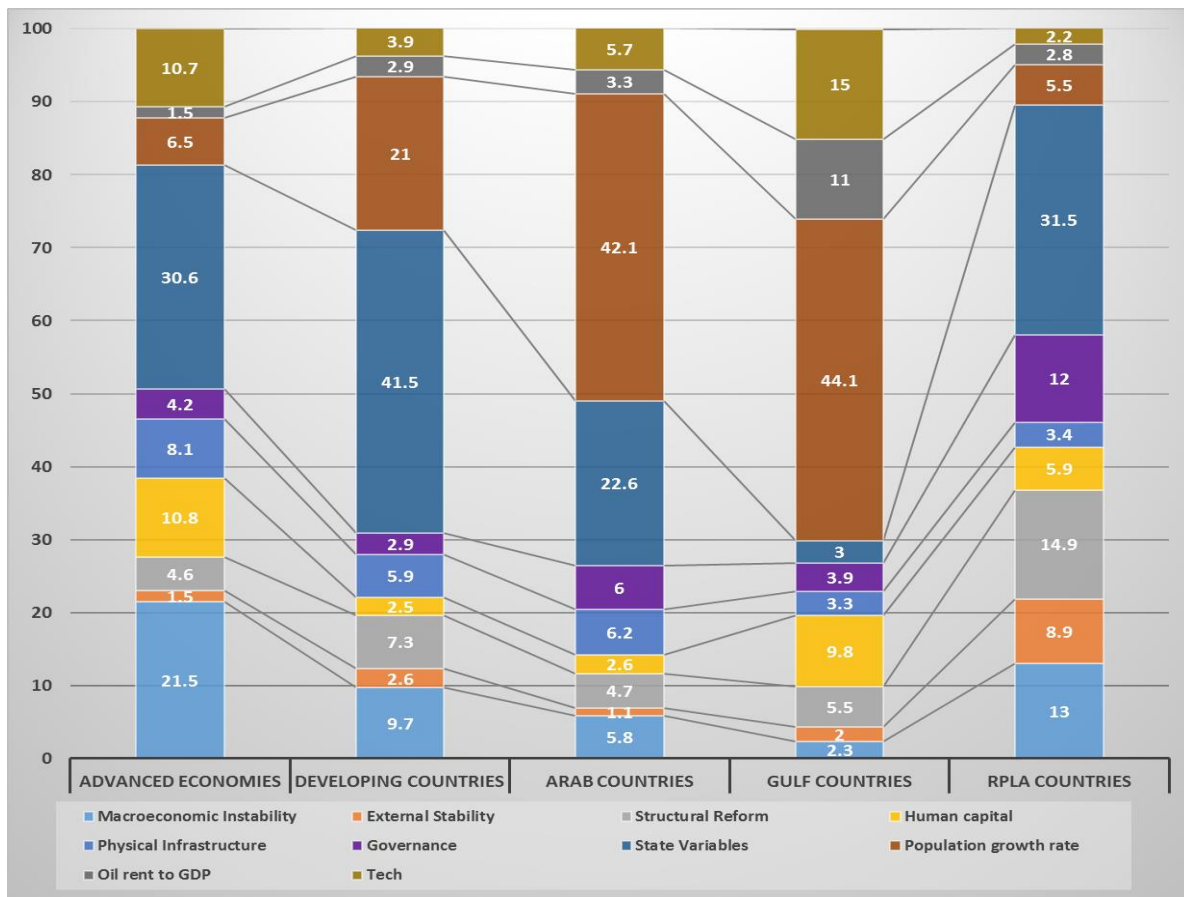
To highlight the previous findings regarding the importance of each component of the reform, this section discusses the contribution of key variables mentioned in the study's models using estimated Shapley values presented as in Tables 7.5.1 – 7.5.6 and 7.6.1 – 7.6.6. In this section, the analysis excludes the influence of both dummy variables: the global financial crisis and the Arab spring, for several reasons; The significant impact of the global financial crisis on the economic growth of advanced economies, as it explains around 45% of economic growth. All other factors of the model together account for the remaining part of economic growth. Second, the Arab spring factor had a considerable negative impact on growth rates, especially in emerging Arab countries, where it represented 32% of the total contributions. Although they are important, both events are a rare occurrence and including them may distort the relative contributions of the other key variable. Hence, these two variables are excluded to better view the impacts of other main variables. Especially that their elimination will affect neither the

relative proportions of the Shapley values explained by each of the variables nor the ranking in terms of their relative importance to growth.

As explained in Chapter Four in section 4.7.5, Shapley value decomposes explained variances (measured by the R²) of respective regressions into contributions over particular groups of regressors (Huettner and Sunder, 2012; Sheahan and Barrett, 2014). Not surprisingly, the results of all Shapley values as summarised in Figure 7.1 are consistent with both types of analysis; the regression analysis in this chapter, and the comparative cross-country analysis in chapters 5 and 6. In addition, the Shapley decomposition has interpreted a new linkage between findings within the same region or among samples as follows:

- Although the contribution of the ‘states variable’ which implies the concept of conditional convergence varied among world regions, it was the most important contributing factor to economic output in all regions with the exception of Arab and Gulf countries. Moreover, the contribution of this variable, confirms the conditional convergence hypothesis that poor economies tend to grow faster than rich ones; hence, the poor tend to “catch up”.
- It was also important to note that, overall, the contribution percentages of explanatory variables in emerging Arab economies were close to those in advanced economies. In the emerging as well as the advanced economies, the proportion of the primary targets of reform, macroeconomic stability and structural reform, explained more than 50% of the country’s growth, which was not the case in other Arab groups. Moreover, their state variable was about 30%, and the proportion of population growth was near to 6%. The differences in the contributions stem firstly from the difference in the level of technology, with the advanced economies being highly progressed, and possessing great technological infrastructure. Secondly, the contribution of governance level in RPLA countries was threefold that in developed countries. This comparison confirms the previous results; Arab reformers would have a high potential to achieve high economic growth if they implement an appropriate economic reform program. However, growth will not be sustainable without integrating the political and institutional reforms in the general context of reform.

Figure 7.1: Shapley decomposition results for sample groups (%)



Source: Author's estimations with details in Appendix 7.6

- The very high contributions of population growth rate in the whole Arab region (42%) and Gulf countries (44%) samples, are strongly attributable to the incredible population growth rates in Arab Gulf states. As can be seen in Appendix 7.7, the average population growth rate in the Arab region as a whole is 3% which is nearly twice that of developing countries and more than four times that of the world's high-income nations (0.7%). The population growth rate in the GCC states, with an annual average of 5%, has also been among the highest not only in the Arab region but also for the entire world over the last two decades. Some Gulf countries have also experienced an incredibly high growth rate. For instance, the average rate was 7% in UAE and 10% in Qatar, while it was 1.1 % in the United States, 0.4 % in Japan and Germany, and even surpassing Sub-Saharan Africa (2.5%). According to Mirkin (2010), numerous factors have contributed to such growth; a sharp increase in national births associated with high fertility rates due to a policy of encouraging citizens to have more children. Such a plan is backed by incentives involving free services, social welfare and cash allocations. Moreover, the continued influx of expatriates to benefit from expanding business opportunities has also contributed to high growth rates.

- Interestingly, the total contribution of the reform program's components in the samples of the Arab and the Gulf countries was approximately 25%, while three-quarters of the contributions were due to the abundance of natural resources, and human resources; represented by the rate of population growth. This result confirms the argument that the Arab states, in general and GCCC in particular, tend to rely on rent economies rather than on the macroeconomic variables which are prevailing in industrialised nations. On the other hand, the significant contribution of natural resources to the economic output could sharply change because of the oil price volatility. Notwithstanding progress in most of the Gulf States in diversifying their economies, the dependence on oil earnings remains almost absolute, and their political stability is directly linked to the high standard of living enjoyed by their citizens.
- The comparative contributing ratios of the governance component among the world's regions suggest that there could be a non-linear or possible inverse U-shaped relationship between governance and economic growth. The ratio was very low in developing countries, while it was very high and reached a peak in emerging markets and then dropped in advanced economies. This result is consistent with Barro (1996a) who has demonstrated the existence of an inverse U-shaped relationship between regime type and economic performance. He found that there is no significant difference between high and low democracies with regards to their impacts on economic growth, while semi-democracies in emerging economies clearly experienced higher rates of economic growth. This observed phenomenon of an inverse U-shaped relationship or the "Barro effect" is also supported by studies by Barro and Sala-i-Martin (1995); Chong and Calderon (2000); Law et al. (2013); Lee and Kim (2009); Plümper and Martin (2003). Despite the lack of theoretical ground, the variety of patterns between institutions and economic performance at different stages of income is increasingly considered as a 'stylised fact' of contemporary research and even made its way into political and economic textbooks (Drazen, 2000).

Plümper and Martin (2003) presents an explanation for the non-linear relationship between levels of democracy and economic performance based on government expenditure. When political participation is extremely limited, governments rationally choose bribery as a tool to buy political support. When democracy grows, the provision of public goods and services serves a different purpose and becomes more efficient in ensuring governments remain in power. In this instance, the government effectiveness, as measured by the provision of

public goods and services, would not only be appreciated by those who support it, but rather, it would also promote economic growth. Therefore, the argument is that improved freedom in an autocratic political system enhances the growth of per capita income. However, this holds true only for moderate levels of democracy. In political systems where levels of democracy exceed a certain point or are enshrined, governments still face further incentives to invest more in the provision of public goods. But such excessive public expenditures have a 'crowding out effect' and may undermine the private sector and hence reduce economic output.

In conclusion, this section highlights the potential and challenges of major reforms facing Arab states in achieving sustainable and inclusive growth: firstly, implementing appropriate and effective economic reform programmes that aim to achieve economic stability and structural reform, accompanied by other institutional and political reform programmes to ensure the continuity of progress. Secondly, investing in human capital is one of the essential keys to the real development of all Arab countries. The above analysis showed two critical factors; the mass increase of Arab population, especially young people; and the low rate of investment in human capital in the region and the weakness of its participation in achieving growth. If these unused resources were allocated effectually, they would provide a great opportunity for economic development.

Thirdly, supporting human capital must be followed by systematic development in the institutions of innovation and research within the Arab countries. In addition, they are opening up the enormous potential of the region's large and well-educated young population by embracing the modern economy. Broader and bolder reforms will be needed, along with critical investments in human capital. It will require the reorientation of the educational systems to research and technology, the creation of modern telecommunications, and a private-sector driven economy governed by regulations that support rather than stifle innovation. Lastly, the diversification and development of Arab economies structures to become less dependent on the oil sector are the most critical challenges and difficulties faced by the Arab development scheme.

All these recommendations following from the results of this chapter and the previous two chapters will be integrated into a single development framework applicable to Arab countries and taking into consideration the differences between the Arab groups.

7.9 Summary

The primary objective of the chapter was to contribute to understanding the economic, social and institutional reform effort of the Arab region and the extent to which these influence the level and differences in their economic growth. The chapter also confirms through a robust analysis of the conclusions from chapter 5 and 6 regarding the effectiveness of reform programmes on economic development. The focus was to understand how popular revolutions, such as the Arab Spring, may lead to better reforms and institutions, and therefore sustained and more inclusive growth. A conditional convergence economic growth model was estimated for six regions in the world; advanced economies, developing countries, the Arab region in addition to sub-samples of the Arab region - Arab Gulf countries (GCC), Arab emerging countries (Arab reformers) and Arab countries that have experienced civil war.

The reliability and consistency of the analysis were tested using several econometric approaches. Before testing for the existence of a long-run cointegrating equilibrium among the variables, the integration properties of each panel was examined by the Levin, Lin & Chu (LLC) and Im, Pesaran and Shin (IPS) tests. The panel unit roots tests did not confirm panel unit roots in level in all the series, except for structural reform and human capital, which was stationary in the first difference. The nature of co-integration was examined by the Kao and Pedroni tests. Additionally, four potential econometric problems, which could affect panel data analysis of least squares regression models; multicollinearity, heteroscedasticity, and autocorrelation, endogeneity, were assessed with the appropriate tests. Taking into consideration the heterogeneity of the countries, the fixed effect model was assessed to be most appropriate for both developing and developed countries, while the random effect model applied to the Arab sample, and the pooled OLS was appropriate for the three Arab sub-groups.

The significance of the macroeconomic instability variables in all regions support the argument that an economy, which has the desired degree of macroeconomic stability, would ensure trust in investors and promote business activities, and therefore economic growth. The result also shows that currency devaluation may improve growth in most developed and Arab countries, but currency appreciation was more efficient for the stabilisation of Gulf countries. Furthermore, the relationship between budget deficit and growth tended to be negative in advanced economies, developing and Arab countries. Public debt is another interesting factor, while it was significantly positive in advanced economies, it was detrimental in developing and Gulf economies. The analysis also confirms that unemployment is one of the most problematic issues not only for emerging countries but also for advanced economies.

Moreover, the analysis found the role of structural reforms to be highly significant for growth in all groups. Within its components, the coefficients of inward foreign direct investment (FDI) were positive and statistically significant for all regions. Remarkably, public health expenditures were negative and statistically significant due to the crowding-out effect of government expenditures. The other striking finding is the impact of scientific publications and technical journal articles, which was highly substantial only in developed nations.

Output contribution of infrastructure varied across study samples. Surprisingly, the effect of infrastructure was statistically insignificant in the advanced economies sample, while it was positive for both developing and Gulf countries. The latter group had the highest infrastructure effect, which helped to stimulate job opportunities and growth among all regions. This effect was entirely related to the size of public investment in these countries, including infrastructure. Inadequate supply of infrastructure may inhibit investment of productive capital, thus restrict and reduce economic production. This has been the experience of the emerging ACs or other ACs, which was reflected in the results for the whole Arab region sample.

The overall outcomes of institutional reform were consistent with the current literature that governance is positive and a statistically significant determinant of economic growth. For the whole Arab region, political stability and control of corruption were most significant, while government effectiveness and the rule of law were important for GCC, and voice and accountability, and regulatory quality were the most significant influences on growth in emerging Arab countries. We can, therefore, conclude that economic, and more importantly institutional reforms, are needed for sustained and inclusive growth in the Arab world, and in order to avoid widespread revolutions such as the Arab Spring. Moreover, different institutional variables may be relevant to the different parts of the Arab world. It is therefore, important for each of the countries to identify and focus on improving these variables to help with their individual development.

The Shapley decomposition was used to measure the relative contribution of each component to the growth rate. Firstly, the contribution of the "states variable" which implies the concept of conditional convergence was varied among world regions; however, in all cases, it contributes significantly to economic output. The population growth rate was found to contribute immensely to the growth rate in the whole Arab and Gulf samples and obviously explained by the incredible population growth levels in Arab Gulf states. The results also confirm the argument that the Arab states in general and GCC countries in particular, tend to rely on rent economies rather than on macroeconomic variables. The estimated ratios of the

governance contribution component among the world's regions suggest that there could be a non-linear or possible inverse U-shaped relationship between governance and economic growth. Good governance is good for growth, but at a certain level of governance, its impact on growth is limited.

This chapter has specifically highlighted the deficiencies and the opportunities of the reform programmes implemented in Arab countries during the period 1995 to 2014, which were explained in detail in Chapters 5 and 6. The analysis in this chapter also demonstrated the effectiveness of each of the variables of reform or environmental variables as in Appendix 4.1, that in turn stimulates the factors of production, thus leading to higher rates of growth and its sustainability. By identifying these effects, a development strategy can be devised to determine which factors are most sensitive to growth and which yet untapped. In addition, the Shapely decomposition analysis identified the relative contribution of each variable to growth, which means the possibility of setting development priorities for these variables.

Based on the assessment in the current chapter and previous analysis, the following chapter will propose and explain a broad framework for inclusive development in the Arab countries. It is hoped that this framework will ensure a more stable growth that integrates economic, institutional and social reform into a common framework, and specifically realise the slogan of the Arab revolutions in 2011 "Bread, freedom, and social justice."

Chapter 8

Towards an Inclusive Development Framework for Arab Reform

Chapter 8: Towards an Inclusive Development Framework for Arab Reform

8.1 Introduction

The economic development process has come to recognise that in policy reform, it is not just the “What” question that is important, the “How” question is equally important. Reform policy is far from a straightforward undertaking. It is a profound complex nexus of economic, social and governance elements. It affects the balance of power among agents in society; it involves identifying economic rents that have built up over the years and cutting them back, and it attacks the privilege that some have held for several decades. Therefore, it is not surprising that moving forward with comprehensive reform is an intensely challenging task.

This has been acutely apparent from the reform experience of the Arab region. Beginning in the 1990s, many Arab countries (ACs) have launched critical economic reforms in line with programmes prescribed by such international institutions as the International Monetary Fund (IMF) and the World Bank. These reforms were mainly concerned with privatisation and trade liberalisation, considered to be the tools to improve trading capacities and attract more foreign direct investment (FDI). More than two decades following the nascent reform movement, there is a subsequent slowdown in the pace of reform, the reform programmes do not seem to be appropriate in dealing with the Arab situation and the inability to tackle broader and more fundamental arrangements hindering growth. Thus those in decision-making positions must realise the importance of the myriad forces behind policy reform.

In the previous chapters, the various aspects of Arab reform were reviewed and assessed in detail. Chapters 5 and 6 employed a comparative heuristic approach to examine the outcomes of economic, social and institutional reform in the Arab region compared with those in other world regions. In chapter 7, econometric techniques were applied to robustly test the relationships found in the previous comparative analysis and then confirmed the effect of these relationships. Based on these analyses and from policy implications perspective, this chapter summarises the reform experiences in the Arab world and evaluates some of the key factors which have inhibited the implementation of a reliable and efficient reform programme. In addition, it presents a new framework which aims to contribute to an inclusive and integrated

development based on key economic, social and institutions variables and taking into consideration the distinctive features of each Arab group.

This framework is significant as it incorporates all dimensions of reforms and the inclusive nature of such reforms. The framework also acquires its importance as most previous studies were only interested in the economic aspects rather than other dimensions of reform, and the issue of a more inclusive structure of reform seems not to have received due consideration. Even in the economic arena, it is remarkable that sectoral and single-issue studies that focus on very few outcomes of the reform process dominate the scene.

The goal of such an ‘inclusive’ growth is to strike a balance between economic, social and political development. In other words, instead of only focusing on the economic outcomes as in traditional models, ‘inclusive’ growth focuses more on equity. That means every citizen has to be given a chance to participate in and benefit from development. Creating the conditions for inclusive and sustainable growth must promote transparency and accountability, and it enhances development cooperation outcomes through collaboration between civil society, governments and private sector actors.

Consequently, this chapter is divided into several sections: Section 8.2 discusses the progress of the Arab reform agenda, while section 8.3 presents the reasons behind the stalled reform agenda in the ACs. Section 8.4 presents the proposed development framework for the Arab world following the analyses and discussions in chapter 5, 6 & 7, with concluding statements in section 8.5.

8.2 The stalemate of Arab reform

Based on the previous analysis in this thesis and other related literature such as Abdelbary and Benhin (2019a;2019b); Badawi and Makdisi (2007); Bhattacharya and Wolde (2010); Bibi and Nabli (2010); Costello et al. (2015); Makdisi et al. (2006); Nabli (2007); UNDP (2011), the performance of the Arab reform agenda has been disappointing. Economic growth rates in Arab countries during the last two decades have been unstable, remarkably volatile and have not been inclusive (Abdelbary and Benhin, 2018). In addition, the Arab growth pattern is considered to be inextricably linked to numerous characteristics of most of the countries in the region, their heavy dependence on oil, low rates of returns on investment in physical and human capital, weak economic base, high population growth and unemployment rates, low level of integration into the world economy and underdevelopment of market institutions.

Historically, the state in Arab economies is the most influential economic player, overshadowing all private productive sectors. Neither the socialism of the 1950s and 1960s nor the neo-liberal economic reforms of the 1990s have been able to achieve sustained and inclusive growth. Similarly, existing political systems in Arab nations have been affected by revolutionary movements which emerged after independence. Some states, such as Iraq, Libya, Saudi Arabia, Syria, and Sudan, have managed to maintain full autocracies over the last 50 years. Other Arab dictatorships have applied minor political reforms to promote the concept of modern citizenship through the mechanisms of mass mobilisation while maintaining political and economic control.

In terms of economic reform, the programmes were intended to restore macroeconomic balance and structural adjustment to stimulate medium and long-term growth; restructure their markets based on competition and promote private sector development. However, all these reforms did not significantly affect the Arab citizens' standards of living of, and the pace of reforms and outcomes differed markedly throughout the region. Moreover, Arab reform experience, in general, has been slow, disappointing, selective, unenthusiastic and unclear.

Concerning macroeconomic stability, the majority of ACs have not achieved the required reform and have experienced various episodes of monetary and fiscal instability hindering their efforts to achieve sustained growth and integrate into the world economy. The significant improvements in the Gulf countries and Libya were based on substantial budget surpluses and lower inflation rates influenced by higher oil prices. However, almost all of the Arab States are faced with high unemployment which is among the highest in the world as a result of shrinking prospects for the main modes of employment creation from the past, and a rapidly expanding labour force attributable to high population growth and migration rates. The analysis confirms that one of the significant challenges facing the Arab countries over the next decades is job creation. According to the ILO, between 2004 and 2014, around 31 million new workers joined the stock of the Arab labour force and expanded it by more than a third. This is an exceptional challenge facing this region. It is estimated that a sustained annual economic growth rate of 6% will be required to create these employment levels.

Regarding structural and business reforms, the results have been more varied. While a few early reformers have implemented requisite reforms toward market-oriented, private sector-led economies, in addition to tax and banking reforms, others have pursued reform more sporadically and slowly. For instance, the structural reforms for GCC members have generally been insufficient and proved to be much more difficult than macroeconomic stability. But

mainly, the pace and magnitude of the reform effort have been inappropriate and weak. Furthermore, this analysis and other empirical studies have argued that labour skill shortages could well be another key constraint on growth in the Arab region. For example, Pissarides and Véqanzonès (2006), claimed that countries in the region continue to fail to deploy human capital efficiently despite high levels of education and this also seem to be the current situation as shown in this study. This is mainly due to the existence of large public sectors, which distort incentives, and because of excessive regulations in the industry. Additionally, Arab's production structures have experienced little diversification over the past 20 years. Contrary to world trends, the size of the manufacturing sector hardly improved in most ACs, whereas the relative sizes of the services and agriculture sector shrank (De Melo et al., 2012).

Moving to social status, most of the ACs in the last two decades has benefited from high oil prices, and hence, have a higher chance to achieve a better quality of life through, for example, higher expenditures on healthcare goods and services. According to the study analysis, Arab health indicators have sharply improved since 1995. However, the 17 countries in the Arab region still vary in their health outcomes, ranging from the long-life expectancy and low maternal mortality rates of the oil-rich Gulf States to the poor health indicators of other countries, such as Yemen and Sudan. Regarding physical infrastructure, some ACs performed better than other states with comparable incomes. The Gulf countries in particular rank above the world average and outperformed the rest of the region's countries. However, inadequate physical infrastructure extends to the rest of the ACs as investments have been insufficient for sustaining an adequate public provision of healthcare, electricity, water and sanitation services.

Finally, concerning the political and institutional reform as presented in chapter 6, was more in the spirit of "political liberalisation" rather than actual "democratisation", owing to restrictions on political rights ensuring they do not expand to levels that would allow the citizenry to exercise greater collective control over public policy. The outcome provides the starkest evidence of the mismanagement and misrule by many of the region's governments, which use severe repression to control their people. The results also point out that in addition to repression, autocracies rely for their survival on patronage relationships. Oil wealth has supported and sustained regime durability in oil-rich autocratic regimes irrespective of the degree of widespread repression, while in some other autocracies economic crises have paved the way for the initiation of the democratisation process. In fact, maintaining the rule of law, improvement of democracy, independence of the judiciary, and equal opportunities will expand the chances of successful development in the Arab countries and avoid any civil conflicts. This

will be essential to accelerate the region's integration in the global trends of political, economic, human and cultural development.

Overall, although some progress has been made in some countries, ACs performance is still the worst among the world's regions. This is resulting from the Arab reform agenda, which has avoided most governance transformation or opening up of the political space, needed for any profound changes. In fact, achieving a more profound change depends on the participation of the social groups whose well-being the reforms are intended to improve (Bibi and Nabli, 2010). Consequently, the reform effort did not provide an enhanced climate for business and investment. As noted before, these failures in the Arab region have strongly been attributed to igniting a wave of protests that spread throughout most of the region, popularly referred to as the 'Arab Spring'. Since then, Arab nations have been going through an unparalleled time of severe and painful choices that bear far-reaching consequences.

8.3 The failure to provide inclusive reforms

The analysis also addressed the factors that have deeply frustrated reform effort. Arab governments have justified the status quo by the regional security concerns and conflicts, and thus the need to avoid risks of instability due to change and reform. Recently, the political and security turmoil and the economic deterioration witnessed in the Arab region has been used, following the Arab uprisings in 2011, as evidence of their perspective that such reforms should be managed through stable political systems, even if they are autocratic, in order to be peaceful. Moreover, they argue that these reforms should not extend to the institutional or political aspects as this may directly lead to chaos.

While there is a heated debate about the validity of such justifications, and it can be argued that such factors have played some role - with variations among countries - in delaying reforms, there are several real factors which stand out and relate to the structure of the reform programmes themselves.

Firstly, the ability to continue to rely on oil and strategic aid to delay implementing an extensive economic reform program. The analysis showed that the high oil dependency had prevented the shift to structural reforms and diversification of production. The substantial earnings from oil mainly from 2004 to 2012, have granted Arab rulers and the public a temporary feeling of economic strength. This, along with foreign aid and strategic rents, has permitted Arab governments to adopt limited reforms and delay reforms needed for sustainable growth and

higher standards of living. In addition, the flow of hydrocarbon rents can undermine civil society and stunt the growth of a workforce, diminishing the capacity of populations to face serious challenges from their regimes. The oil wealth seems to have hindered democracy by providing rulers with the resource to buy the loyalty and quiescence of their citizens, or to purchase the means to silence them by force.

Secondly, good quality reforms are primarily linked to political stability and the absence of violence. Countries which were under or still suffering from civil wars and armed conflicts have destroyed their human capital, infrastructure and economic stability. The internal and external violent conflicts have provided strong arguments for Arab authoritarians to excessively expand their fiscal capacities and military infrastructure in order to control the country resources and postpone any real political reform in the name of "protecting national security". Arab states that experience civil wars are already those countries that suffer from inferior governance practice. The comparative analysis confirms that the relationship between civil wars and quality institutions is bi-directional; as violent conflicts destroy the governance system; weaker institutions then lead to the more likelihood of further civil conflicts.

The third factor is related to the nature of the macroeconomic structure in a number of Arab countries which lead to the complexity and difficulties of macroeconomic problems. For instance, there is a strong positive association between unemployment and inflation in only Arab countries, a relationship which is different from the well-known Philips curve. Moreover, the twin deficits hypothesis is more prominent in Arab economies than the rest of the world. The strong positive correlation between the deficits in the budget and the current accounts balance increases the difficulty of achieving economic stability.

Fourthly, the Arab political reform has failed in its objectives, mainly due to the absence of democracy. The deficiency of the voice and accountability metric is closely related to the historical "democracy deficit" of the Arab region, which has kept many dictators in power for many decades. The analysis manifested that Arab countries form the world's largest set of autocratic regimes. They have the highest rate of political grievances, especially those arising from the "democracy shortfall" of longstanding dictatorial rule, widespread governmental corruption, restricted opportunities for participation in public and political life, a deteriorating justice system, and an oppressive security apparatus well-known for torture, arbitrary arrests, and other human rights violations. This extractive environment had led to the absence of inclusiveness and accountability, which is certainly an important factor causing reform stagnation. This has led to the absence of pressure groups; whether organised political

opposition or civil society organisations, to push Arab governments towards implementing deeper reforms and more rational public policies.

The fifth reason is linked to the structure and the design of the programmes. The mainstream reforms have been launched and executed via a top-down approach. Affected groups have had little to do with the formulation of policy plans. Therefore, constituents have shown minimal commitment to the implementation of policies, especially when the associated economic and social costs are painful such as reducing subsidies, liberalising commodity prices and reducing the value of the local currency. Arab states seem first to initiate reform and then consider how it may fit into a comprehensive strategy guided by a visionary framework.

Finally, even where partial reforms have taken place, the resistance to both economic and political reform was significantly strong. The destructive resistance comes from elites who enjoy close relations with regimes and benefit from the prevailing status quo arrangements. Several cases illustrated in Chapter 6 show how this resistance was destructive due to attempts to prevent reforms from being introduced in the first place, or hinder the implementation of change, or otherwise influence and skew the reform process in a self-serving way. Therefore, this chain of reform resistance is made possible by the concentration of political power in few hands that make full use of the concentration of the economic powers at their disposal, and hence economic corruption paves the way for the ineffectual reform agenda, which is a natural consequence of political corruption.

8.4 Moving forward to an inclusive framework for reform

Following the analyses and inferences made in chapters 5, 6 and 7, the results of the study can best be considered in the context of policy implications. The study proposes a new framework, as shown in Figures 8.1-8.4, which presents a specific vision of reform in the Arab region. While the first framework is based on the results of the comparative analysis in chapters 5 and 6, the other three frameworks illustrate what has been confirmed by the regression analysis in chapter 7 for the Arab region and its sub-groups; the Arab region as a whole, the Gulf States and the emerging Arab countries. For example, Figure 8.1 highlights the importance of institutional reform for development, while subsequent frameworks illustrate which components of this reform are more critical for each specific sub-region and country. A similar approach was taken for economic reforms and other external influences.

In all the proposed models, the study argues that Arab reform must go through three key stages which are necessary to achieve sustainable and inclusive growth. The first phase involves political and institutional reforms, the second phase relates to economic reforms, both macroeconomic stability and structural reforms, while the third phase emphasises the social reform aspect. The first and second phases will drive a steady increase in the economic growth rate, which will lead to an increase in income per capita. These will then reflect positively on the social reform by expansion in spending on public goods and human capital, which will also indirectly enhance economic growth.

In addition to these stages, there are three exogenous factors which affect the relationships in this framework. First, natural resources abundance, despite its positive effect on improving the overall stability of the countries' economy, it clearly undermines the efforts of structural reform, as well as the development of institutions and political change. The second factor is civil wars that prevent any political or economic stability and destroys physical infrastructure. The last is the population growth rate, which is the highest in the world and leads to the rapid erosion of economic growth. The rest of this section describes each stage of the proposed framework. In conclusion, the research argues that applying these frameworks will lead to a more stable, sustainable and inclusive development for the Arab world.

In order to facilitate a better understanding of the frameworks, variables presented in red circles indicate that they have adverse effects on growth, and the arrows emerging from them are also in red colour to show a relationship that reduces economic growth. In contrast, green arrows, are pointing to relationships that contribute positively to the growth rate, while the dashed green arrows represent indirect relationships.

8.4.1 The general framework for a comprehensive Arab reform

Phase 1: Political and institutional reform

Based on the framework in Figure 8.1, addressing the institutional reform aspect is considered the central challenge of moving the Arab reform forward. The experience of developing countries shows that successful economic reform that creates sustained, and equitable economic development cannot be undertaken in isolation from sound institutional reform. The study results suggest that institutional reform should not be seen in a vacuum, in isolation from the economic and social choices that society makes but instead embedded in these choices; it is a complementary and reinforcing agenda. This result is linked directly to the New

Institutional Economic theory, as discussed in chapter two, which argue that institutions matter in shaping national economic behaviour and overall performance.

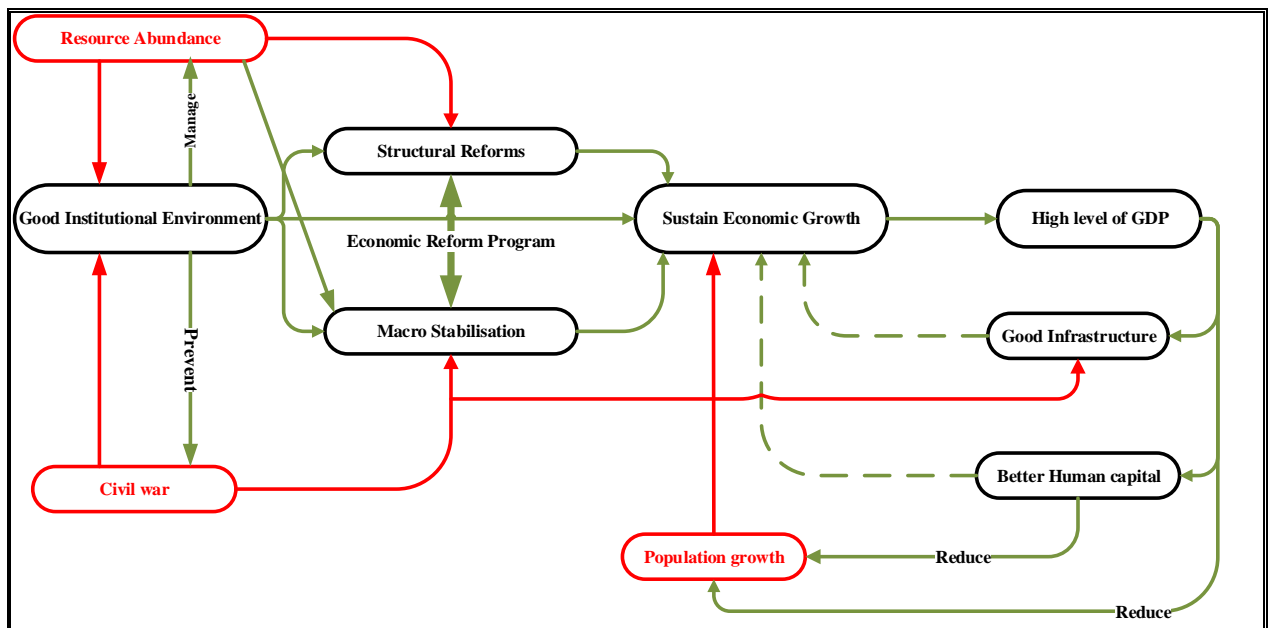
Better governance has strong linkages to determinants of sustainable growth in the model, which directly supports structural reform and macroeconomic stability, contributes to the promotion of equitable economic growth, helps to prevent the possibility of civil war and encourages the rational and fair use of natural resources. Sustained development is caused by a society adopting institutions and policies that create incentives for its citizens to save, invest, and innovate.

The direct effect of good governance produces an incentive that reduces uncertainty and promotes productivity, thereby contributing to growth. Without the formulation, protection, and enforcement of property rights, the market structure and business activities will not be competent. Appropriate regulatory management improves investment prospects, enhances an efficient policy-making environment, and promote the legitimacy of public institutions that support markets. Based on a strong relationship between activities that promote the competitiveness of firms and a country's growth, governance could be considered an influential tool to create a supportive environment for private enterprise growth. Good governance involves removing impediments to business activity, cutting red tape for existing firms and making it easier to start new businesses. In addition, a stable institutional environment requires building stable legal and political institutions to create a practical framework for operating firms. Good governance also enhances the ability of governments to use macroeconomic measures to stimulate saving and investment, control public spending, monitor and regulate markets, provide physical and technological infrastructure, and help create an appropriate environment for competition and thus growth.

Therefore, institutions could enhance the benefits of economic reform through effective public policy, and an improved bureaucratic, administrative, and commercial environment and thus can support growth. Good governance reduces the scope of autocratic government policymaking. By ensuring public accountability of politicians and officials, it also contributes to the effective implementation of economic reform policies that promote growth. Furthermore, better institution conditions will act as a positive incentive for all society members, especially for enterprises by improving bureaucratic performance, and reducing uncertainty and the costs of doing business.

Additionally, institutions play an essential role in constraining and eliminating civil wars and armed violence, which are among the leading causes of economic failure in the Arab region. Civil wars are much more likely to occur in countries where government officers are unaccountable to the public, the public does not engage in political life, and where information is not transparent. Building good quality institutions lead to a more peaceful environment: first, governance works as a check on executive power which drives governments to serve the interests of a wider population and thus creates fewer motives to use violence in the society. Second, it restricts repression by governments and creates different nonviolent pathways to influence government policy, and therefore use peaceful tools to promote change. Finally, strong political and legal institutions create a situation where civil opposition need not fear the threat of violence in holding political elites to account.

Figure 8.1: The general framework for Arab reform



Source: Author based on analyses in Chapters 5 and 6.

Phase 2: Economic Reform

The second phase, which is the implementation of the economic reform program, comes in the form of structural reform and macro stabilisation (internal and external). It is considered essential for any required progress to turn to market mechanisms, increase competitiveness, attract more internal and external capital to increase investment rates, enact labour market, tax system reforms, and improve subsidy programmes.

An efficient implementation of economic programmes leads to the reduction of chronic economic problems suffered by most Arab states, such as permanent budget deficits, and high rates of inflation and unemployment. Better targeted structural reforms have become necessary for all countries in general and the Gulf countries in particular. The Gulf countries suffer from sharp fluctuations in the rate of economic growth due to their reliance on oil resources without fundamental reforms in the structure of the internal economy. This hinders all the diverse strategies aiming to use oil revenues to stimulate other sectors of the economy. Similarly, the Arab reformers must begin appropriate steps towards supporting macro-stabilisation policies alongside structural reforms where significant progress has been made. The use of appropriate fiscal and monetary policies is essential for achieving such stability.

Importantly, given the strong link between economic and governance reform, there is the need to apply them simultaneously. Moving the economic reform programmes beyond their current limits require encouraging social discussions about the reform of the labour market and tax system, restructuring redistribution programmes, and redefining the terms of a new social contract. There is a need for political reform to secure the legitimacy of reform and the reliability of government responsibility. The apparent preference of Arab regimes for political and social stability has often been used as a justification for not proceeding with an effective and broad reform agenda that is needed for Arab economies to regain dynamism and meet their challenges. However, the costs of maintaining a non-viable status quo have become very high and may undermine the advantages of the implied stability, especially after the waves of the Arab uprising in 2011. Political reform, which would strengthen political inclusiveness and accountability, becomes critically linked to economic reform. The social and political dialogue is likely to produce an economic reform coalition able to carry forward the reform agenda and overcome resistance to it.

Phase 3: Social Reform

The result of political and economic reforms would be an improved business and investment environment, higher growth, greater opportunities for employment, enhanced standards of living, and lower poverty for the Arab region. This prosperity would reflect directly on the provision of public goods. Providing education and health services to people are among the best ways of improving the quality of human resources. Thus people can work more efficiently, productively, resulting in higher economic progress. Additionally, developing physical infrastructures such as electricity generation, transportation, telecommunication, improved

water resources and sanitation will significantly impact on the factors of production by increasing the productivity of labour and hence promote sustainable economic growth.

Furthermore, the social reform agenda should be implemented alongside economic reforms. This is especially true with the austerity policies, which may entail greater insecurity and job losses for some groups. Some economic sectors may be negatively affected; inequality may increase as wages, and returns to education become more market-oriented. These risks highlight the necessity for thoughtful design and sequencing of reform. Careful monitoring and early corrective interventions are required but without backtracking and stop-and-go policy change.

- **Other Influential Factors**

Regarding the external factors presented in the framework, the analysis has provided evidence that there is no doubt that these external factors have contributed to the unfortunate state of the region. Violence and civil war have seriously impeded the pace of reform. The persistent regional conflicts have substantial effects, making it less attractive and costlier for business and investment, both domestic and foreign. Conflicts have drained resources to less productive uses in the military and for security. They have undermined the development of structural reform and good governance. Although the international community bears some responsibility to help the region establish regional stability and security, the major responsibilities remain within the region itself.

Secondly, resource abundance is generally perceived as a source of economic stabilisation and growth. Because of its ability to generate income, savings, and investment, it is believed to reduce economic problems such as unemployment, and the general budget and current account deficits, enabling governments to provide public goods. However, Arab oil exporters, heavily dependent on fuel revenues, are constantly vulnerable to the double whammy of oil prices volatility, and sluggish growth.

Furthermore, structural reform strategies were delayed or neglected by the governments in the light of temporarily high gains that can be obtained from natural resources. Resource extraction is vastly more lucrative and out-competes other industries, which makes economic diversification seem challenging. Additionally, the abundant revenue from natural resources discourages long-term investment in non-oil sectors needed for a more diverse economy. The analysis also shows that the resource curse in the region is conditional on weak institutions. Therefore, a proper governance system is necessary to limit abuse of political power and hence,

the misuse of resource rents. Several studies such (Elbadawi and Soto, 2012; Jensen and Wantchekon, 2004; Joya, 2015; Sachs and Warner, 1995; Sarr, 2009; Selim and Zaki, 2016; Venables et al., 2007) show that resource-rich economies with a high degree of inclusiveness, democracy, strong political checks and balances can turn the resource curse into a blessing.

Resource abundance in a country may not cause a governance deficit but could make it more difficult for good governance institutions to emerge. Some resource-rich nations such as Botswana and Norway have high-quality governance institutions and have turned mineral resources into productive assets (Elbadawi and Gelb, 2010). However, the situation is more difficult for most ACs, where the inflows of oil revenues flowed directly to the government by-passing the building of institutions therefore further raised the stakes for those already in power to hold on to it. In contrast, European countries resource extraction was going hand in hand with bureaucratic regulation; while nation-building proceeded, natural resources were never dominating over government revenues (Soto and Haouas, 2012). Therefore, institutional and structural reform act as a shield against the resource curse by widening the country's economic base in a way that progressively delinks economic growth from resource abundance.

Lastly, regarding the demographic factor; or population growth rate, which accounted for the highest percentage of aggregate real GDP per capita growth over the past 20 years (as demonstrated in the Shapely analysis in chapter 7), it was substantially higher than in any other region. In fact, the high fertility rates combined with rapidly declining mortality rates contributed to a sharp increase in the average population growth rate. It reached 3% in the whole Arab region, which is nearly double the rate for developing countries, and four times that for the world's high-income nations. The high population growth rate generated a rapidly growing labour force, while most ACs were unable to generate a sufficient number of jobs for new entrants into the labour market. The situation is especially critical in the Arab countries of Northern Africa, where more than 2 million young adults (30%) are unemployed. Faced with increasing marginalisation, many Arab youths have resorted to migration, which results in increasing loss of human capital in these countries. Perhaps this factor was one of the important factors driving the youth to revolutions during the Arab spring wave in 2011.

8.4.2 The specific frameworks for the Arab region and its sub-groups

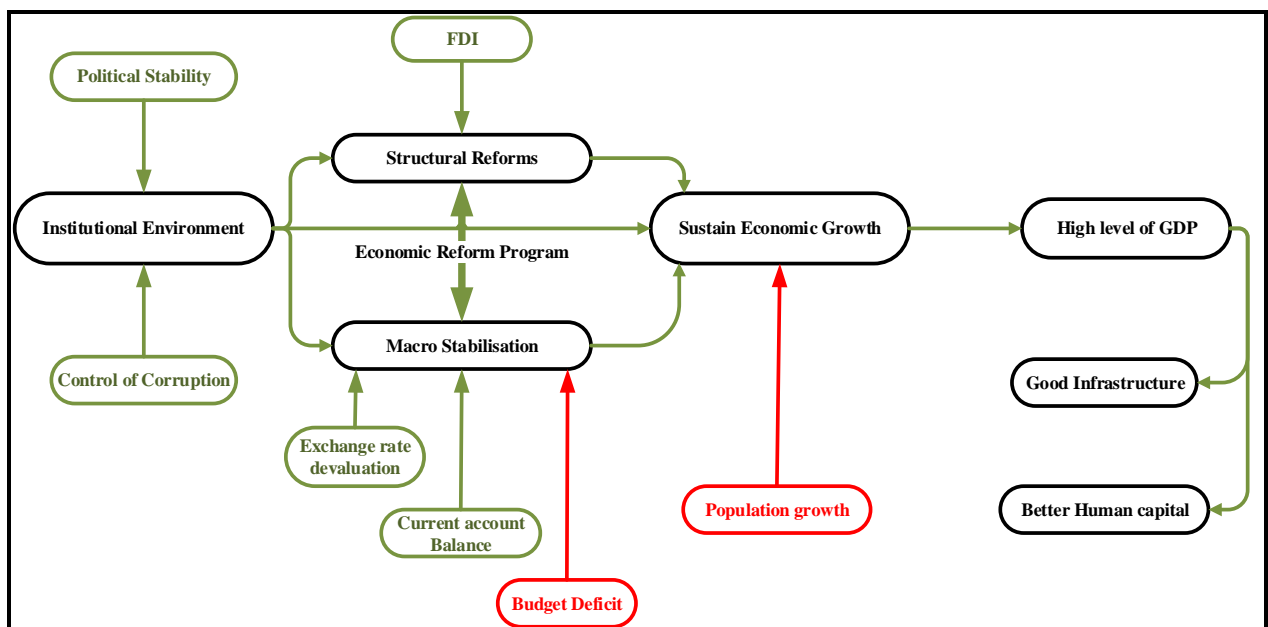
The three frameworks in Figure 8.2, 8.3 and 8.4 were built based on the econometric analysis of Chapter 7, that tested which of the variables of the study are more influential on the political, economic and social reform in the Arab region as a whole and its sub-groups. While Figure 8.2

shows the relevant variables for all the Arab countries, Figure 8.3 focuses on the Gulf countries and Figure 8.4 concentrates on the emerging Arab economies.

- **Institutional Reform**

Starting with the institutional environment, the results confirm the positive and statistically significant relationship with economic growth. The most striking result is that all components of governance were found to be fundamental variables for all Arab groups. For the whole Arab region, political stability and control of corruption were most significant (Figure 8.2), while government effectiveness and the rule of law was important for GCC countries (Figure 8.3), and voice and accountability, and regulatory quality were the most significant influences on growth in emerging Arab countries (Figure 8.4). Therefore, the quality of governance has a fundamental impact on the ultimate economic development in the region. For instance, the functioning of the market system is maintained by creating institutions that protect property rights, a judicial system that administers justice and enforces contracts, thereby affecting the incentives for production and investment. Further, good governance supports a low transaction cost and a competitive environment for innovation, adoption of appropriate technology and sound economic policies.

Figure 8.2: Framework for Arab reform

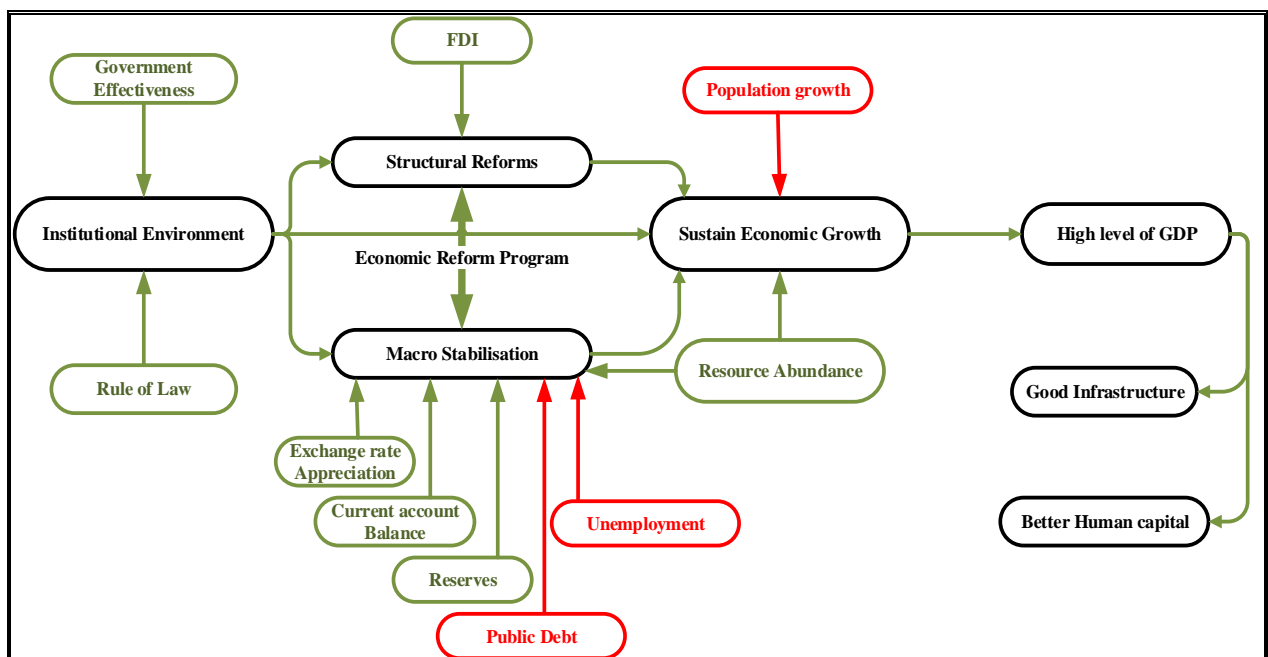


Source: Author based on the analysis in Chapter 7.

Firstly, the empirical evidence of the study demonstrates that there is a positive relationship between corruption control and economic growth. Curbing corruption in the Arab region could

promote economic growth by encouraging foreign and domestic investment, increasing taxing revenue and boosting entrepreneurship, improving the quality of public infrastructure and composition of public expenditure. Addressing the reasons of corruption in the Arab region is certainly challenging, as it entails a radical reform of the political and economic structures in place, as well as the introduction of appropriate legislation and mechanisms of accountability and transparent governance. Additionally, combating corruption in most ACs is likely to face enormous resistance from privileged elites who benefit from a corrupt system. That explains the reason why the political dimension of anti-corruption reforms is seen as a major challenge and a potential obstacle in the region. Furthermore, building strong anti-corruption institutions, according to Gupta et al. (2002); Perera and Lee (2013) should promote income equality among social classes and enhance the fair distribution of national resources. However, to successfully introduce anti-corruption reforms, there must be a genuine political will to address the problem, alongside public support for reforms.

Figure 8.3: Framework for Gulf countries reform

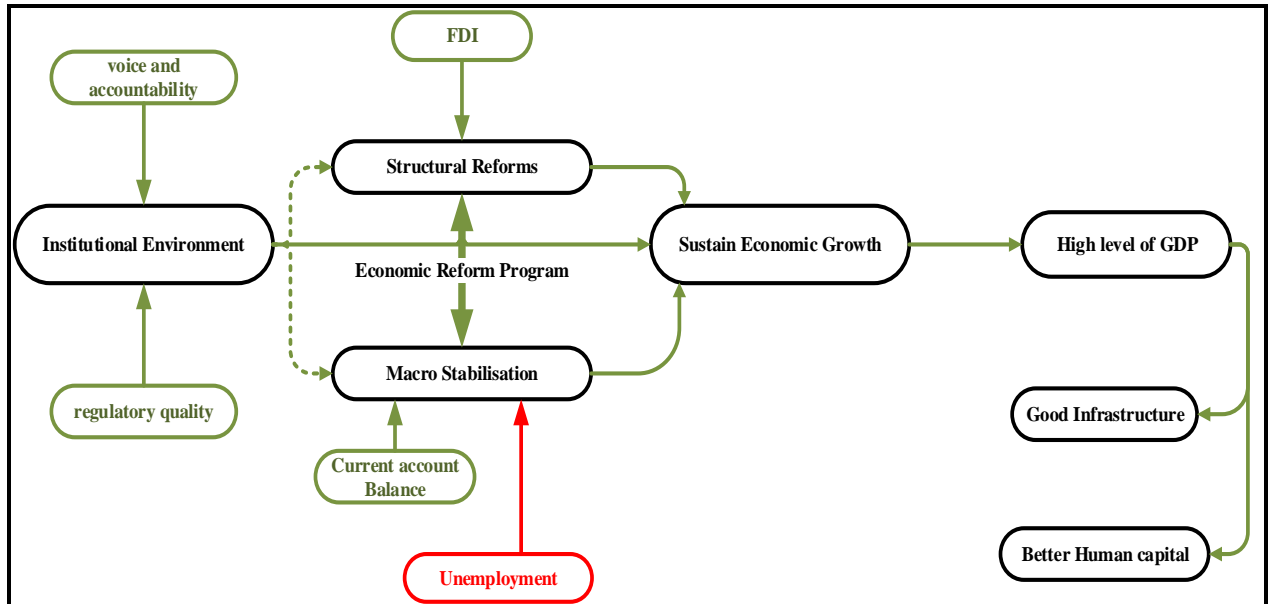


Source: Author based on the analysis in Chapter 7.

Regarding Figure 8.2 and 8.4, the outcome of the analysis highlights that democratic development can be a strong lever for economic growth for the whole Arab world and the emerging Arab countries, and thus these countries should strive for democratic regimes that are sustainable especially after the massive protests in 2011 that were asking for freedom. Enhancing the level of democracy leads to producing good governance, improving the investment climate and allowing the emergence of a dynamic private sector that can contribute

to meeting the current development challenges of the region, which needs to accelerate its economic growth rates to absorb the fast-growing labour force.

Figure 8.4: Framework for emerging Arab countries' reform



Source: Author based on the analysis in Chapter 7.

Specifically, for the emerging economies or the Arab reforms, improving voice and accountability during the process of structural reforms, led to income redistribution and higher taxation which may result in higher human capital accumulation, through providing larger subsidies and dealing with capital market failures. In addition, democracy could better handle already existing economic instability through the political process which allows citizens to peacefully and regularly oust inept, inefficient, and corrupt public officials and to retain more efficient and successful regimes. It also facilitates freedom of the press, which can monitor corruption and disseminate information on government executives to the public, so that they can be held accountable.

Remarkably, in the early stage of emerging democracies such as Egypt after the 2011 revolution, until now, the level of corruption remains high, which demonstrates the absence of or the ineffective rule of law and lower levels of bureaucratic quality. Thus, the politicians running for elections are enjoyed less credibility and are unable to make reliable promises to citizens. Hence, they resort to over-providing transfers to limited groups of voters and excessive rent-seeking. Additionally, in this premature phase of democracy, it may lead to some level of political instability, and less negative effect on economic growth, compared to authoritarian regimes, where any shocks or expectations of changes in leadership may have a

larger negative effect investment and growth. For instance, after popular revolutions led to the overthrow of Ben Ali and Mubarak regimes in Tunisia and Egypt, the growth rate dropped from around 7% to less than 2%, and new investment rate fell to negative. In fact, international experiences denote that output growth could slide during the democratic transition, but then fluctuates at a higher rate, suggesting a “short-run pain,” resulting perhaps from high transition costs and learning, followed by “long-run gain,” resulting from higher growth after the consolidation of democracy.

The second significant factor which promotes economic growth in the emerging Arab group is was regulatory quality. The importance of this element comes from its support for structural reform programmes through encouraging a market-friendly environment, fostering market competition, improving the liberalisation of markets, and financial sector deregulation.

Democracy and regulatory quality complement each other in enhancing economic growth. A sound regulatory system is one that supports accountability and transparency while democracy requires regulatory agencies to be accountable for the consequences of their actions, to operate within their legal authorities, and to observe the rules of due process when making decisions. Transparency ensures that regulatory decisions have been reached in a way that is very clear to interested parties. Inconsistent regulatory choices lead to uncertainty for investors, which raises the cost of capital and may severely damage the willingness to invest.

For Gulf countries, the importance of the government effectiveness element (Figure 8.3) has come from the ability of governments to design and deliver effective policies as well as the provision of public goods and services which determines the extent of an economy’s growth. The ability to efficiently provide these public goods creates a healthy environment for business and investment, which promotes development. The failure to improve the level of governmental services performance and raise the efficiency of the bureaucracy impedes economic growth by discouraging investment, dampening entrepreneurship, lowering the quality of public infrastructure, and distorting the composition of public expenditure. It is important to mention that GCC countries’ governance effectiveness factor was the most influential one in the whole model. This is due to their strategy to expand the quality of administrative bureaucracy and substantial public investment in social and economic infrastructure.

Notably, since most Arab countries suffer from excessive employment in the public sector, reducing the size of the civil service as a part of economic reform may be necessary for fiscal

reasons. This reduction could improve the overall working environment for those who remain; however, the reduction is unlikely, in itself, to improve performance unless it is part of a policy aiming to reduce the tenure of nonperforming civil servants. For instance, changing governance mechanisms, thereby improving capacity and incentives within a government, could support the efforts in private investment, trade, and economic diversification.

Lastly, in GCC countries, the rule of law is a key element of governance. According to North (1990), without rules, opportunism predominates, and the consequent disintegration of trust reduces the number of transactions. Adherence to the rule of law is manifested by the maintenance of property rights and the absence of corruption. In the theoretical literature, rightist is as a feature of the rule of law is considered one of the essential pillars of a free market economy. Well-defined property rights are an influential determinant of economic growth through their effects on investment level. The relation between property rights and growth runs through the incentives individuals have to invest and trade when such rights are secure.

Moreover, institutional checks on executive discretion are seen as integral to the very concept of the rule of law. Such checks and balances are economically necessary because of the classic time-inconsistency problem that governments not only have the power to renege on their commitments but also incentives to do so. As a result, the rule of law, property rights, and contract enforcement cannot be credible unless there are practical limits on executive discretion (Haggard and Tiede, 2011).

- **Economic Reform**

In the second phase relating to the element of structural reform, the notable outcome from the analysis was that inward foreign direct investment (FDI), was common in all frameworks (Figures 8.2, 8.3 & 8.4) There is a strong argument that FDI could actively encourage economic growth in host countries through several channels. Firstly, since economic growth is primarily capital-driven, FDI could augment domestic capital accumulation, complement limited domestic savings in host countries by reducing the cost of capital, or it might even increase domestic investment in the presence of complementarities and thus enhance the potential for economic growth. Secondly, FDI could improve Arab growth through positive externalities by enhancing endogenous factors of production, such as knowledge and technology. Inward capital flows can bring productivity gains by transfers of technology (adoption of new production procedures), skill acquisition (education and training of workers), competition

(efficient use of existing resources by domestic firms), and exports (expansion of the export potential of domestic firms).

Although the comparative analysis in chapter 6 shows that the Arab region, with the exception emerging countries, is not well connected with global investment and production chains, the region has good potential to expand trade and attracting more foreign investment. The Arab region has three main characteristics that could lead to higher foreign investment; non-oil trade performance, abundant natural resources, and high population growth. For instance, if exports other than oil increased, given a better investment climate, domestic private investment in traded goods and services would be greatly increased, since predicted levels of FDI requires a large volume of trade. Additionally, natural resource endowments also often lead to higher levels of foreign investment, as many multinational companies have interest in the exploration of and drilling for these resources, as well as participating in the petrol chemicals sector besides domestic corporations. Lastly, the size of the market may matter, with larger countries expected to receive higher investment inflows (market-seeking investments). For example, in 2014 Egypt was ranked 119th in the global competitiveness index while it ranked 29th in the market size index (Schwab and Sala-i-Martin, 2015), this divergence reflects a very high potential to expand investment capital in the domestic Arab markets.

The analysis in chapter 7 also showed a significant positive effect of macroeconomic stability reform and its elements on economic output in all the Arab region samples. This suggests that favourable macroeconomic stability would ensure a degree of certainty and confidence in investors, provide incentives for more productive activities, which in turn will encourage agents to invest a make correct decisions regarding the allocation of resources to alternative projects and consequently promote economic growth.

Achieving macroeconomic stability according to the three frameworks requires full coordination between the three economic policies: fiscal, monetary and commercial policies. For example, implementing an appropriate exchange rate policy requires corresponding monetary and fiscal policies. Fiscal policies and structural reforms that affect price developments would normally have monetary policy implications. Hence, a stability-oriented monetary policy would take fiscal policy measures into account.

Figures 8.2 and 8.3 show that for the whole Arab region, economic policies should focus on exchange rate adjustments, devaluating the currencies of all, and appreciating those of GCC. A surplus in the current account balance is also an essential requirement for the desired stability

for all three groups. A current account surplus is expected to boost economic growth through encouraging employment. High exports lead to increased employment in the export sector, and at the same time, lower import spending may imply that people are consuming more local goods and less foreign goods. This higher demand for domestic products once again helps to increase domestic employment.

However, to ensure that these gains are achieved sustainably, new trade and industrial strategy should be introduced to diversify production and increase product quality. In fact, the Arab region has excellent potential to expand foreign trade. According to Iqbal and Nabli (2004), Arab exports other than oil are a third of what they could be, given the characteristics of the region, and openness to manufacturing imports is half of what would be expected. There are several ways to increase Arab share of world trade: First, because the present level of the region's presence in world markets is small, an increase is unlikely to be resisted by major trading partners. Second, competitiveness based on low wages is possible, since the region's average wages rank in the bottom half of world wages. However, as discussed before, for competitiveness to be sustainable, overall trade policy and investment climate will have to be improved. Third, most Arab countries have trade agreements with key international partners, in addition, the region is near to a high-income region, across the Mediterranean is the EU, which can potentially be a source of high demand for regional products.

Furthermore, the governments' fiscal reform is one of the most important components of the economic reform for the Arab group as a whole (Figure 8.2) as well as for the Gulf States (Figure 8.3). In the whole Arab region, reducing the general budget deficit was the desired financial purpose, while in the GCC countries, reducing public debt was the aim of economic stability. Both objectives tend to make a considerable scope for fiscal reform to utilise the effectiveness of expenditure items and reduce the current vulnerability of government revenues to external shocks. Arab economies have sufficient budgetary space for well-targeted public developmental expenses to lay the foundation for a positive structural transformation.

The realisation of this potential is contingent upon implementation of a set of policies to raise more resources through adopting an appropriate tax policy and switching expenditures away from costly and ineffective subsidy programmes and military spending. According to UNDP (2011) with the right combination of policy choices and proper oversight mechanisms, most ACs can increase public investment by at least two percentage points of GDP. The scope for additional investment can be expanded substantially through regional action whereby major oil-export countries, who do not have a fiscal problem, invest some of their oil revenue within

the region. In the short run, emerging economies that require a permanent increase in public investment need to assess the desirability of the fiscal extension by measuring the possible short-run macroeconomic implications such as a moderate rise in inflation and fiscal deficits against the expected long-term benefits. Moreover, in states where the scaling up of investments is initially financed by Official Development Assistance (ODA), a policy to exit from aid becomes operationally necessary to secure long-term fiscal sustainability.

- **Social Reform**

Generally, in all Arab groups, it was found that achieving institutional and economic reform leads to a high and sustainable growth rate, and thus the ability to increase expenditure on public services and human capital, both of which reflect sustainable and inclusive economic growth.

The main human capital challenge in the Arab world are the failures of the educational systems. The analysis highlighted the negative impact that obsolete educational policies had higher levels of poverty in the region. Overall, a radical overhaul of the system in most of the countries is required. Mainly adjusting post-secondary education to provide the needed balance between specialists and technicians. Emerging Arab countries also have to pay considerable attention to improving the quality and relevance of research undertaken by universities and specialised institutions to become producers of quality knowledge. This would underpin their move to knowledge-based economies and provide jobs for the more educated.

Regarding healthcare, the pursuit of good health and longevity is not only an essential human desire but also one of the fundamental pillars of development. Based on the analysis, equity in healthcare provisions could be a central development purpose and a measure of societal success in order to avoid the failures of the past. Demands for health equity capture people's aspirations for wellbeing and must be founded on a transformative understanding of social justice as a state of fairness and inclusiveness for all.

The quality and relevance of public healthcare and education services are essential for enhancing the main resource available to Arab economies - their youth. Expenditures on these services complement developmental expenditures and might require special treatment to be more productive. Providing quality social services is an underlying condition for sustainable development and meaningful poverty reduction. The freedom from debilitating health conditions as well as equal access to an adequate education is vital for breaking the cycle of poverty of the low and middle social classes. An enhancement in the delivery of social services

can also directly assist with creating employment through longer-term jobs for the more educated. Improved social services can be sustained by promoting widespread participation in the management and funding of public education and health services.

Moreover, to set the foundation for the implementation of an inclusive growth strategy, ACs should launch a promising programme of infrastructure upgrading to deal with major bottlenecks to private sector growth regarding transport, power and communication networks. The implementation of such an investment program, using labour-intensive methods, would create jobs in the immediate term and save foreign currency on imports of machinery needed if capital-intensive methods are used. This is precisely what was done by East Asian economies who succeeded in attracting private investment through building the required infrastructure by public action (Aalto, 2014). LICs and Emerging economies would have to focus on infrastructure that opens up the more deprived regions and links them to main industrial and tourist sites. This is likely to be more in the nature of expansion in motorways and improved rail networks.

Infrastructure projects can be achieved using community-based mechanisms to design and monitor them, thus overcoming weaknesses in official monitoring and evaluation mechanisms. According to Ianchovichina et al. (2013), it is possible for any Arab country to allocate up to 1% of GDP to mount public work programmes that actually increase the productive potential of the country without any inflationary impact. A programme of this magnitude may typically create jobs for a critical mass of unemployed persons to make a dent in the unemployment problem in the immediate term. It will not, however, directly create long-term jobs and will be of very limited use in dealing with the thorny issue of graduate job seekers.

On the other hand, because of the recessionary impact of political instability in the aftermath of the 2011 uprisings, opportunities for raising revenues in the short term have become limited. Thus, there is no escape from increased levels of the budget deficit. Building public infrastructure is likely to further add to the deficit. Therefore, the critical question is how to determine a safe level of a budget deficit that does not create long-term difficulties for the economy. Of course, there is no ideal answer. However, considering the nature of interventions to be funded assumes critical importance. So long as the suggested interventions can remove production bottlenecks faced by the local economy in a reasonably short time, they need not be inflationary, as they would be creating the supply needed to respond to the increased level of demand.

8.5 Concluding Remarks

This chapter, based on the analysis in the previous chapters, addresses the reform in the Arab world from a new perspective with regards to the “what” and “how” of appropriate policy reform. It has been argued that the Arab region has a large economic reform agenda ahead if it to overcome its growth and development challenges.

The chapter began with a brief presentation of the status of the agenda of economic, social and political reform in the Arab region. Previous and current programmes could be described as not having a significant effect on the standards of living of Arab citizens, and the experience has been disappointing. The second section demonstrated the factors that have profoundly frustrated the reform effort which include: the resource curse; civil wars and armed conflicts; the complexity of macroeconomic problems; democracy deficit; ineffectual design of the reform program itself; and resistance to reform.

The chapter then suggested specific development frameworks which contain proposals that aim to address these defects. For the Arab reform programme to be of utmost success, it is clear that the region must address critical governance issues that hinder this effective coalition of change. In the absence of good governance, Arab governments have not been able to contribute to finding lasting solutions to the problems of development, and hence the standards of living and essentials of life are still low for the majority of Arab citizens. The framework emphasised the key role of the rule of law, enhancement of democracy, independence of the judiciary, and equal opportunities, at all levels in expanding the chances of successful development in Arab nations and avoiding civil conflicts. This will be essential to accelerate the region's integration into the global trends in political, economic, human and cultural development. The second stage of the framework involves the implementation of appropriate economic reform programme through structural reforms and macro-stabilisation. It is considered essential for any required progress to turn to market mechanisms, increase competitiveness, attract more internal and external capital to increase investment rates, enact labour market and tax system reforms, and improve subsidy programmes.

The impact of political and economic reforms would also help improve the business and investment environment, provide higher growth, provide greater opportunities for employment, enhance standards of living, and reduce poverty levels for the Arab region. This prosperity would reflect directly on public goods provision. Providing education and health services to people who are among the best ways of improving the quality of human resources, and thus,

people can work more efficiently, productively, resulting in more economic progress. An appropriate application of the proposed frameworks will ensure that reform programmes are implemented efficiently, which will lead to sustainable growth that promotes prosperity and high standards of living for the Arab citizen.

The discussion in the chapter also argued that, although the suggested development framework applies to the Arab region as a whole, there are minor differences on which elements of the framework different Arab groups need to focus on.

Chapter 9

Conclusion, Limitation, and Future Research

Chapter 9: Conclusion, Limitation, and Future Research

9.1 Introduction

In the context of other regions in the world, this thesis has evaluated the economic development of Arab states and examined the determinants of reform adoption from different perspectives. Following this, a framework was proposed for the Arab region, which could help achieve sustainable and inclusive growth and development. This chapter summarises this study and outlines the empirical findings as well as setting them in the context of the study's objectives. Notably, the chapter provides an overview of the two sets of empirical results and draws some conclusions about reform and governance practices in the Arab region. It also highlights the main contributions to knowledge as well as identifying the research limitations and providing recommendations for avenues of future research.

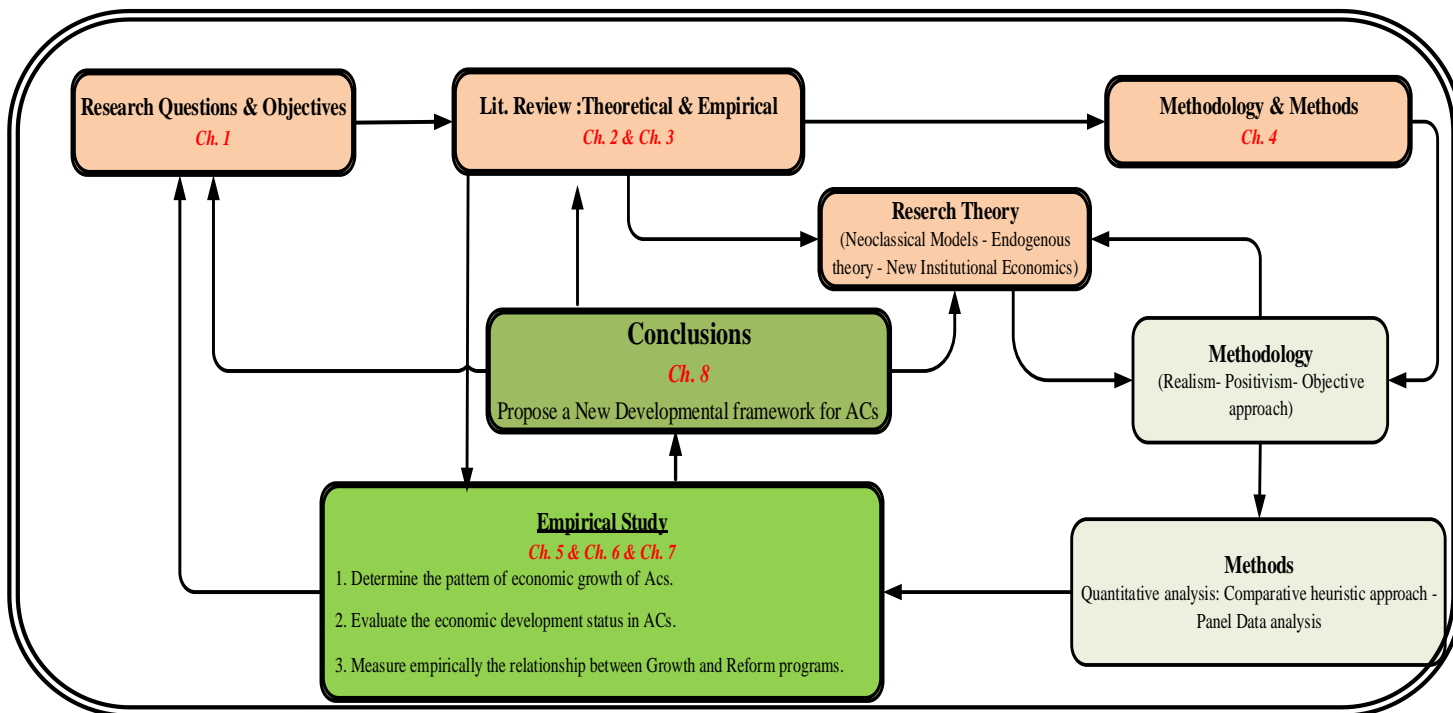
The remainder of this chapter is organised as follows: Section 9.2 presents a general summary of the study; Section 9.3 then outlines the main contributions of the study to knowledge and policy-making related to institutions, growth and development; Section 9.4 highlights the main limitations and problems encountered in conducting the study; Section 9.5 suggests some avenues for future research, and finally concluding remarks are found in Section 9.6.

9.2 Summary of the Study Outcomes

Figure 9.1 illustrates the overall structure of the thesis, and clarifies its different parts, with the association and sequence of these parts. With the background of the 'Arab Spring' and the quest for more sustainable and inclusive growth and development in the Arab world, the study began, in Chapters 2 and 3, with a detailed and critical discussion of current and related literature on economic development and governance from the theoretical and empirical aspects. The review determined the theories related to the phenomenon and the methodological tools applied for such assessment, in addition to specifying the key research gaps, some of which have been addressed in this study. The review also determined the research methodology and the theoretical and empirical models on which the study is based as presented in Chapter 4. This was followed by three analyses Chapters (5, 6 and 7) to help achieve the three key objectives of the thesis: an evaluation of the economic growth pattern of the Arab region; an examination of the economic, social and institutional development in the Arab region compared

to other regions in the world; an assessment of those relationships to determine which of these variables were more influential in the Arab environment. Based on these findings, chapter 8 focused on the proposed framework for achieving sustained and inclusive development for the Arab region as a whole and its sub-regions. In the following paragraphs, additional summaries of each of the chapters are presented.

Figure 9.1: Structure of the thesis



Source: Author based on the previous chapters

Chapter 1, introduced the research idea and the study problem. In addition, it presented the research questions, objectives, hypotheses and provided sufficient justification for the study.

Chapter 2, critically examined the evidence on the governance-development relationship by providing systemic reviews of relevant economic theories. Firstly, the chapter traced the concepts, elements and theories of economic development, starting with the classical schools and ending with the new institutional theory. The second part examined the different perspectives of governance with a focus on the “Worldwide Governance Indicators” which helped define the main source of data for the governance indicators in this thesis. The final section discussed the theoretical implications of incorporating the governance components in explaining development and growth across countries.

Chapter 3, completes the discussion of the previous chapter with respect to the role of governance in development but from an empirical perspective. The chapter illustrated the debate on the various measures of governance and their impact on development through evaluating the growing body of empirical literature that has examined this relationship. The main findings of this review were that governance is a positive and statistically significant determinant of economic development. Empirical evidence from the development literature has confirmed that governance matters for improved economic growth via several ways. It is also important for achieving sustained and inclusive development.

Chapter 4, is the methodological basis for the thesis. The chapter presented the theoretical model of the study, starting with the Solow-Swan model, which predicts output per worker. This was followed by the Mankiw, Romer and Weil (MRW) model which augmented the Solow-Swan model to include human capital in addition to physical capital and population growth, with the argument that this provides a good fit for cross-country data. Incorporating total factor productivity into the augmented Solow growth model, it was shown that societal payoffs to physical and human capital enhancements depend on the prevailing institutional conditions. Based on this foundation, the empirical model was defined to assess the economic reform effort of the sampled countries by estimating a conditional convergence equation for economic growth. The originality of the study's model lies in generating aggregated reform indicators using principal component analysis. This approach allows computing all control variables identified by 'Barro-type regression' into only six separate groups. Lastly, the chapter outlined the econometric estimation approach of the study.

Chapter 5, employed a comparative heuristic approach to compare the outcomes of economic reforms in the Arab world with those in other world regions. The chapter aimed to understand the drivers and origins of the Arab Spring from an economic perspective through investigating the impact of socioeconomic reforms on economic performance in the Arab region. The outcome of the chapter proved that the region had experienced a growth deficit, with low per capita income growth. This growth performance has been weaker than that achieved by most other regions of the world, except for Sub-Saharan Africa. Success in economic and social reform has been disappointing. In almost all cases, reforms have been launched and executed through a top-down approach. The structural reform was only successful in Arab reformers (RPLA) that have a positive score similar to other advanced economies. While in the rest of the Arab countries, the structural reform failed to bring any improvements. Despite their

presumably good intentions, the reforms have been selective, and often subject to pause and reversals.

The most significant contribution of this chapter is its evaluation of the winners and losers in the Arab region based on their progress in the structural reform and macroeconomic stability. Only three countries, Bahrain, the UAE and Qatar have succeeded in attributing this stability to successful structural reform, while in the rest of GCC countries and Libya, the structural reforms have generally been insufficient and proved to be much more difficult than macroeconomic stability. In contrast, Arab reformers have achieved good progress in their structural reform. But insufficient progress in economic stability. Several reasons have led to this situation. First, the high oil dependency prevented the shift to structural reforms and diversification of production. Secondly, improvements in reforms are primarily linked to political stability and the absence of violence. Countries which were under or still suffering from civil wars and armed conflicts have destroyed their human capital, infrastructure and economic stability. The third reason is that the twin deficits hypothesis is more prominent in Arab economies than the rest of the world. The fourth reason is the complexity and difficulties of macroeconomic problems; for instance, there is a strong positive association between unemployment and inflation only in Arab countries, a relationship which is adverse to the well-known Philips curve. Such a situation is not a good basis for sustained development.

Chapter 6, complements the previous chapter by utilising the same approach to evaluate the governance system in the Arab states from six different dimensions, through a comparative assessment between the Arab region and other developed and developing regions, and within the region itself by highlighting the similarities and differences among the region's countries. The chapter concluded that the Arab political reform agenda has not gone far enough and has been in general weak, often hesitant, and in some cases even reversed, with relatively faint outcomes. Several reasons have led to this situation. Remarkably, the deficiency of the voice and accountability metric is closely related to the historical “democracy deficit”. Arab states have the highest rate of political grievances, especially those arising from the “democracy shortfall” of a longstanding dictatorial rule, widespread governmental corruption, restricted opportunities for participation in public and political life, a deteriorating justice system, and other human rights violations. The analysis manifested that Arab countries form the world’s largest set of autocratic regimes and have a long history of poor governmental performance and human rights breaches. Secondly, improvements in reforms are primarily linked to political stability and the absence of violence. Furthermore, the analysis proved that governance

performance is not associated either with the type of political system; republics or monarchies, nor economic resources abundance; is oil exporters or non-oil exporters. The improvements in the quality of institutions have stemmed from effective executive strategies implemented in very few Arab countries.

Chapter 7, aimed to measure empirically the effectiveness of economic, social and institutional reform programmes in achieving sustained growth of developing countries in general and Arab countries in particular. The assessment includes six samples; advanced economies, developing countries, the Arab region and three sub-Arab groups, namely the GCC countries, Arab emerging countries and Arab countries with civil war. The results of the dynamic panel LSDCV indicated that currency devaluation might improve growth in most developed economies and Arab countries, but currency appreciation was more efficient for the stabilisation of the GCC. Furthermore, the relation between budget deficit and public debt, and growth tended to be negative for all samples except Arab emerging countries. The analysis also confirmed that unemployment is one of the most problematic issues not only for developing countries but also for advanced economies.

Moreover, the analysis in the chapter found a highly significant role of structural reforms for growth in all the groups. Within its components, the coefficients of inward foreign direct investment (FDI) was positive and statistically significant for all groups. Output contribution of infrastructure varied across the study samples. The effect of infrastructure was positive and statistically significant in GCC members; this effect could be associated entirely with the volume of public investment, including infrastructure in these countries. Inadequate supply of infrastructure may inhibit investment of productive capital, thus restrict and reduce economic production. This is the experience of Arab emerging countries and other Arab countries, which is reflected in the results for the whole Arab region sample. The overall outcomes of institutional reform were consistent with current literature that governance is a positive and statistically significant determinant of economic growth. For the whole Arab region, political stability and control of corruption were most significant, while government effectiveness and the rule of law were important for GCC, and voice and accountability, and regulatory quality were the most significant influences on growth in emerging Arab countries. Lastly, the results of the Shapley value decomposition supported the previous outcomes for the components of the reform.

Chapter 8, summarised the reform experience in the Arab world and addressed some of the determinants which have inhibited the implementation of a reliable reform programme. Based

on previous analyses, this chapter proposed frameworks for comprehensive and integrated development for the Arab region based on key economic, political and social variables and taking into consideration the distinctive features of each Arab group. All frameworks argue that Arab reform must go through three necessary stages to achieve sustainable growth. The first stage includes political and institutional reform, followed by the second stage of economic reform, including both macro-stability and structural reform. The first and second stages drive a steady increase in the economic growth rate, which leads to an increase in average national income per capita. Thus, positively reflect on social reform, as the third stage, of expanded spending on public goods and human capital, which, also indirectly, supports economic growth once again. The argument is that political and institutional reforms are key to developing and implementing appropriate economic reforms and achieving key economic and social objectives, which are also sustainable and inclusive. The frameworks, it is hoped, will help avoid future civil and other unrests in the region, such as the Arab Spring.

9.3 Contribution to Knowledge and Policy

Some of the findings of this thesis can be viewed as significant academic contributions to the debate about reform, institutions, economic growth and development. It extends current knowledge and takes an important step towards explaining why some developing countries successfully reform their economies while others fail, as well as identifying the main challenges facing the economic development of the Arab world. This research makes theoretical, methodological and empirical contributions to the literature on economic development in general, and the Arab region in particular. The main contributions of the thesis can be summarised as follows:

- **Theoretical contributions**

From a theoretical point of view, this study has reappraised the conceptualisation of the role of governance in the model of economic growth by linking the theories of economic development from Adam Smith to North Douglas to clarify the role of institutions in stimulating economic growth. In addition, the study presents a unified mathematical model for integrating the augmented Solow-Swan growth model with the total factor productivity model. Such a clear growth framework would, therefore, allow an explicit modelling of the institutions' channel of impact and can eventually provide a better understanding of its relationship with economic growth; this is especially true since the lack of theoretical basis was one of the biggest criticisms to institutional empirical research. This study contributes by extending the application of

economic growth theory to examine empirically the role of institutional and human resource capacity building in sustainable economic development.

- **Methodological contributions**

This research has provided valuable methodological insights that may be incorporated into future research in the same field. It has overcome the methodological limitations of previous studies, which have been confined mainly to the quantitative cross-country method and detailed qualitative case studies to examine the economic and political reform. This research has addressed the issues from several directions by adopting a new methodological approach. Firstly, a comparative heuristic analysis was used to determine the performance of the economic, social and political reform components in the Arab region and compare them with other world regions. Later, these relationships were tested using econometric analysis in particular through a dynamic panel analysis. These results were then confirmed by using the Shapley value decomposition. In addition, the classification of countries, especially the Arab groups was very helpful later in interpreting the model's results and putting forward a separate development framework for each group.

- **Empirical contributions**

Based on the relevant literature reviews and the findings of this study, there are two significant experimental contributions as follows:

Firstly, the endeavour to explore the effect of socioeconomic reform programmes in the Arab region on development, in terms of the Arab sample as a whole and other sub-samples within the region. Only a few studies have addressed the Arab region, and often the analysis is conducted on a larger sample of countries with no emphasis on the cases of the Arab economies. The majority of the studies were also interested in the economic aspects rather than other dimensions of reform, and the question of an inclusive framework of reform seems not to have received due consideration. Even in the economic studies, it is remarkable that sectoral and single-issue studies that focus on very few outcomes of the reform process dominate the scene.

Secondly, this research provides an original contribution to knowledge by proposing a new framework that could be adopted by Arab countries and incorporates a broader scope of areas in development, including economic, political and social. The framework links different reform

components to the strategic agenda of Arab development through focusing on institutional capacity. This framework can be used and applied as a vital tool to increase the effectiveness and efficiency of reform programmes in meeting targeted inclusive growth results, and to contribute to the overall improvement in sustainable development. The proposed framework not only gives a general idea of reform agenda, but rather provides details on the stages of reform, the indicators to be targeted first during the transformation phase, and how these phases are related to each other. The proposed frameworks are designed to fit the conditions of each Arab group. In contrast, most previous studies seem to ignore this approach and instead focus on either single-country studies or single-sector analyses. These studies failed to recognise the region-wide patterns of the economic and institutional policy reforms in the Arab world as a whole.

The two above empirical contributions should be considered as part of an informed debate about trade-offs in social, economic and political policies. Such debate upon the needs of change should lay the foundations for sustaining the momentum of the “Arab Spring” in improving the economic and social environment of the Arab region.

9.4 Limitations

This thesis contributes to the ongoing debate on the effectiveness of reform programmes in achieving sustained and more inclusive growth in Arab countries (ACs). The study output can be categorised into two ambits: (i) evaluating the economic, social and institutional reform effort of the ACs, and (ii) identifying the interrelationships between institutions and economic development using econometric models.

However, like other panel data studies, the thesis attempted to investigate a “common” pattern across economies. This inevitably masks cross-sectional heterogeneity. Although the method of classification and analysis of the study was based on comparative analysis, both descriptive and econometric, between all world regions and between the Arab sub-groups, many other country-specific characteristics were not covered by such classification. In fact, understanding the country-specific situation is important for designing more refined reform strategies.

Secondly, data limitation was also a major problem. Despite the good representation of developing countries from all regions in the study, the missing data for many developing countries, especially those related to the social dimension, prevented them from being added

and increasing the sample size. Finally, the shortage of some basic indicators of economic reform programmes, such as the reform of the tax system or the parallel exchange rate market, has led to some limitations in interpreting some of the results. On the other hand, all the reform indicators are truly measuring the macroeconomic environment, without specific reference to particular sectors or industries. Variables with a particular focus at the micro-level may help strengthen further how development outcomes interact with the institutional system. However, these are not readily available at this stage.

Thirdly, although there are some variables with a social dimension such as infrastructure and health facilities in the model, the study did not directly address some of the social issues affecting the Arab region such as poverty and inequality. The absence of "social justice" was one of the primary motives of Arab demonstrators in their uprisings. However, it was not possible to include this in the study, given the complexity of the model used -which includes more than 30 variables already- in addition to the difficulty of obtaining the data required to reflect this aspect. Nevertheless, the concept of inequality was mentioned indirectly in the discussion and policy implications sections.

In addition to some limitations in the econometrics technics such as the inclusion of the entire countries in the one sample and the use of dummy variables could have been used to identify the distinctions.

Lastly, the thesis was formulated within Eurocentric theory making and its application, while the discussion could be expanding to go beyond the existing frames and delve into emerging debate by exploring the 'soft institutions' or norms and their impact on development in the region such as culture, religion, justice, distribution, legal forms and articulations, nature of regimes, social formations, civil society, etc. Such a debate will help to develop a narrative in providing a robust foundation for constituting and commencing new debates.

Despite these limitations, the research provides a strong empirical basis to identify the channels of particular aspects of institutions. It also helps pin down the analysis of the interrelationship between economic, social and political reforms in a more robust manner.

9.5 Avenues for Future Research

In the light of the thesis' results and limitations aforementioned, we propose the following dimensions for further investigation and for enhancing the outcomes of this study:

Firstly, the most fruitful outcome of this research is the proposal frameworks in Chapter 8. The proposed frameworks provide broad lines of inclusive growth and the stages of development that the reform should be going through. The models also identify which elements of reform are most appropriate for each Arab group. Therefore, it is suggested to further research these overall aims in order to design appropriate integrated strategies for each of them. For each main aim, there should be a set of sub-goals that determine how to achieve it. Then for the implementation of each sub-goal, a set of initiatives should be developed, to set responsibilities, time span, and evaluation metrics.

Secondly, it is also possible to verify these models as a whole in their existing form, in other words, to study the relationship between all the variables of the model at the same time. It is possible to examine the nature of the relationship in practical ways. For example, the relationship between the components of economic and political reform and at the same time, economic growth through structural equation modelling techniques. Understanding these mutual relations will significantly benefit the development of reform programmes to be more powerful and productive.

Thirdly, we could consider a micro-level analysis which examines how firm- or sector-level development relates to reform change. Such kinds of micro-level inquiry are important to investigate how macro reform arrangement could affect sectors and industries leading to growth outcomes.

Fourthly, future research in the Arab region may consider some other variables that are not included in this study, such as poverty and aid. In addition, other proxies may be used as measures for the current variables such as foreign exchange parallel market's premium and tariff rate.

Lastly, the results of chapter 5 and 6 show that an active governance system for the oil sector will create the conditions for sustained economic growth and enhance human resource capacity building and institutional quality, leading to a lower level of corruption and rent-seeking activities. It is recommended that future studies should examine the importance of different transmission channels of the resource curse by using different regression models such as switching regression models. Switching regression models allow one to take into account country heterogeneity by looking at common effects for a group of countries. The approach could also provide a threshold value to classify natural resource dependency as a blessing or a curse.

9.6 Concluding Remarks

In January 2011, Tunisia shocked the world when weeks of popular protest led to the ouster and exile of President Zine el-Abidine Ben Ali after a 23 year-long rule. Inspired by the uprising in Tunisia, the demonstrations moved to Egypt in the same month; a large number of protesters succeeded in ousting the Egyptian President, Hosni Mubarak, after 30 years in office. The ouster of Ben Ali and Mubarak was a landmark event and an undeniable triumph of the popular will. A few days later, the influences of the Tunisian and Egyptian demonstrations led to a broad wave of protests across large parts of the Arab world, governed for a long time by strong autocratic leaders. These waves of demonstrations have been popularly referred to as the ‘Arab Spring’.

Following this Arab spring, the region has come to a fork in the path. Arabs today are passing through a difficult time of severe and painful choices that bear far-reaching consequences. Therefore, this study investigated the reasons that led to the Arab Spring from an institutional and economic perspective. The research argues that there were significant economic and political elements to the Arab Spring, which relates mainly to the Arab economies failure to achieve sustained growth. The purpose of the examination is to understand, whether the economic development model of the region has been unsatisfactory due to Arab economies lagging behind in terms of reforms, or because of the reform programmes itself.

The “Arab Spring” that led to a political transformation in several Arab countries should move beyond what it is against and define what it is for. The inclusive reform agenda that has been dormant for so long under dictatorial regimes cannot be frozen any more. The Arab street seemed to have made clear that it is no longer willing to accept the existing development models for dealing with the myriad of socio-economic and political challenges faced by the region. Notwithstanding implementing series of reforms and several Arab countries such as Egypt and Tunisia who achieved more than 7% in economic growth, the study found that this growth process has not been inclusive, with most economical enterprise concentrated in the hands of a small politically well-connected business elite that obtains its profits from monopoly practices over markets and government contracts. Thus, there is no incentive to develop a competitive, productive economy that will sustain an increasingly well-educated labour force. Unemployment rates in the region remain the highest in the world as more and more working-age people continue to look for work in vain. The few available jobs are typically not in the high productivity, high wage bracket.

The analysis of development challenges in this thesis explains the failure of the region to translate its material resources into commensurate improvements in social prosperity, which are in large part due to profoundly entrenched governance failures. Increased impunity of political, economic and administrative elites in the context of constrained freedoms and weak accountability mechanisms have undermined equitable and inclusive economic growth. While better governance cannot guarantee the best economic policies, it is indispensable to guard against persistently poor policies and to ensure that the appropriate policies needed to meet the Arab region's growth potential enjoy legitimacy and are implemented faithfully and with accuracy. An efficient governance system includes protecting and enforcing property rights, transparency processes, curbing harsh administrative and judicial rulings, assuring good regulatory quality, and improving access to affordable and reliable recourse to dispute resolution, and reducing political risk.

The study results focus attention on institutional reform as the key to economic progress so that future increases in the physical and human capital will generate positive social returns as well as private ones. Indeed, the ACs need an economic development approach that targets resolving social issues related to inequality and poverty. Stiglitz (2002) promotes a vision where development strategies must incorporate economic as well as social objectives. Such development will be accomplished through government transparency, communities' participatory processes, international organisations exchange, and openness to global markets. "Too often, development is interpreted as being identical with economic development, the increase in per capita GDP", but what does social development in fields like education and health mean? It is true that increases in per capita income help improve social sectors, but while economic growth and social development "tend to move together, there is far from perfect correlation" (Stiglitz, 2002, p. 171).

The conclusion of this study is to propose a new development and reform framework. In this frame, reform is simultaneously political, social and economic. It is thus because real reform is not only a question of structural reform and macroeconomic stabilisation. It is also an incentive (profit), property rights (means of governance), resource allocation and wealth distribution. An economic policy design that addresses these issues cannot ignore their political and social contexts and implications. Ignoring social implications will turn those who stand to reap the most benefits from reform into the enemies of reform. Accordingly, there is a complementary relationship between socioeconomic reform and institutions.

There is no reason for this region not to succeed with the best developmental results, given its substantial human, financial, and natural resources. Even in the current challenging global economic and political context, an Arab resurgence is possible if Arab societies as a whole, citizens and governments, attempt to turn the region's challenges into opportunities. The Arab spring's spirit charting the Arab development path in human dignity that promotes (social, economic and political) inclusion, social justice and equity, is not only desirable, it is also within reach. In fact, all the necessary endowments – regarding natural, human and financial resources – are widely available within the region. The window of opportunity to chart this new way was instigated by the people of the Arab region themselves in their call for human dignity and demands for “bread, freedom and social justice” - a slogan of revolution which captures the inseparability and interdependence of economic, social and political life, indeed of social, economic and political inclusion.

APPENDICES

Appendices of chapter 1

Appendix 1.1: Map of Arab Countries



Source: <https://www.worldatlas.com/>

Appendices of chapter 2

Appendix 2.1 : Comparison of Major Economic Theories⁵⁵

Economic Theory	Key Scholar	Key Characteristics	Criticisms
Classical School (18th and 19th centuries)	Adam Smith David Ricardo	The natural order determines price & rent. focus on supply (supply creates demand) Freedom from government restriction. Development is self-sustaining growth. Capital accumulation (savings) Division of labour, specialisation, and exchange.	Underestimated the impact of technological advance. Bringing wealth only to the rich, whereas the poor get poorer.
Socialism (19th century)	Karl Marx	Examines where society was, is going, and its change process. Movement from feudalism to capitalism to socialism – based on changes in ruling & oppressed classes & their relationship to each other. Reserve army of unemployed.	Philosophy was not applicable. The collapse of the Soviet Union. The model would not provide a solution to poverty and inequality.
The Linear Stages of Growth Models (1950s -1960s)	Walt Rostow Harrod–Domar	Development is Exogenous focuses on the accelerated accumulation of capital, through the utilisation of both domestic and international savings as a means of spurring investment .	The growth path is not a single pathway. Capital accumulation is not a sufficient condition for development. Failed to account for political, social and institutional obstacles to development.
Neoclassical Counter-Revolution Models (1950s -1980s)	Robert Solow Paul Krugman Jagdish Bhagwati Béla Balassa Deepak Lal Peter Bauer Anne Krueger	Development is Exogenous The price signal acts to allocate scarce resources. Governments limit interference in the working of the economy The government role is to encourage enterprise and to reduce regulation and inefficiencies in free markets and establish ownership of property rights	The existence of market failure – externalities, monopoly power, public goods Problems of lack of infrastructure – education and health, public transport, legal structure Problems of equity in allocation – wealth and income distribution

⁵⁵ Source: Author's summary based on (Beckmann and Padmanabhan, 2009; Dang and Pheng, 2014; Nafziger, 2006; Todaro and Smith, 2011).

Economic Theory	Key Scholar	Key Characteristics	Criticisms
		Policies of liberalisation, privatisation, foreign trade, private international investments, and foreign aid. Increases in the capital (through savings and investments) and improvements in technology .	Did not mention the different institutional, cultural, and historical context.
New Growth Theory (Endogenous growth theory) (1980s -1990s)	Paul Romer Robert Lucas Sergio Rebelo	Development is endogenous and not due to external forces Holds that investment in human capital, innovation, and knowledge are significant contributors to economic growth. Focuses on positive externalities and indirect effects of a knowledge-based economy, which will lead to economic development. Holds that the long-run growth rate of an economy depends on policy measures.	Ignores the importance of social and institutional structures. Emphasis only on the determinants of long-term growth rates, neglected short- and medium-term growth.
New Institutional Economics (NIE) (From the 1990s)	Douglass North Oliver Williamson Daron Acemoğlu Lee J. Alston David Bloom Dani Rodrik	Development is endogenous Development is caused by a society adopting institutions and policies that create incentives for its citizens to save, invest, and innovate. Combines economic theory with the analysis of institutions Focuses on governance structures, regulatory, legal frameworks, property rights, and government rules and structures, accountability, and publicly known rules. Institutions are shaping national economic behaviour.	Difficult to use a limited classification (exclusive institutions versus inclusive institutions) to explain the disparate development paths of countries. Difficult to measure it (Subjective measures). No normative concept or unifying single theory to distinguish between good or bad institutions.

Appendix 2.2: Comparison of different sources of governance indicators ⁵⁶

Sources	Publisher	Time and countries covered	Indicators	Methodology and Rating
Freedom House	Freedom House(FH) , NGO Founded in 1941.	192 countries (1975-present)	Political rights (electoral process; political participation; functioning of government)	The Indicators are on a scale of 1 to 7 (“1” is the highest (best) level and “7” the lowest).

⁵⁶ Author’s summary based on(Gelman and Stanig, 2014; House Freedom, 2014; Kaufmann et al., 2010; Marshall and Jagers, 2002; PRS Group, 2011)

			<p>Civil liberties (freedom of expression and belief, people’s rights to associate and organise, the Rule of Law, and personal autonomy and individual rights)</p>	<p>The average of the two ratings is used to designate the country’s status as “free” (a score below 3), “partly free” (3 to 5) or “not free” (above 5).</p>
<p>International Country Risk Guide (ICRG)</p>	<p>The PRS Group, Inc. founded in 1979</p>	<p>140 countries (1980-present)</p>	<p>The Political Risk index (Government Stability, Socioeconomic Conditions, Investment Profile, Internal Conflict, External Conflict, Corruption, Military in Politics, Religious Tensions, Law and Order, Ethnic Tensions, Democratic Accountability, Bureaucracy Quality)</p> <p>The Financial Risk index (Foreign Debt as a % of GDP, Foreign Debt Service % of Exports, Current Account % of Exports, Net International Liquidity as Months of Import Cover, Exchange Rate Stability)</p> <p>The Economic Risk index (GDP per Head, Real GDP Growth, Inflation Rate, Budget Balance % of GDP, Current Account % of GDP)</p>	<p>The Political Risk index is based on 100 points, Financial Risk on 50 points, and Economic Risk on 50 points.</p> <p>The total points from the three indices are divided by two to produce the weights for inclusion in the composite country risk score. The composite scores, ranging from zero to 100, are then broken into categories from Very Low Risk (80 to 100 points) to Very High Risk (zero to 49.9 points).</p>
<p>The World Governance Indicators (WGI)</p>	<p>World Bank: Development Research Group, Macroeconomics and Growth Team</p>	<p>215 countries (1996-present)</p>	<p>Voice & Accountability, Political Stability Government Effectiveness, Regulatory Quality, Rule of Law Control of Corruption</p>	<p>WGI are measured in two ways: 1) standard normal units of the governance indicator, ranging from around -2.5 to 2.5, 2) Percentile rank terms ranging from zero (lowest) to 100 (highest) among all countries worldwide.</p> <p>The dataset from 38 sources (surveys of firms and households, as well as the subjective assessments of a variety of commercial business information providers, non-governmental organisations, and some</p>

				multilateral organisations and other public-sector bodies)
Polity IV	The Center for Systemic Peace, University of Maryland	167 countries (1800-present)	Democracy/ Autocracy (The competitiveness of political participation, the competitiveness of executive recruitment, the openness of executive recruitment, and the constraints on the chief executive).	For each year and country, a "Polity Score" is determined which ranges from -10 to +10, with -10 to -6 corresponding to autocracies, -5 to 5 corresponding to anocracies, and 6 to 10 to democracies.
Transparency International	Transparency International (TI), NGO founded in 1993	180 countries (1995-present)	Corruption Perceptions Index (CPI)	The scale of 0-100 where a 0 equals the highest level of perceived corruption and 100 equals the lowest level of perceived corruption. Using 12 different data sources.

**Appendix 2.3: Summary of the sources of governance data used to construct the
WGIs indicators ⁵⁷**

Type	Source	Institute	Established	Indicators
Cross-Country Surveys of Firms	Global Competitiveness Survey	World Economic Forum	1996	All 6 indicators
	World Competitiveness Yearbook	Institute for Management Development, Switzerland	1987	All 6 indicators
	Business Environment and Enterprise Performance Survey (BEEPS)	The World Bank	1999	GE, RQ, RL, CC
	World Business Environment Survey	The World Bank	1999	All 6 indicators
	Africa Competitiveness Report	World Economic Forum	1998	PS, GE, RQ, RL, CC
Cross-Country Surveys of Individuals	Voice of the People	Gallup International	2002	VA, PS, GE, RL, CC
	Gallup International Millennium Survey	Gallup International	1999	VA, PS, GE, RL, CC
	Latinobarómetro	Latinobarómetro, Chile	1996	VA, PS, GE, RL, CC
	Afrobarometer	Afrobarometer, the Institute for Democracy in South Africa	1999,	VA, GE, RL, CC
	Latin America Public Opinion Project (LAPOP)	Vanderbilt University	2004	VA, RL, CC
Expert Assessments from Commercial Risk Rating	Business Risk Service	Business Environment Risk Intelligence (BERI), Geneva.	1996	PS, GE, RL, CC
	Quantitative Risk Measure in Foreign Lending	BERI	1996	PS, GE, RL, CC
	Country Risk Review (CRR)	Global Insight's DRI	1996	PS, GE, RQ, RL, CC
	International Country Risk Guide (ICRG)	Political Risk Services (PRS) group, New York	1982	All 6 indicators
	EIU Country Risk Service	Economist Intelligence Unit (EIU)	1997	All 6 indicators

⁵⁷ Source: Author's summary based on (Kaufmann, 2009; Kaufmann et al., 2010) and World Bank data available at: <http://info.worldbank.org/governance/wgi/index.aspx#home> (Accessed: October 2015)

	World Markets Online (WMO)	The World Markets Research Centre	1996	All 6 indicators
	iJET security risk rating	Annapolis, Maryland	1999	PS
	Gray Area Dynamics™	The Merchant International Group (MIG)	1982	PS, GE, RQ, RL, CC
	Political Economic Risk Consultancy (PERC)	PERC	1976	CC
	10. Opacity Index	PricewaterhouseCoopers, US	2000	CC
Expert Assessments from NGOs, Think Tanks	Press Freedom Index	Reporters without Borders	2002	VA.
	Index of Economic Freedom	US-based Heritage Foundation	1995,	RQ, RL
	Freedom in the World	Freedom House	1978	VA
	Nations in Transit	Freedom House	1995	VA, GE, RL, CC
	Countries at the Cross Roads	Freedom House	2004	VA, RL, CC
	Cingranelli & Richards Human Rights Database	University of Binghamton	1981	VA, PS, RL
	Political Terror Scale	University of North Carolina	The 1980s	VA, PS, RL.
	Bertelsmann Transformation Index (BTI):	Bertelsmann Foundation, Germany	2004	VA, GE, RQ, RL.
	Global E-Governance Index	Brown University	2001	GE
	Media Sustainability Index	International Research & Exchanges Board (IREX)	2002	VA
	Index of Budget Transparency	Mexican NGO	VA
	State Capacity Survey	Columbia University	2000	VA, PS, GE, RL, CC
Expert Assessments from Governments, Multilaterals	World Bank Country Policy and Institutional Assessments (CPIAs)	World Bank	1970	GE, RQ, RL, CC
	Transition Report, European Bank for Reconstruction and Development (EBRD)	EBRD	All 6 indicators
	African Development Bank's Country Policy and Institutional Assessments	African Development Bank	2004	GE, RQ, RL, CC
	Asian Development Bank's Country Policy and Institutional Assessments	Asian Development Bank	2005	GE, RQ, RL, CC
	Progress towards Good Governance in Africa	United Nations Economic Commissions for Africa (UNECA)	VA, GE, RQ, RL, CC

Appendices of chapter 3

Appendix 3.1: Summary of Empirical Related Literature

Governance/ Institutions and Economic Growth					
Journal/ IF or ABS (2015)	Authors	Sample country	Data source & Period	Econometric technique	Major findings
1.1: Significant and one side directional relationship					
World Development*** 1.7	(Campos and Nugent, 1999)	108 countries; 28 East Asian countries	FH, ICRG 1982 - 1995	OLS	Without interaction terms Democracy, Bureaucracy & Rule of Law: positive and significant for all sample and East Asian; With interaction terms, only democracy is positive and significant
Kyklos*** 1.083	(Seldadyo et al., 2007)	82 countries	Governance (ICRG), 1984 - 2004	Parsimonious regression	Positive and significant
Transition Studies Review	(Law and Bany-Ariffin, 2008)	72 countries	ICRG, 1980–2001	Pooled mean group (PMG), Panel GMM	Institutions are more responsive in middle and low-income countries
Journal of Developing Societies	(Adams and Mengistu, 2008)	82 developing countries	WGI, 1991 - 2002	Least squares dummy variable approach	Positive and significant effect of governance on growth
International Journal of Development Issues	(Kandil, 2009)	16 MENA countries	Cato Institute, FH, WGI 1995-2005	2SLS	significant
Maastricht University	(Arndt, 2009)	200 (All) countries	ICRG, 1984- 2003 WGI, 1996–2006 FH, 1970-2006 Heritage Foundation, 1994-2006 (5-year average)	Pooled OLS (POLS), Random Effects GLS, Fixed Effects OLS	FH not significant effect ICRG marginally significant effects WGI and Fraser significant effects.
International Review of Law and Economics** 0.476	(Fernández et al., 2010)	84 countries	FH, 1980 - 2004	OLS, Random Effects	Positive and significant
WORKING PAPER SERIES	(Fayissa and Nsiah, 2010)	28 sub-Saharan African countries	Fraser Institute, 1990 -2004	(OLS), (GLS)	Positive and significant

Journal of Development Studies*** 0.714	(Alonso, 2011)	154 countries	WGI, 2006 – 2007	2SLS with variable instrumental technique	Positive and significant
Journal of Economic Issues* 0.645	(Gani, 2011)	84 countries	WGI, 1996 - 2005	OLS	Political stability: positive and significant Government effectiveness: positive and significant Regulatory quality: negative and insignificant The rule of law: negative and insignificant Control of corruption: negative and significant
Economic Modelling** 0.73	(Anwar and Cooray, 2012)	8 South Asian countries	FH Polity IV, 1970 - 2009	OLS, Fixed effects, System GMM	Positive and significant even when interacted with the money supply
Journal of the Japanese and International Economies 0.787	(Haidar, 2012)	181 countries	FH, ICRG, 1950 - 2009	the pooled regression model, a fixed-effects model	institutional quality has a significant positive impact on economic growth
Structural Change and Economic Dynamics*	(Siddiqui and Ahmed, 2013)	84 countries	All (Factor analysis), 2002–2006	panel OLS and GMM	institutions positively affect economic growth
Journal of Developing Areas**	(Fayissa and Nsiah, 2013)	39 sub-Saharan African countries	WGI, 1995 - 2004	fixed and Random Effects Arellano-Bond models	Role of governance on economic growth depends on the level of income.
Topics in Middle Eastern and North African Economies(CP)	(Emara, 2014)	cross-sectional of 197 countries	WGI, 2009	(TSLS)	positive, strong statistically significant causation from the quality of governance to per capita income
1.2: Significant and Bi-directional relationship					
Economics and Politics 0.625	(Chong and Calderon, 2000)	55 developed and developing countries	BERI 1972–1995 ICRG 1982–1995 (5-and10-year averages)	VAR linear feedback Granger causality test (time series)	Bi-directional causality between Institutions and economic growth
Economic Systems* 0.61	(Grogan and Moers, 2001)	25 transition countries	1990–1998	(OLS)	Bi-directional causality between Institutions and economic growth
World Development***	(Lee and Kim, 2009)	63 developed and	polity IV, 1965- 2002	Panel GMM causality	Bi-directional causality between Institutions and economic growth

1.7		developing countries			
Economic Systems* 0.61	(Law et al., 2013)	60 countries(4 groups)	ICRG, 1990–2008 WGI,1996–2008	Panel Granger causality	Bi-directional causality between Institutions and economic development
1.3: Insignificant relationship					
Journal of Economic Growth*** 3.125	(Glaeser et al., 2004)	54–71 developed and developing countries	ICRG, 1982–1997 WGI,1998–2000 PolityIV,1960–2000	OLS (cross-section)	No causal effect between Institutions and economic growth
Journal of Comparative Economics*** 1.176	(Huynh and Jacho-Chávez, 2009)	125 countries classified in 5 regions	WGI,1996-2004	Parametric models: OLS, panel data random-effects, panel data fixed-effects nonparametric methods: Specification test	VA, PS, RL - significant RC,CC, GE - insignificant
Review of Economics and Institutions 0.29	(Commander and Nikoloski, 2011)	159 countries	Democracy (FH and Polity IV), 1960 - 2009	GMM	Positive and insignificant

Economic Freedom and Economic Growth					
Journal/ IF or ABS	Authors	Sample country	Data source & Period	Econometric technique	Major findings
European Journal of Political Economy** 1.16	(Chen and Feng, 1996)	88 countries	ICRG, BERI 1974-1990	OLS	significant
European Journal of Political Economy** 1.16	(de Haan and Sturm, 2000)	80 countries	Fraser Institute, Heritage Foundation 1975–1990	OLS	positive and significant
European Journal of Political Economy** 1.16	(Bengoa and Sanchez-Robles, 2003)	18 Latin American countries	economic freedom, Fraser Institute, Heritage Foundation 1970–1999	panel OLS	positive and significant
European Journal of Political Economy** 1.16	(Dawson, 2003)	All countries for which datasets are available	Fraser Institute,1970–2000 (5-year average)	Pooled Granger causality	Economic freedom causes growth

European Journal of Political Economy** 1.16	(Justesen, 2008)	77 developed and developing countries	Fraser Institute, 1970–1999 (5-year average)	Panel Granger causality	Economic freedom causes growth
Economic Modelling** 0.73	(Azman-Saini et al., 2010)	85 countries	Fraser Institute, 1976–2004	GMM	positive and significant
Journal for Studies in Economics and Econometrics 0.1	(le Roux and Gorch, 2011)	<u>Southern African Development Community</u> (SADC) countries, 15	Fraser Institute, 1997 - 2007	Granger causality test, A panel unit root test	Economic freedom precedes economic growth

Democracy \ Political conditions and Economic Growth					
Journal/ IF or ABS	Authors	Sample country	Data source & Period	Econometric technique	Major findings
Review of Development Economics 0.50	(Oliva and Rivera-Batiz, 2002)	119 developing countries	Democracy (Polity IV), 1970 – 1994	OLS and Three-stage least squares (3SLS)	positive and significant
World Development*** 1.7	(Costello et al., 2015)	18 Arab countries	nonviolent and violent protest reported in Reuters newswire stories ,2006–11	Pooled cross-sectional time-series regression with a negative binomial model (OLS) - xtbnreg procedure With Random Effects.	State terror and political openness: strongest effects. Cell phones facilitated nonviolent protest while mineral rents and monarchies discouraged violent protest. And Youth bulge no effect of development.
Journal of Economic Growth*** 3.125	(Barro, 1996a)	100 countries	ICRG, 1960 to 1990	OLS	weakly negative
European Journal of Political Economy** 1.16	(de Haan and Sturm, 2003)	developing countries	Economic freedom, 1975 and 1990	(LMS)	political freedom is positively related to increases in economic freedom
European Journal of Political Economy** 1.16	(Lundström, 2005)	developing countries	FH, 1975–1995	(LMS)	effect of democracy on economic freedom is positive
Comparative Politics 0.646	(Heo and Tan, 2001)	32 developing countries.	Polity II, FH democracy scores, 1950-1982	Granger causality	11 Countries, Growth-->Democracy 10 countries, Democracy-->Growth 8 countries, No Relationship
Journal of Comparative Economics*** 2.028	(Che et al., 2013)	125 countries	Polity IV FH Political Rights Index ,1960–2000	system-GMM method difference-GMM method Fixed effects	System-GMM: positive and significant

Economics Letters*** 1.170	(Benhabib et al., 2013)	189 countries	The Penn World Tables(PWT) , Polity IV , 1960 - 2000.	Panel-GMM	significant positive relationship between income and democracy
Review of International Economics** 0.510	(Diebolt et al., 2013)	85 countries	Polity IV, 1970–2004 FH	semiparametric method: Spatial VAR (SVAR)	positive and significant
<u>Empirical Economics</u> ** 0.693	(Jaunky, 2013)	28 countries of Sub-Saharan Africa	FH, 1980–2005	(GMM)	Growth causes democracy in the short-run, while bi-directionality in the long-run.
The European Journal of Comparative Economics	(Djezou, 2014)	Côte d'Ivoire	polity IV, 1960 to 2012	(ARDL) model	Growth cause democracy
American Economic Review***** 0.505	(Acemoglu et al., 2008)	200 countries	FH, 1960–2000	GMM Fixed effects	positive income and democracy
American Economic Review 3.71	(Acemoglu et al., 2008)	200 countries	Polity IV, FH, 1960–2000	Fixed Effects	positive and significant

Economic Freedom / Democracy and Economic Growth					
Journal/ IF or ABS	Authors	Sample country	Data source & Period	Econometric technique	Major findings
Post-Communist Economies* 0.492	(Piatek et al., 2013)	25 post-socialist countries	Polity 2, 1990–2008	GMM	Democracy neutral for growth; however, growth could have influenced the level of political freedom.
KYKLOS*** 1.8	(Peev and Mueller, 2012)	24 post-communist economies	FH, 1999 - 2007	three-stage-least-squares model	Democracy led to economic freedom. Then economic freedom cause growth
JOURNAL OF ECONOMIC ISSUES** 0.7	(Fabro and Aixala, 2012)	79 countries	1976 to 2005	(2SLSW)	positive and significant
Spanish Economic Review	(Aixala and Fabro, 2009)	187 countries	FH, 1976–2000	Granger methodology	Democracy cause to economic freedom. Then economic freedom cause growth

0.667					
Cato Journal 0.1	(Verner, 2012)	45 countries	FH ,1975 - 1995	(GMM1 and GMM2)	Democracy and economic freedoms enhance economic growth. & free-market institutions boost growth more than democracy does

Corruption and Economic Growth					
Journal/ IF or ABS	Authors	Sample country	Data source & Period	Econometric technique	Major findings
World Economy** 0.7	(Khamfula, 2007)	17 countries	Corruption (Corruption Index from Centre for Corruption Research)	OLS	Positive and significant
International Review of Economics & Finance 0.911	(Evrensel, 2010)	31 developed and 90 developing countries	Corruption (ICRG), 1990 - 2000	OLS	Negative and significant
Journal of Business Studies Quarterly	(Dridi, 2013)	82 countries, developed and developing	ICRG, 1980-2002	(3SLS), (2SLS)	negative effect of corruption on economic growth
Journal of Economic Development, Management, IT, Finance & Marketing	(Shera et al., 2014)	22 developing countries	ICRG, 2001-2012	fixed effects, Random Effects	the statistically significant negative relationship between corruption and economic growth
Review of Islamic Economics	(Pramanik, 2007)	18 Arab countries	corruption perception index(CPI), 1972-1999	OLS	Negative and significant
European Journal of Political Economy** 1.16	(Méndez and Sepúlveda, 2006)	130 countries	ICRG, 1982 - 2001	OLS	Significant
Journal of Economics Studies and Research	(Touati, 2014)	21 Arab Countries	CPI 2005 - 2010	OLS	Significant

Corruption \ Democracy and Economic Growth					
Journal/ IF or ABS	Authors	Sample country	Data source & Period	Econometric technique	Major findings
International Political Science Review	(Drury et al., 2006)	100 countries	Corruption (ICRG)	OLS	Corruption: negative and significant in non-democratic countries; positive and insignificant in democratic;

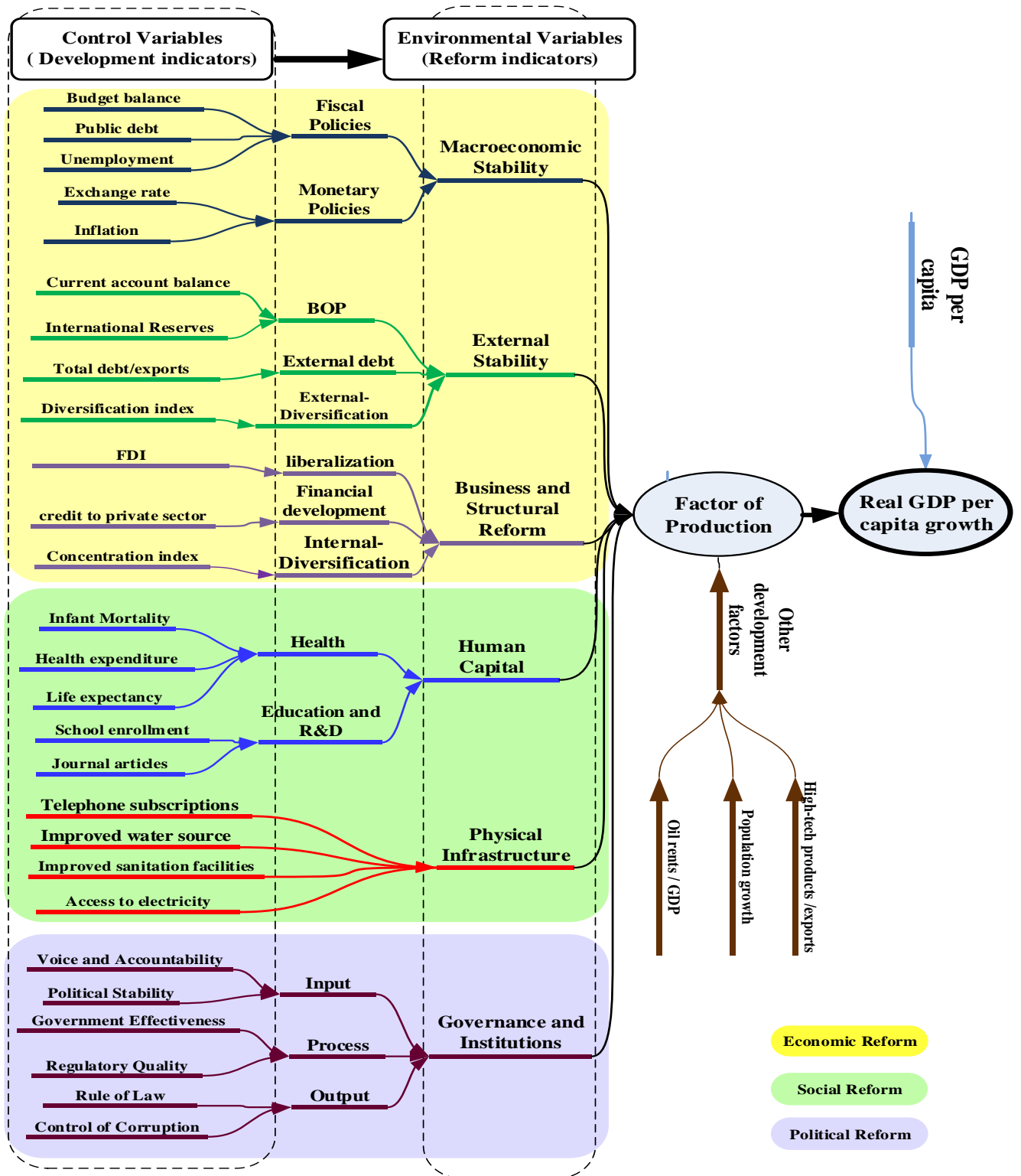
0.759			Democracy (FH and Polity IV), 1982 - 1997		Democracy: negative and insignificant
Economic Modelling** 0.73	(Butkiewicz and Yanikkaya, 2006)	29 developed and 85 developing countries	FH , Polity III, 1970 - 1999	(SUR) , (3SLS)	The rule of law – positive and significant effect. Corruption – negative and insignificant. Bureaucracy & Democracy – positive and insignificant.
Review of Development Economics 0.50	(Assiotis and Sylwester, 2014)	119 countries	Democracy (FH & Polity Iv), Corruption(ICRG & Transparency International), Governance (WGI)	System GMM, Fixed effects model	Corruption and democracy: positive and significant Governance: negative and significant

Rule of Law \ Regulations and Economic Growth					
Journal/ IF or ABS	Authors	Sample country	Data source & Period	Econometric technique	Major findings
World Development*** 1.7	(Jalilian et al., 2007)	117 countries for cross section regression 96 countries for panel regression	WGI,1980 - 2000	OLS, fixed effects, Random Effects	Positive and significant effect
World Economy** 0.7	(Busse and Groizard, 2008)	84 countries	Rule of Law (PRS Group), 1994 - 2003	GMM	Positive and significant
Journal of Applied Economics 0.250	(Butkiewicz and Yanikkaya, 2011)	Over 100 developed and developing nations	WGI, Two-sample period: 1970 – 1999 1990 - 2004	(SUR)	developing countries: Positive and significant Developed countries: positive but not significant
World Development*** 1.7	(Haggard and Tiede, 2011)	74 developing and transition countries	WGI, 2003 - 2007	(2SLS)	Both positive and significant

Governance and Poverty reduction					
Journal/ IF or ABS	Authors	Sample country	Data source & Period	Econometric technique	Major findings
Development and Change*** 1.5	Kwon and Kim (2014)	98 developing countries	WGI,2002 - 2009	Pooled GLS, fixed effects, Random Effects	Only voice and accountability is negative and significant
Economics of governance* 0.564	(Gupta et al., 2002)	100 countries	CPI, 1980 -1997	OLS, instrumental variable (IV) techniques	higher corruption is associated with higher income inequality

Appendices of chapter 4

Appendix 4.1: Description of the six principal components in the empirical models



Appendix 4.2: Aggregated Indicators of Economic Reforms, Human Capital, Physical Infrastructure and Governance

Given the vast number of reform indicators (27 variables) considered in the model, it was necessary to combine (via a linear approach) them into a meaningful number for ease of interpretation. Each linear combination corresponds to a principal component. The principal components of the basic indicators were extracted for each group of indicators from an annual panel of 78 countries from 1995 to 2014. The six composite indicators were constructed as the weighted sum of one or two principal components, depending on the explanatory power of each component, and the most significant principal components were selected based on eigenvalues greater than one as presented in Appendices 4.3.1-6 below.

For instance, the first principal component is the linear combination of X-variables that has maximum variance (among all linear combinations), so it accounts for most of the variations in the data as possible. The coefficients for that component is estimated in such a way that its variance is maximised, subject to the constraint that the sum of the squared coefficients is equal to one. While, the second principal component is the linear combination of X-variables that accounts for as much of the remaining variation as possible, with the constraint that the correlation between the first and second component is zero. The next components follow a similar approach (Härdle and Simar, 2007, p. 234).

The weight attributed to each principal component corresponds to its relative contribution to the variance of the initial indicators (calculated from the cumulative). The contribution of each individual indicator to the composite indicator can then be computed as a linear combination of the weights associated with the one or two principal components and of the loadings of the individual indicators on each principal component.

The raw data used for the principal component analysis tend to give more emphasis to variables that have higher variances than those with very low variances. In effect, the results of the analysis will depend on what units of measurement are used to measure each variable. That would imply that a principal component analysis should only be used with the raw data if all variables have the same units of measure. Therefore, to overcome this problem, a principal component analysis is based on standardised counts, all species would be weighted equally regardless of how abundant they are (Tabachnick, 2013).

Since the variables in this study have different units of measurement, the variables were standardised before a principal components analysis was carried out. Standardisation of the variables was undertaken by subtracting each dataset from their means and dividing by their standard deviations as follows (Tabachnick, 2013):

$$Z_{ij} = \frac{X_{ij} - \bar{x}_j}{s_j}$$

Where,

X_{ij} = data for variable j in sample unit i

\bar{x}_j = mean for variable j

s_j = standard deviation for variable j

In this case, the higher and lower value indicates that standardised variables are above and below the mean (global average) respectively, which reflect the condition of each variable in a country compared to the world means. Thus, the new variable value based on the observation's component loading and the standardised value of the original variable summed over all variables.

$$Score_{ik} = \sum Z_{ij} L_{ik}$$

Where, Z_{ij} is the standardised value for observation i on variable j and L_{jk} is the loading of variable j on component k .

Finally, the study used the Kaiser-Meyer-Olkin (KMO) test to verify the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. A KMO statistic is computed for each individual sub-indicator, and their sum is the KMO overall statistic. KMO varies between 0 and 1. An estimated KMO should be 0.50 or higher but should not exceed 0.80 as too high inter-correlations may indicate a multicollinearity problem (Nardo et al., 2005) .

Appendix 4.3.1: Macroeconomic Stability indicators (M)

Table A: Principal Components Analysis		
Component Number	Eigenvalue	Cumulative
Comp1	1.555	0.411
Comp2	1.136	0.718
Comp3	0.950	0.887
Comp4	0.842	0.940
Comp5	0.564	1.000

Table B: Component Weights		
Variables	Comp1	Comp2
M1	-0.042	0.681
M2 ⁺	0.636	-0.056
M3	0.558	-0.0334
M4	0.256	0.627
M5	0.463	0.101

Explanations:

In Table A, two components have been extracted, since two components had eigenvalues greater than or equal to 1.0. Together they account for 71.8 % of the variability in the original data.

Table B shows the equations of the principal components as follow:

the first principal component has the equation:

$$\text{Component1} = -0.042 * M1 + 0.636 * M2 + 0.558 * M3 + 0.256 * M4 + 0.463 * M5$$

the second principal component has the equation:

$$\text{Component2} = 0.681 * M1 - 0.056 * M2 - 0.033 * M3 + 0.627 * M4 + 0.101 * M5$$

the score of aggregated indicators of macroeconomic instability (M) has the equation:

$$M = ((0.411/0.718) * \text{Comp1}) + ((0.307/0.718) * \text{Comp2})$$

Overall KMO statistic values = 0.63

⁺ The variable is reversed to reflect the direction as other variables

Appendix 4.3.2.1: External Stability indicators (E) for developing countries

Principal Components Analysis

Component Number	Eigenvalue	Cumulative
Comp1	1.873	0.446
Comp2	1.198	0.887
Comp3	0.740	0.912
Comp4	0.229	1.000

Table of Component Weights

	Component1	Component2
E1	0.620	0.196
E2 ⁺	0.608	0.008
E3	0.594	0.309
E4 ⁺	-0.028	0.927

Explanations:

Regarding (table A), two components have been extracted, since two components had eigenvalues greater than or equal to 1.0. Together they account for 88.7 % of the variability in the original data.

Regarding (table B), shows the score of aggregated indicator of external stability (E) has the equation :

$$E = ((0.446/0.887) * \text{Comp1}) + ((0.441/0.887) * \text{Comp2})$$

Based on the first and the second principal components equations:

$$\text{Component1} = 0.620 * E1 + 0.608 * E2 + 0.594 * E3 - 0.028 * E4$$

$$\text{Component2} = 0.196 * E1 + 0.008 * E2 + 0.309 * E3 + 0.927 * E4$$

Overall KMO statistic values = 0.68

⁺ The variable is reverse to reflect the direction as other variables

Appendix 4.3.2.2: External Stability indicators (E) for Advanced economies

Principal Components Analysis

Component Number	Eigenvalue	Cumulative
Comp1	1.255	0.761
Comp2	0.902	0.885
Comp3	0.715	1.000

Table of Component Weights

	Component1
E1	0.945
E4 ⁺	0.692
E5	0.715

Explanations:

Regarding (table C), one component has been extracted, since it had eigenvalues greater than or equal to 1.0. and account 76.1 % of the variability in the original data.

Regarding (table D), shows the score of aggregated indicator of external stability (E) has the equation :

$$E = 0.945 * E1 + 0.692 * E4 + 0.715 * E5$$

Overall KMO statistic values = 0.57

⁺ The variable is reverse to reflect the direction as other variables

Appendix 4.3.3: Business and Structural Reform indicators (B)

Principal Components Analysis

Component Number	Eigenvalue	Cumulative
Comp1	1.516	0.831
Comp2	0.977	0.972
Comp3	0.506	1.000

Table of Component Weights

Variables	Component1
B1	0.977
B2	0.689
B3 ⁺	0.694

Explanations:

Regarding (table A), one component has been extracted, since it had eigenvalues greater than or equal to 1.0, and account 83.1% of the variability in the original data.

Regarding (table B), shows the the score of aggregated indicator of Business and Structural Reform indicators (B) has the equation :

$$B = 0.977*B1 + 0.689*B2 + 0.694*B3$$

Overall KMO statistic values = 0.61

⁺ The variable is reverse to reflect the direction as other variables

Appendix 4.3.4: Human Capital indicators (H)

Principal Components Analysis

Component Number	Eigenvalue	Cumulative
Comp1	2.855	0.571
Comp2	1.019	0.767
Comp3	0.652	0.897
Comp4	0.427	0.983
Comp5	0.087	1.000

Table of Component Weights

	Component1	Component2
H1 ⁺	0.5411	0.0743
H2	0.4768	-0.1928
H3	0.1651	0.9430
H4	0.5362	0.0023
H5	0.4060	-0.2608

Explanations:

Regarding (table A), two components have been extracted, since two components had eigenvalues greater than or equal to 1.0. Together they account for 76.7% of the variability in the original data.

Regarding (table B), shows the equations of the principal components as follow:

the first principal component has the equation :

$$\text{Component1} = 0.541 \cdot H1 + 0.476 \cdot H2 + 0.165 \cdot H3 + 0.536 \cdot H4 + 0.406 \cdot H5$$

the second principal component has the equation :

$$\text{Component2} = 0.074 \cdot H1 - 0.192 \cdot H2 + 0.943 \cdot H3 + 0.002 \cdot H4 - 0.260 \cdot H5$$

the score of aggregated indicator of Human Capital indicators (H) has the equation :

$$H = ((0.571/0.767) \cdot \text{Component1}) + ((0.197/0.767) \cdot \text{Component2})$$

Overall KMO statistic values = 0.72

⁺ The variable is reverse to reflect the direction as other variables

Appendix 4.3.5: Physical Infrastructure Indicators (P)

Principal Components Analysis

Component Number	Eigenvalue	Cumulative
Comp1	3.405	0.851
Comp2	0.246	0.913
Comp3	0.211	0.965
Comp4	0.136	1.000

Table of Component Weights

	Component1
P1	0.506
P2	0.511
P3	0.511
P4	0.591

Explanations:

Regarding (table A), one component has been extracted, since only one component had an eigenvalue greater than or equal to 1.0. It accounts for 85.1 % of the variability in the original data.

Regarding (table B), shows the score of aggregated indicator of Physical Infrastructure Indicators (P) has the equation:

$$P = 0.506 * P1 + 0.511 * P2 + 0.511 Pp3 + 0.591 * P4$$

Overall KMO statistic values = 0.84

Appendix 4.3.6: Governance and institutions indicators (G)

Principal Components Analysis

Component Number	Eigenvalue	Cumulative
Comp1	5.24942	0.874
Comp2	0.330975	0.930
Comp3	0.245029	0.970
Comp4	0.100948	0.987
Comp5	0.0376473	0.994
Comp6	0.035983	0.100

Table of Component Weights

	Component
CC	0.418391
GE	0.425296
RL	0.427275
VA	0.38429
RQ	0.416892
PS	0.374205

Explanations:

Regarding (table A), one component has been extracted, since only one component had an eigenvalue greater than or equal to 1.0. It accounts for 87.4 % of the variability in the original data.

Regarding (table B), shows the score of Governance indicator (G) has the equation :

$$G = 0.418391*CC + 0.425296* GE+ 0.427275* RL+ 0.38429* VA+ 0.416892* RQ+ 0.374205* PS$$

Overall KMO statistic values = 0.87

Appendix 4.4: Definition and sources of data of the explanatory variables

Principal components / Explanatory variables	Definition	Source(s) of data
1. Macroeconomic Stability indicators (M)		
1.1 Exchange rate (M1)	Official nominal exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legal exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar).	<i>IMF, Government Finance Statistics Yearbook, data files and EIU estimates</i>
1.2 Budget balance /GDP (M2)	Central government receipts minus (including grants) central government outlays, as a percentage of GDP.	
1.3 Public debt/GDP (M3)	Total debt in local currency owed by the government to domestic residents and foreign nationals expressed as a percentage of GDP.	
1.4 Consumer price index (M4)	Percentage change in the consumer price index in local currency (period average), reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services annually. This variable is used as a proxy for Inflation.	
1.5 Recorded unemployment (%) (M5)	Unemployment refers to the share of the labour force that is without work but available for and seeking employment.	
2. External Stability indicators (E)		
2.1 Current account balance/GDP (E1)	Current-account balance as a percentage of nominal GDP. The current account balance is the sum of net exports of goods and services, net primary and secondary income.	<i>International Monetary Fund (IMF), Government Finance Statistics Yearbook, data files and EIU estimates</i>
2.2 External debt/exports of G&S (E2)	Total external debt stock as a percentage of exports of goods, non-factor services, income, and workers remittances	
2.3 Total reserves in months of imports (E3)	Total reserves include holdings of monetary gold, special drawing rights (SDRs), reserves held by the IMF, and holdings of foreign exchange under the control of monetary authorities. This item shows reserves expressed in terms of the number of months of imports of goods and services they could pay for [Reserves/(Imports/12)].	
2.4 Diversification index(E4)	Diversification index indicates whether the export structure of each country differs from the world patterns. This index takes values between 0 (a high degree of diversification) and 1 (a low degree of diversification).	
		<i>United Nations Conference on Trade and Development (UNCTAD)'s a database</i>

2.5 Terms of Trade (E5)	Net barter terms of trade index are calculated as the percentage ratio of the export unit value indexes to the import unit value indexes, measured relative to the base year 2000.	<i>UNCTAD's database, Handbook of Statistics and data files, and IMF, International Financial Statistics</i>
3. Structural and Business Reform (B)		
3.1 Inward foreign direct investment/GDP (B1)	Net flows of direct investment capital by non-residents into the country, as a percentage of GDP. Foreign direct investment is the net inflows of investment to acquire a lasting management interest (10 per cent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital, as shown in the balance of payments.	<i>IMF, International Financial Statistics, Balance of Payments databases and EIU estimates</i>
3.2 Domestic credit to the private sector by banks / GDP (B2)	Percentage change in Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of no equity securities, and trade credits and other accounts receivable that establish a claim for repayment. This variable is used as a proxy for financial development.	
3.3 Concentration index(B3)	The export concentration index shows how exports of individual countries are concentrated on several products or otherwise distributed in a more homogeneous manner among a series of products; this index takes values between 0 (minimum concentration) and 1 (maximum concentration).	<i>UNCTAD's database</i>
4. Human Capital indicators (H)		
4.1 Infant Mortality rate (H1)	Infant Mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in each year.	
4.2 Public Health expenditure / GDP (H2)	Public health expenditure includes recurrent and capital spending from government (central and local) budgets, external borrowings, and grants.	<i>World Health Organization, Global Health database</i>
4.3 Life expectancy at birth, total (years) (H3)	Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.	

4.4. School enrollment, primary (H4)	<p>Primary School enrollment is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Primary education provides children with essential reading, writing, and mathematics. This variable is used as a proxy for educational improvement in a country.</p>	<p><i>United Nations Educational, Scientific, and Cultural Organization (UNESCO)</i></p>
4.5 Scientific and technical journal articles(H5)	<p>It refers to the number of scientific and engineering articles published in the following fields: physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences. This variable is used as a proxy of R&D, Innovation in a country.</p>	<p><i>National Science Foundation, Science and Engineering Indicators</i></p>
5. Physical Infrastructure Indicators (P)		
5.1 Fixed telephone subscriptions (P1)	<p>Refers to the sum of active numbers of analogue fixed telephone lines, voice-over-IP (VoIP) subscriptions, fixed wireless local loop (WLL) subscriptions, ISDN voice-channel equivalents and fixed public payphones, per 100 people.</p>	<p><i>The International Telecommunication Union, World Telecommunication</i></p>
5.2 Improved water source (P2)	<p>Refers to the percentage of the population using an improved drinking water source. The improved drinking water source contains piped water on-premises, and other improved drinking water sources (public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs, and rainwater collection).</p>	<p><i>WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation. Based on national censuses and nationally representative household surveys</i></p>
5.3 Improved sanitation facilities (P3)	<p>Refers to the percentage of the population using improved sanitation facilities, which are likely to ensure hygienic separation of human excreta from human contact. They include flush/pour flush (to the piped sewer system, septic tank, pit latrine), ventilated improved pit (VIP) latrine, pit latrine with slab, and composting toilet.</p>	<p><i>WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation. Based on national censuses and nationally representative household surveys</i></p>
5.4 Access to electricity (% of the population) (P4)	<p>Access to electricity is the percentage of the population with access to electricity. Electrification data are collected from industry, national surveys and international sources.</p>	<p><i>World Bank, Sustainable Energy for All (SE4ALL) database</i></p>

6. Governance indicators		
6.1 Voice and Accountability (VA):	The extent to which citizens of a country can participate in the selection of governments. Includes indicators measuring various aspects of the political process, civil liberties and political rights. Also, the independence of the media, which serves an important role in holding monitoring those in authority and holding them accountable for their actions.	<i>The World Bank, The Worldwide Governance Indicators (WGI)</i>
6.2 Political Stability and Absence of Violence (PS):	Perceptions of the likelihood that the government in power will be destabilised or overthrown by possible unconstitutional and/or violent means. This index captures the idea that the quality of governance in a country is compromised by the probability of changes in government, which not only has a direct effect on the continuity of policies but also at a deeper level undermines the ability of all citizens to select and replace those in power peacefully.	
6.3 Government Effectiveness (GE):	Perceptions of the quality of public service provision, quality of bureaucracy, the competence of civil servants, independence of the civil service from political pressures, the credibility of the government's commitment to policies. The focus of this index is on "inputs" required for the government to be able to produce and implement good policies and deliver public goods.	
6.4 Regulatory Quality (RQ):	The incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development.	
6.5 Rule of Law (RL):	Measuring the extent to which agents have confidence in and abide by the rules of society and the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence. These indicators measure the success of society in developing an environment in which fair and predictable rules form the basis for economic and social interactions.	
6.6 Control of Corruption (CC):	Perceptions of corruption defined as the exercise of public power for private gain, including both petty and grand corruption and state capture.	

7. Other Control variables:

<p>7.1 Annual population growth rate</p>	<p>The population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are considered part of the population of the country of origin. (This variable is used as a proxy demographic situation in a country.</p>	<p><i>United Nations Population Division. World Population Prospects</i></p>
<p>7.3 Oil rents / GDP</p>	<p>Oil rents are the difference between the value of crude oil production at world prices and total costs of production. This is done by estimating the world price of units of specific commodities and subtracting estimates of average unit costs of extraction or harvesting costs (including a normal return on capital). These unit rents are then multiplied by the physical quantities countries extract or harvest to determine the rents for each commodity as a share of gross domestic product (GDP). (This variable is used as a proxy of natural resource in a country.</p>	<p>World Bank's database</p>
<p>7.3 High-tech products/exports</p>	<p>High-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery. (This variable is used as a proxy of technological capability in a country.</p>	<p><i>United Nations, Comtrade database through the WITS platform.</i></p>

Appendix 4.5.1: List of Advanced economies included in the study by region

East Asia (EAS)	Europe (ECS)		North America (NAC)
Australia	Austria	Italy	Canada
Korea, Rep.	Belgium	Netherlands	United States
New Zealand	Czechia	Norway	
Singapore	Denmark	Portugal	
Japan	Finland	Slovak	
	France	Slovenia	
	Germany	Spain	
	Greece	Sweden	
	Ireland	United Kingdom	
	Israel		

Appendix 4.5.2: List of developing economies included in the study by region

Arab Countries (ARB)	Central Asia (CSA)	East Asia (EAS)	Europe (ECS)	Latin America (LCN)	Sub-Saharan Africa (SSF)
Algeria	Azerbaijan	China	Bulgaria	Argentina	Angola
Bahrain	Bangladesh	Indonesia	Croatia	Brazil	Kenya
Egypt	India	Malaysia	Poland	Chile	Namibia
Iraq	Iran	Thailand	Romania	Colombia	Nigeria
Jordan	Kazakhstan		Turkey	Costa Rica	South Africa
Kuwait	Russia			Cuba	Zambia
Lebanon				Ecuador	Zimbabwe
Libya				Mexico	Ghana
Morocco				Peru	Senegal
Oman				Venezuela	
Qatar				Paraguay	
Saudi Arabia					
Sudan					
Syria					
Tunisia					
United Arab Emirates					
Yemen					

Appendix. 4.5.3: List of the regions included in the analysis, 1995 - 2014

Region code	No. of countries	No. of observations (1995 – 2014)
Arab Countries	17	340
Central & south Asia	6	120
East Asia	9	180
Europe	24	480
Latin America	11	220
North America	2	40
Sub-Saharan Africa	9	180
Total	78	1,560

Appendix 4.5.4: List of the Arab sub-groups

Arab sub-groups	Names of countries	No. of observations
Low-income countries (LICs)	Sudan Yemen	40
Resource-poor, labour-abundant (RPLA)	Egypt Jordan Lebanon Morocco Tunisia	100
Resource-rich, labour-abundant RRLA	Algeria Iraq Syria	60
Resource-rich, labour-importing RRLI	Bahrain Kuwait Libya Oman Qatar Saudi Arabia United Arab Emirates	140
Total		340

Appendix 4.5.5: List of the Arab sub-groups

Arab sub-groups	Names of countries	No. of observations
Arab Emerging economies	Egypt Jordan Lebanon Morocco Tunisia	100
Arab countries with civil war	Algeria ⁵⁸ Iraq ⁵⁹ Syria ⁶⁰ Sudan ⁶¹ Yemen ⁶² Libya ⁶³	120
Arab Gulf countries	Bahrain Kuwait Oman Qatar Saudi Arabia United Arab Emirates	120
Total		340

⁵⁸ The Algerian Civil War (1992 - 2002) (Hagelstein, 2008).

⁵⁹ Shia uprising in Iraq (1999), US invasion of Iraq (2003-2011), and The Iraqi insurgency, after the withdrawal of U.S. troops in 2011-2013), and an armed conflict against Islamic State of Iraq and Syria (ISIS) (2014-present)(Marr, 2018).

⁶⁰ Syrian civil war (2011- present) (Baczko et al., 2018)

⁶¹ The Second Sudanese Civil War (1983 - 2005) (Johnson, 2011)

⁶² Yemeni Civil War (2011-present)(Tarran, 2019)

⁶³ Libyan civil war (2011- present)(Heydemann, 2018)

Appendices of chapter 5

Appendix 5.1

Table 5.1: Descriptive statistics of developing and developed countries										
Variable	Developing economies					Advanced economies				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
GDP growth	1040	0.88	1.20	-2.50	2.69	520	0.80	1.00	-2.30	2.65
MACRO-INSTABILITY	1040	0.11	0.75	-2.22	2.56	520	-0.22	0.48	-1.51	1.57
Exchange rate	1040	614.1	2169.8	0.0	30000	520	49.0	213.2	0.5	1401.4
Budget balance	1040	-2.0	6.4	-39.4	34.1	520	-1.7	4.6	-32.6	18.7
Public debt	1040	48.5	39.7	3.1	282.6	520	65.7	37.8	6.3	249.1
CPI	1040	16.5	68.1	-15.5	1753.2	520	2.4	2.0	-4.5	13.5
Unemployment	1040	9.7	5.6	0.0	40.0	520	7.7	4.0	1.4	27.5
EXTERNAL STABILITY	1020	-0.04	0.9	-3.3	2.5	520	0.04	0.8	-2.9	2.1
Current account	1040	0.3	10.7	-36.7	45.2	520	0.7	6.1	-14.4	26.0
External debt	1040	144.1	170.5	6.7	1888.3					
Total reserves	1020	6.7	6.7	0.2	81.5					
Diversification index	1040	0.7	0.1	0.4	0.9	520	0.4	0.1	0.2	0.7
Terms of Trade						520	100.6	13.0	49.9	157.6
STRUCTURAL REFORM	1040	-0.28	0.83	-5.43	1.40	520	0.55	0.55	-2.11	2.10
FDI	1040	-0.3	0.8	-5.4	1.4	520	4.5	7.4	-14.4	87.4
Domestic credit	1040	3.3	4.7	-6.0	55.1	520	91.8	38.8	0.2	202.2
Concentration index	1040	36.9	29.3	0.0	165.7	520	0.1	0.1	0.0	0.5
Human Capital	1040	-0.53	1.31	-5.70	1.47	520	1.07	0.33	0.18	2.07
Infant Mortality	1040	30.7	25.0	3.8	132.8	520	4.5	1.6	2.0	12.6
Health expenditure	1040	2.8	1.5	0.0	11.2	520	6.3	1.8	0.9	10.1
Life expectancy	1040	68.7	8.4	40.7	81.5	520	79.0	2.2	72.3	83.6
School enrolment	1040	102.0	12.2	45.0	136.1	520	103.0	4.5	84.4	122.4
Scientific articles	1040	6674.1	31220.1	0.8	430832.0	520	35143.8	64849.0	434.3	421239.0
INFRASTRUCTURE	1040	-0.65	1.95	-6.96	1.25	520	1.31	0.12	0.77	1.51
Telephone	1040	13.1	9.9	0.1	43.1	520	47.2	11.0	11.7	72.2
Improved water	1040	85.7	13.7	45.7	100.0	520	99.5	1.2	90.6	100
Access electricity	1040	73.2	24.5	8.6	100.0	520	98.8	2.1	89.2	100
Improved sanitation	1040	83.3	24.8	10.8	100.0	520	100	0.0	100	100
Pop. growth	1040	0.54	0.91	-5.47	7.99	520	-0.51	1.20	-6.38	4.37
Oil rent	1040	0.67	2.47	-7.18	4.18	520	-2.46	2.77	-8.79	2.36
Technology	976	1.02	1.86	-9.52	4.15	520	2.67	0.62	1.14	4.14

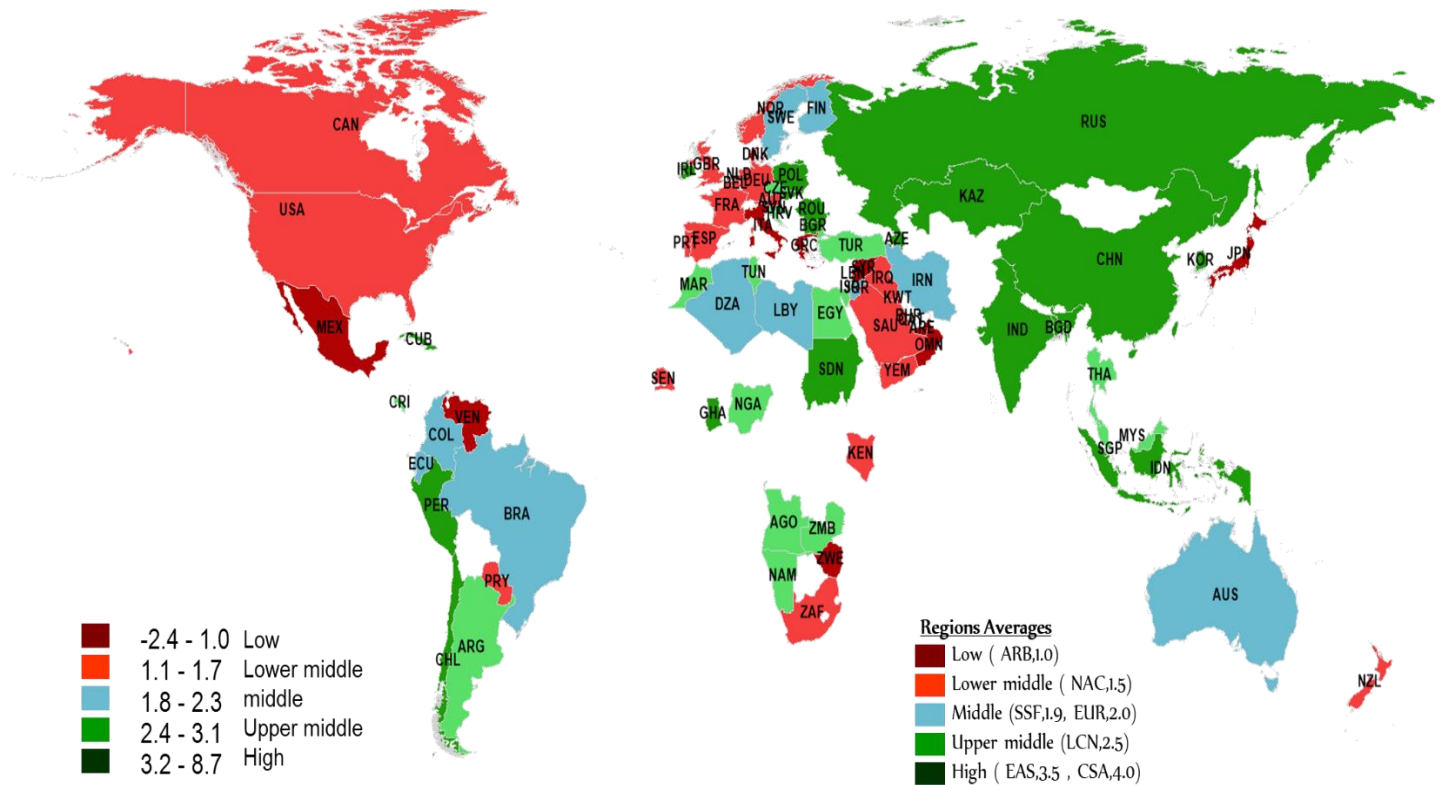
Table 5.2: Descriptive statistics for All Arab countries and Arab Emerging Economies										
Variable	All Arab Countries					Arab Countries with civil war				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
GDP growth	340	0.6	1.2	-2.5	2.5	120	0.8	1.1	-2.3	2.5
MACRO-INSTABILITY	340	-0.1	1.0	-2.2	2.1	120	0.4	0.8	-1.8	2.1
Exchange rate	340	1.9	2.7	-1.3	7.7	120	3.6	2.5	-0.9	7.7
Budget balance	340	-0.4	1.8	-3.7	3.5	120	-0.3	1.7	-3.7	3.5
Public debt	340	3.7	1.0	1.1	5.3	120	3.6	1.1	1.1	5.3
CPI	340	1.3	1.2	-3.1	5.9	120	1.8	1.5	-2.7	5.9
Unemployment	340	2.2	0.8	-1.2	3.7	120	2.8	0.3	1.97	3.7
EXTERNAL STABILITY	321	0.1	1.004	-3.3	2.5	101	-0.03	1.5	-3.3	2.5
Current account	340	0.5	2.1	-3.5	3.8	120	0.3	2.0	-3.3	3.7
External debt	340	4.5	1.5	1.9	17.5	120	4.9	2.2	1.9	17.5
Total reserves	321	1.8	0.99	-1.8	4.4	101	1.98	1.4	-1.8	4.4
Diversification index	340	-0.3	0.1	-0.7	-0.1	120	-0.2	0.1	-0.5	-0.1
STRUCTURAL REFORM	340	-0.5	0.96	-5.4	1.4	120	-1.2	0.8	-5.4	1.0
FDI	340	0.4	1.7	-5.6	8.7	120	0.4	1.8	-5.6	8.7
Domestic credit	340	3.1	1.4	-5.5	4.6	120	1.7	1.6	-5.5	3.5
Concentration index	340	-0.9	0.7	-2.3	-0.02	120	-0.5	0.4	-1.8	-0.02
Human Capital	340	-0.5	1.2	-5.6	0.998	120	-1.3	1.6	-5.6	0.99
Infant Mortality	340	2.97	0.6	1.7	4.4	120	3.5	0.5	2.5	4.4
Health expenditure	340	0.7	0.8	-4.7	1.9	120	0.4	1.2	-4.7	1.7
Life expectancy	340	4.6	0.2	3.8	4.9	120	4.5	0.2	3.8	4.8
School enrolment	340	4.3	0.1	4.0	4.4	120	4.2	0.1	4.03	4.3
Scientific articles	340	5.7	1.5	2.1	9.2	120	4.9	1.3	2.1	8.3
INFRASTRUCTURE	340	-0.2	1.5	-5.3	1.2	120	-1.4	1.9	-5.3	0.6
Telephone	340	2.3	0.9	-1.4	3.5	120	1.6	1.0	-1.4	3.01
Improved water	340	4.5	0.2	4.0	4.6	120	4.3	0.2	3.99	4.5
Access electricity	340	4.5	0.3	3.4	4.6	120	4.3	0.4	3.4	4.6
Sanitation	340	4.4	0.4	3.1	4.6	120	4.1	0.5	3.1	4.6
Pop. growth	340	0.9	0.8	-3.7	2.9	120	0.8	0.5	-1.2	2.5
Oil rent	340	1.6	2.96	-7.2	4.2	120	2.9	1.1	-2.2	4.2
Technology	301	-0.5	2.1	-9.5	2.5	82	-0.98	1.8	-9.3	2.2

Table 5.3: Descriptive statistics for Gulf Arab countries and Arab countries with civil war										
Variable	LICs					RPLA				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
GDP growth	40	1.1	0.6	-0.2	2.3	100	0.8	1.1	-2.1	2.5
MACRO-INSTABILITY	40	0.75	0.30	0.00	1.26	100	0.57	0.49	-0.30	1.83
Exchange rate	40	88.7	92.9	0.6	219.6	100	306.9	609.0	0.7	1621.4
Budget balance	40	-2.4	3.0	-9.0	7.0	100	-7.0	4.7	-22.6	3.4
Public debt	40	90.0	50.9	25.7	193.5	100	91.2	36.2	40.6	182.1
CPI	40	19.6	23.5	2.2	132.8	100	4.3	3.6	-0.7	18.3
Unemployment	40	15.1	1.2	12.4	17.8	100	11.7	3.3	6.2	22.9
EXTERNAL STABILITY	40	-1.2	1.3	-3.3	0.5	100	0.002	0.4	-0.9	1.0
Current account	40	-3.6	5.4	-18.1	12.3	100	-5.7	8.0	-32.0	11.8
External debt	40	443.5	495.1	53.0	1888.3	100	152.1	95.7	50.5	567.0
Total reserves	40	4.7	4.3	0.2	13.4	100	10.1	6.6	2.2	33.6
Diversification index	40	0.8	0.0	0.7	0.9	100	0.6	0.1	0.5	0.7
STRUCTURAL REFORM	40	-1.16	0.62	-3.18	-0.19	100	0.33	0.64	-1.77	1.40
FDI	40	1.72	2.99	-5.11	7.65	100	4.62	4.57	-0.21	23.54
Domestic credit	40	6.59	3.35	1.62	13.96	100	60.75	16.85	25.10	99.20
Concentration index	40	0.66	0.19	0.28	0.89	100	0.18	0.05	0.10	0.35
Human Capital	40	-3.1	1.1	-5.6	-1.3	100	0.0	0.7	-2.5	1.0
Infant Mortality	40	59.0	12.1	35.1	79.7	100	24.8	10.6	7.3	51.8
Health expenditure	40	1.6	0.6	0.8	2.7	100	3.1	1.3	1.1	6.7
Life expectancy	40	60.6	2.0	56.5	63.8	100	72.5	3.1	66.8	80.2
School enrolment	40	72.2	14.3	45.0	97.5	100	104.9	10.4	72.7	134.1
Scientific articles	40	107.2	109.7	8.2	437.8	100	1733.9	1991.3	54.7	9468.7
INFRASTRUCTURE	40	-3.9	0.9	-5.3	-2.5	100	0.2	0.6	-1.8	0.8
Telephone	40	2.3	1.6	0.2	4.8	100	10.9	4.6	3.8	19.4
Improved water	40	58.4	3.4	54.3	65.5	100	91.6	6.9	75.8	99.2
Access electricity	40	34.6	11.5	22.5	53.3	100	84.5	10.6	58.8	98.6
Sanitation	40	46.5	13.0	29.0	75.6	100	93.9	10.7	56.5	100
Pop. growth	40	1.0	0.1	0.7	1.4	100	0.5	0.4	-0.5	1.6
Oil rent	40	2.4	1.5	-2.2	3.7	100	-1.7	3.5	-7.2	2.5
Technology	40	-1.4	2.0	-9.3	2.2	100	0.9	1.0	-1.7	2.5

Table 5.3: Descriptive statistics for Gulf Arab countries and Arab countries with civil war										
Variable	RRLA					RRLI				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
GDP growth	60	0.6	1.2	-2.3	2.4	140	0.2	1.4	-2.5	2.5
MACRO-INSTABILITY	60	0.6	0.7	-0.8	2.1	140	-1.0	0.6	-2.2	0.6
Exchange rate	60	538.4	701.8	42.5	2214.0	140	1.9	1.6	0.3	3.8
Budget balance	60	-2.4	7.8	-35.4	10.9	140	4.2	11.5	-39.4	34.1
Public debt	60	56.8	43.5	6.7	151.6	140	26.6	26.7	3.1	134.2
CPI	60	10.3	16.3	-15.5	89.6	140	3.3	5.3	-10.2	38.9
Unemployment	60	16.4	7.3	7.2	40.0	140	7.0	6.0	0.3	20.1
EXTERNAL STABILITY	44	0.4	1.2	-1.9	2.5	137	0.5	0.8	-1.7	2.4
Current account	60	3.4	10.5	-26.5	24.7	140	12.5	13.7	-27.1	45.2
External debt	60	275.0	349.3	6.9	1469.9	140	49.4	32.7	8.4	157.8
Total reserves	44	15.7	11.7	2.1	40.3	137	8.8	11.5	1.4	81.5
Diversification index	60	0.8	0.1	0.6	0.9	140	0.8	0.1	0.5	0.9
STRUCTURAL REFORM	60	-1.26	1.05	-5.43	1.03	140	-0.69	0.69	-2.35	0.78
FDI	60	1.08	0.88	-0.02	3.35	140	2.43	3.74	-0.47	33.57
Domestic credit	60	8.56	5.92	0.00	23.33	140	39.96	16.16	6.17	84.46
Concentration index	60	0.63	0.25	0.17	0.98	140	0.60	0.14	0.32	0.85
Human Capital	60	-0.5	1.1	-3.6	1.0	140	0.02	0.4	-1.5	0.8
Infant Mortality	60	26.4	8.1	11.7	38.9	140	12.6	5.1	5.6	28.4
Health expenditure	60	2.3	1.2	0.0	5.2	140	2.3	0.5	1.4	3.5
Life expectancy	60	71.4	1.9	68.1	75.0	140	74.2	2.1	70.0	78.6
School enrolment	60	106.5	10.9	70.0	122.3	140	103.0	9.5	77.0	125.8
Scientific articles	60	603.7	920.5	22.9	4131.2	140	600.2	1194.3	16.2	7635.6
INFRASTRUCTURE	60	-0.1	0.4	-0.9	0.6	140	0.7	0.5	-0.5	1.2
Telephone	60	8.5	5.2	2.8	20.2	140	18.9	6.9	6.7	33.9
Improved water	60	86.3	3.4	78.2	91.2	140	93.1	10.0	71.2	100
Access electricity	60	85.0	6.1	71.5	95.7	140	97.5	3.0	84.8	100
Sanitation	60	94.7	5.2	81.3	100	140	98.3	3.5	87.2	100
Pop. growth	60	0.7	0.5	-1.2	1.3	140	1.2	0.9	-3.7	2.9
Oil rent	60	3.1	0.7	1.4	4.2	140	3.1	0.9	0.5	4.2
Technology	42	-0.6	1.5	-8.3	1.5	119	-1.3	2.4	-9.5	2.3

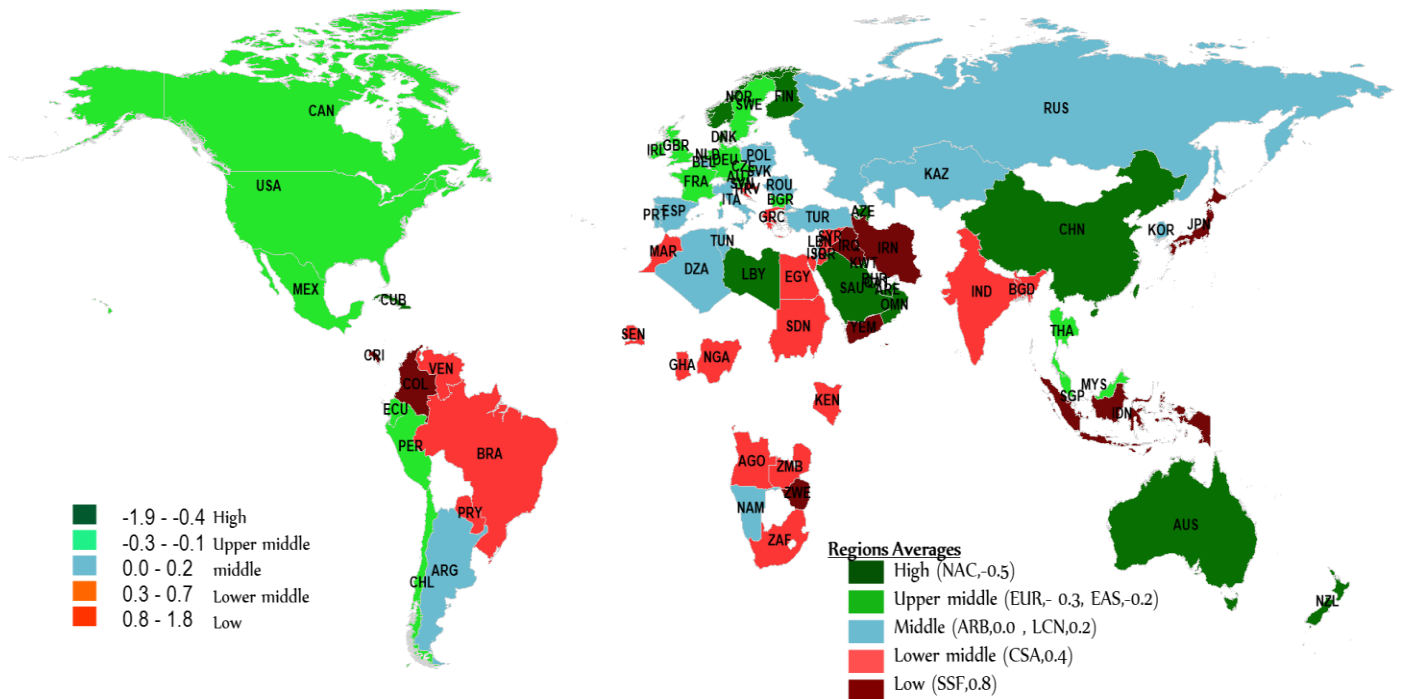
Appendix 5.2

Map 5.1: The Real GDP per Capita Growth Rates (Average 1995- 2014)



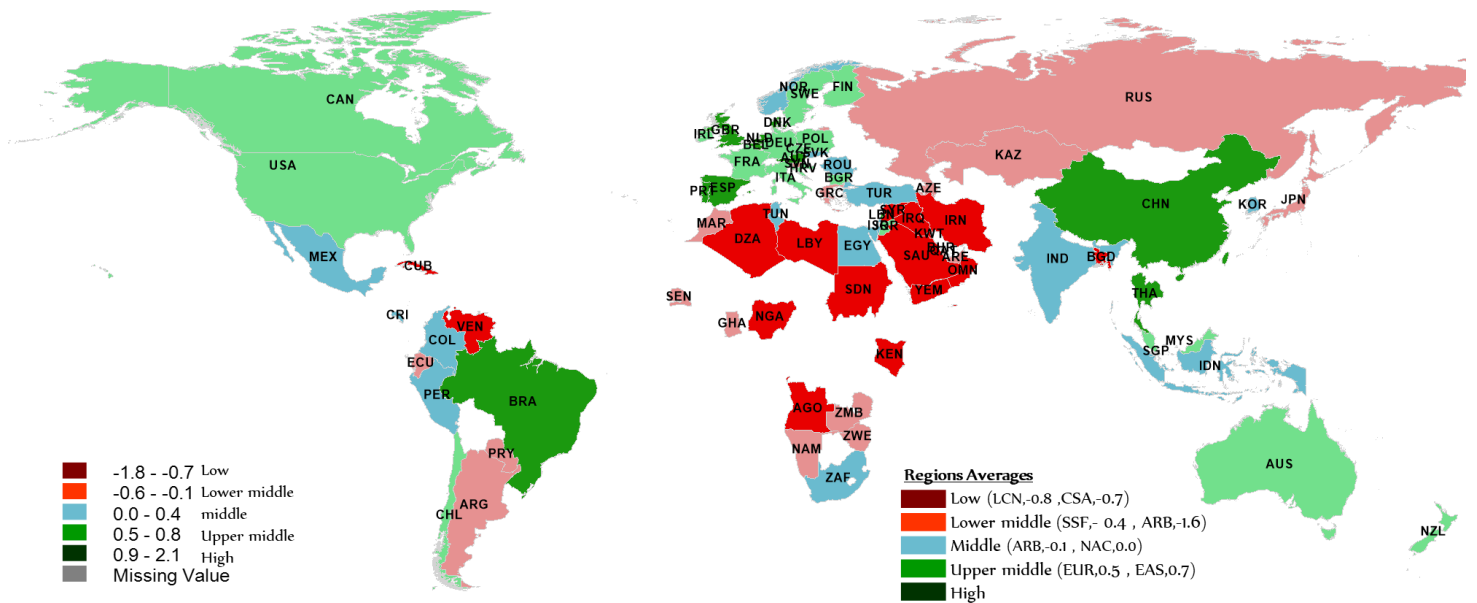
Source: Author's estimates based on EIU (2015) and created with ArcGIS 10.6 and Stata 14

Map 5.3: Macroeconomic Stability Indicator (Average 1995- 2014)



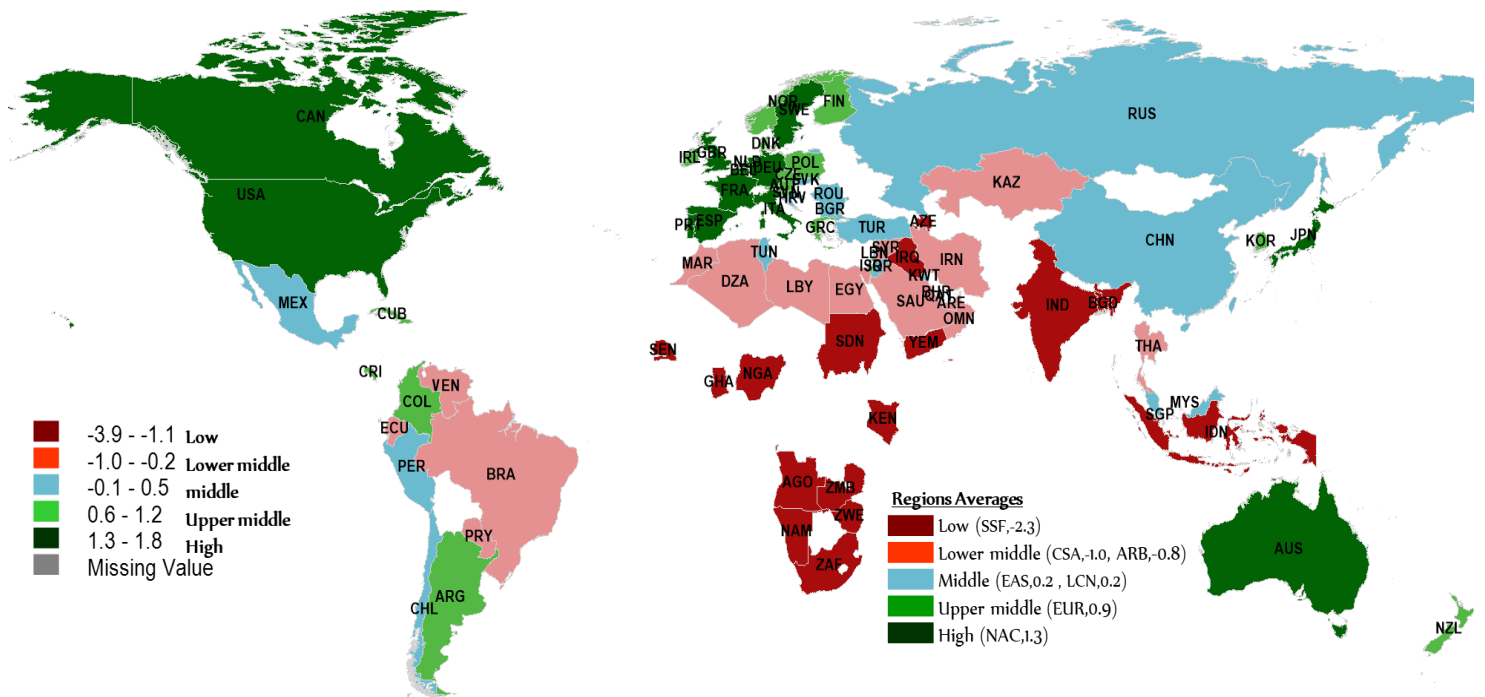
Source: Author's estimates based on IMF, Government Finance Statistics (2015) and created with ArcGIS 10.6 and Stata 14

Map 5.4: Business and Structural Reform Indicator (Average 1995- 2014)



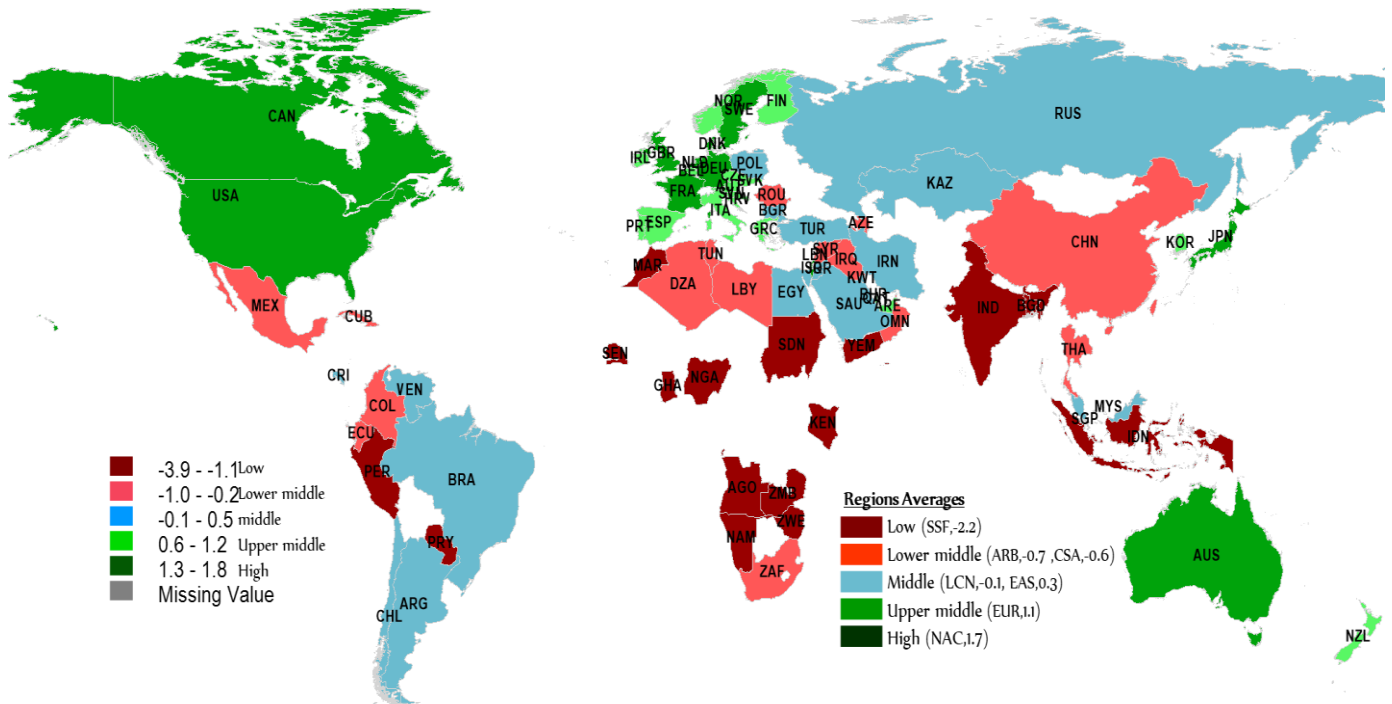
Source: Author's estimates based on IMF, International Financial Statistics and Balance of Payments databases (2015)

Map 5.5: Human Capital Indicator (Average 1995- 2014)



Source: Author's estimates based on Health indicators (WHO, 2015), Education indicators (UNESCO, 2015) & National Science Foundation (2015).

Map 5.6: Physical Infrastructure Indicator (Average 1995- 2014)



Source: Author's estimates based on the International Telecommunication Union, WHO/UNICEF Joint Monitoring Programme (JMP)

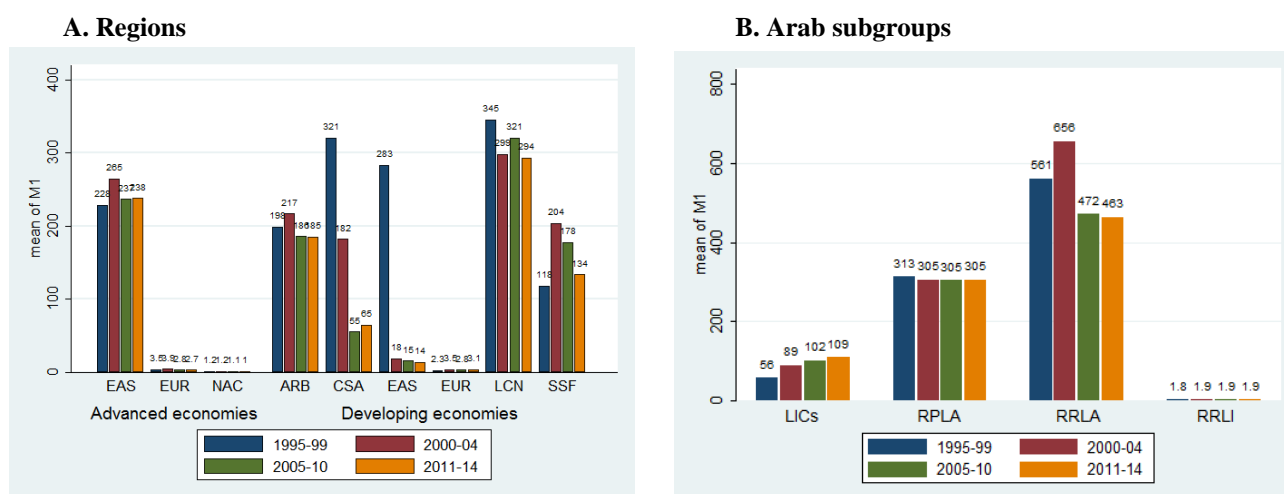
Appendix 5.3: Macroeconomic Stability indicators (M)

The macroeconomic stability indicators are illustrated in more details in the following subsections. Since fiscal policy and monetary policy are the two-key instruments for achieving macroeconomic objectives, with fiscal policy aiming to increase aggregate output, and monetary policies to control the interest and inflation rates, the rest of the analysis and discussion was organised by differentiating between the indicators related to each of these policies. The fiscal policy indicators include the budget deficit, public debt, and unemployment, while monetary policy indicators include exchange rate and inflation.

5.3.1 Indicators of Monetary Policy

Regarding the exchange rate component of monetary policy, in the Arab region, despite the differences in each country's choice of exchange rate regime, on the average, the level of the exchange rates relative to US dollar has remained constant over the last two decades (figure 5.3.1). This stabilisation was due to the exchange rate policies followed in the region. The RRLI countries peg their currencies to the US dollar or a basket dominated by the US dollar, while the RPLA and RRLA countries had mixed experiences with intermediate and semi-float regimes during the same time (Al-Abri, 2016). In addition, most of the ACs, particularly RRLI and RRLA, countries have also shown more resilience against financial crises as evidenced by their resilience in the face of the global financial crisis in 2008. This is mainly due to the massive international financial assets they had built up, especially during the oil boom 2003-2012. Therefore, this variable has a limited impact on macroeconomic instability in the ACs.

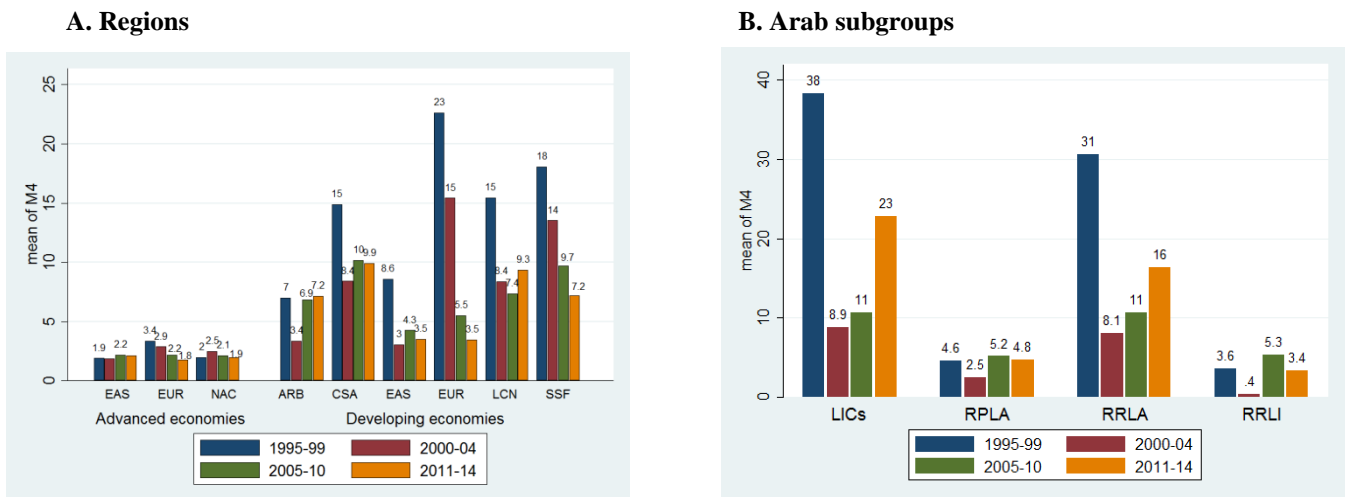
Figure 5.3.1: Exchange rate LCU: US\$ (average)



Inflation, which is measured by the consumer price index, is presented in Figure (5.3.2A). There are huge differences between the inflation rates in Advanced countries (mean of 2.4%) and the developing one (mean of 16.5%). Several reasons account for the high inflation rates in developing countries. In these countries, inflation is usually associated with underlying fiscal imbalances. Such imbalances can lead to accelerating inflation either by triggering higher money supply or by triggering a balance of payments pressure and forcing an exchange rate depreciation. Another possible explanation would regard the inflation rate in emerging countries as an indicator of an overheating economy that is influenced by activity variables such as the output gap. Finally, movements in the prices of specific commodities, such as petrol, lead to continuous changes in the aggregate price level “cost shocks on the supply-side”⁶⁴.

Average inflation rates in ACs are between the high levels in emerging countries and the low levels of the Advanced countries (Figure 5.3.2A), with an average level over the whole period of 6.3% compared to the world average of 11.8 %. As shown in chart bar (5.3.2B) ACs are classified into two main groups based on the pace of their inflation: the first group witnessing a mild-to-moderate inflation pace comprise RRLI and RPLA with an average of 3.5 %. The second group witnessing the highest and most persistent inflation comprise RRLA and LICs, with an average of 16%.

Figure 5.3.2: Consumer price index - Inflation rate (average)



Source: Author's estimates based on EIU (2015)

Three Arab countries were the main source of this surge in the inflation rates: Iraq, Syria and Sudan. Throughout the whole period inflation in Iraq, and more recently in Syria, was

⁶⁴ For further information Campillo and Miron (1997); Loungani and Swagel (2001)

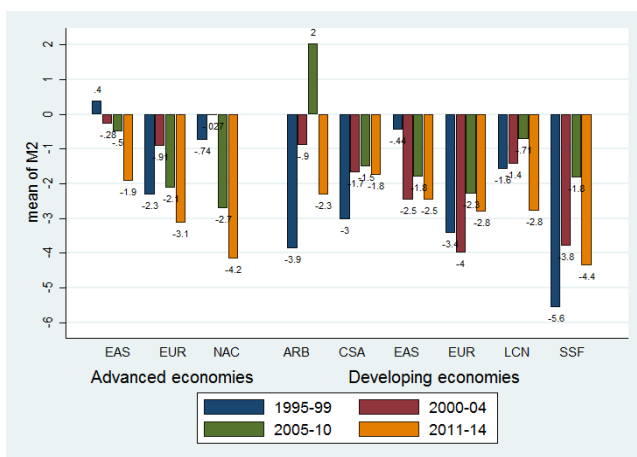
influenced by political conflicts, economic sanctions; persistent violence; commodity shortages; pervasive dollarisation; and lack of data, all contributed to the difficulties in designing and applying policies to bring high inflation down (Grigorian and Kock, 2014; Klein and Kyei, 2009). In Sudan, the main factors that contributed to inflation hikes were the monetisation of the fiscal deficit and the successive devaluations of the domestic currency, which in turn raise the costs of imports including imported capital and intermediate inputs. In addition to this, prices have soared dramatically since 2012, after South Sudan seceded, taking with it three-quarters of the country’s oil output. Oil revenues were Sudan’s main source of foreign currency needed to support the Sudanese pound and pay for imports (Suliman, 2012). Inflation rates are, therefore, the main factor contributing to macroeconomic instability in these countries, especially that most of these countries lacked the appropriate reforms to control it.

5.3.2 Indicators of Fiscal Policy

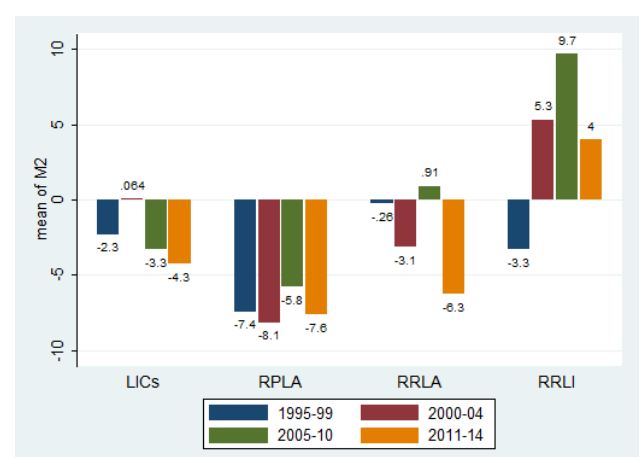
On the fiscal policy side, since Arab countries’ financial markets are still under-developed, the government in each country was the sole agent borrowing domestically and from the international bond markets, either to finance its expenditures or to repay its external debt (Neaime, 2005). Financing budget deficits through borrowing had a direct bearing on the region’s interest rates, inflation, and the rates of private and public consumption.

Figure 5.3.3: Budget balance (% of GDP)

A. Regions



B. Arab subgroups



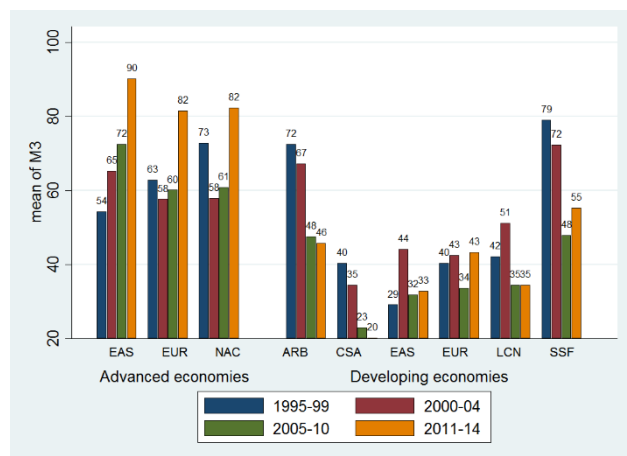
Source: Author’s estimates based on EIU (2015)

As shown in Figure 5.3.3B and 5.3.4B, deficits and public debt have both decreased gradually from 1995 until 2010. Arab economies overall had the lowest deficits among all world regions with an average of 1% of GDP, while the world average for the same period was 2%. In addition, RRLI group in the Arab world had succeeded in achieving a surplus in its budgets averaging

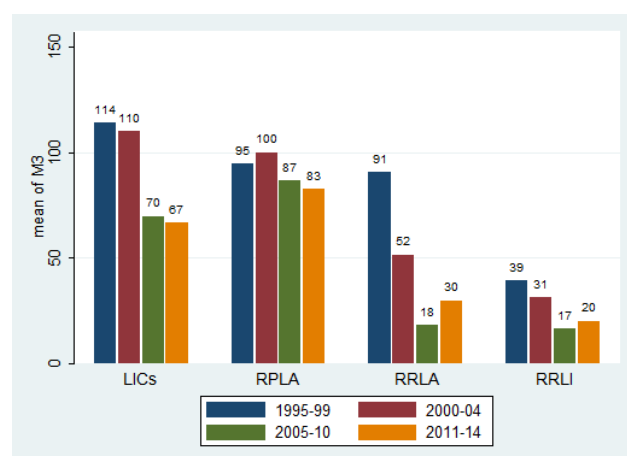
4.5%. This is the result of accumulative efforts of several governments implementing a series of reform programmes aiming at reducing the budget deficits and public debt.

Figure 5.3.4: Public debt (% of GDP)

A. Regions



B. Arab subgroups



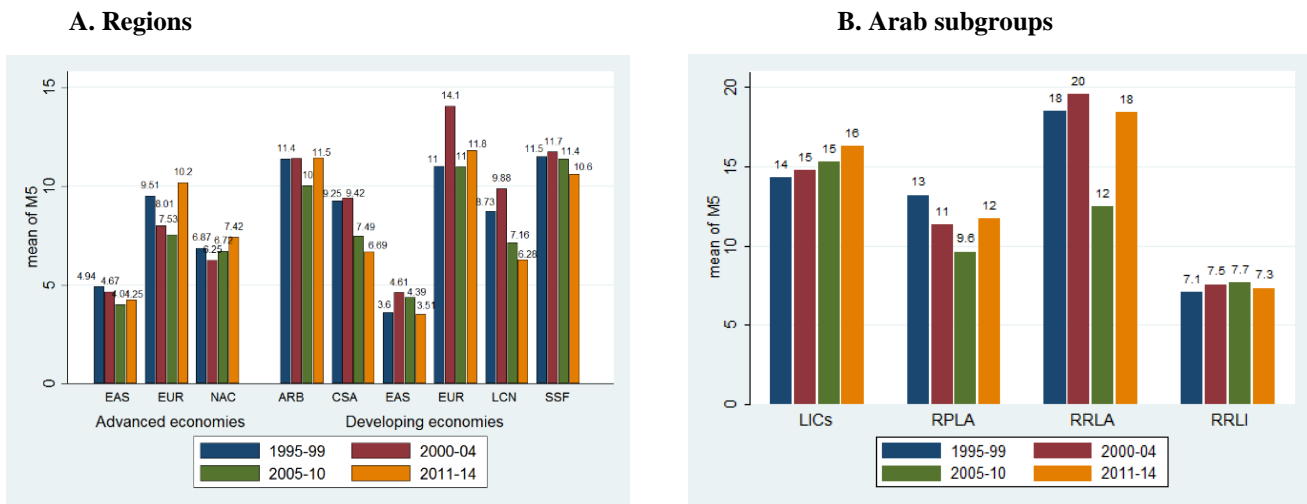
Source: Author's estimates based on EIU (2015)

However, after the political turmoil in 2011 caused by the revolutionary movements and the necessity to yield to some of the demands for social justice, governments could not avoid increasing subsidies on essential goods and in some cases also raising salaries (El Enbaby and Galal, 2015). This undoubtedly accelerated the increase in budget deficits. In addition, the instability has caused a noticeable fall in tourist activities and hence, a deterioration in foreign exchange receipts. For example, in Egypt, tourism was rapidly emerging as the leading industry until the onset of the Arab Spring. The direct contribution of tourism to the economy raised from \$6.6 billion in 2000 to as high as \$17.5 billion in 2010, however, this contribution dramatically fell in 2013 to \$ 14.3 billion (Mansfeld and Winckler, 2015). FDI also decreased as foreign investors waited for the political situation to stabilise as will be seen in the below section. All these factors together led to increasing the deficits and public debt burden. This situation also extended, to some extent, to the more stable countries in the GCC; the budget surplus deteriorated severely, affected by lower oil prices after 2012 (see Figure (5.3.3A) and (5.3.4A)).

The other component of fiscal policy is unemployment. According to Figure 5.3.5A, the highest unemployment rates in the world appeared in the Arab region, Eastern Europe transition economies, and Sub-Saharan Africa, with the same average of approximately 11.5%. However, the aggregate unemployment rates are more burgeoning in the Arab region than in other regions,

taking into consideration the Arab region's relative high endowment of natural resources, the size of the population, and the labour force. All Arab States, without exception, are facing high unemployment. This could be attributed to two factors: the shrinking prospects for the two main modes of employment creation that used to work in the past - labour migration and public-sector employment- and, in the same time a rapidly expanding labour force.

Figure 5.3.5: Recorded unemployment rates (%)



Source: Author's estimates based on EIU (2015)

Furthermore, the seriousness of the problem began to worsen with reduced public-sector revenues rendering the guaranteed employment in the public sector no longer possible. Lower oil prices, quickly rising domestic supplies of national labour, and competition from lower-cost labour elsewhere in the world, all worked to dampen the GCC demand for labour from the rest of the Arab countries (Bibi and Nabli, 2010). The unemployment rate among young people is much higher, hovering around 25%, while in other parts of the developing world, the corresponding rate ranges between 8.9% and 15.7% (Corm, 2012). The International Labour Organization (ILO) have observed that in 2012, the average unemployment rate in the Arab world (16%) was the highest in the world. Similarly, in 2010, the recorded rate was also one of the highest at the world level as reached 13.82 % or 18.1 % if the Gulf countries excluded, i.e. the equivalent of 18 million unemployed persons. (Arab Labour Organization, 2012).

According to Faria and McAdam (2015), youth unemployment is seen as central to explaining the protests and uprisings in the whole region. Arab countries are full of youth disappointed by lack of jobs, and they are unable to break into the political, social, or economic systems of their countries. According to Amin et al. (2012), it is no wonder that many young people are angry,

because there are no suitable opportunities for better life and even if they have jobs, working conditions are usually terrible: low salaries, insufficient social or healthcare protection, an absence of secure contracts, and ineffective trade unions to grant them a voice. Such an environment may have a significant adverse effect on economic growth, as available human resources are not being efficiently used to increase productive activities.

Appendix 5.4: External Stability indicators (E)

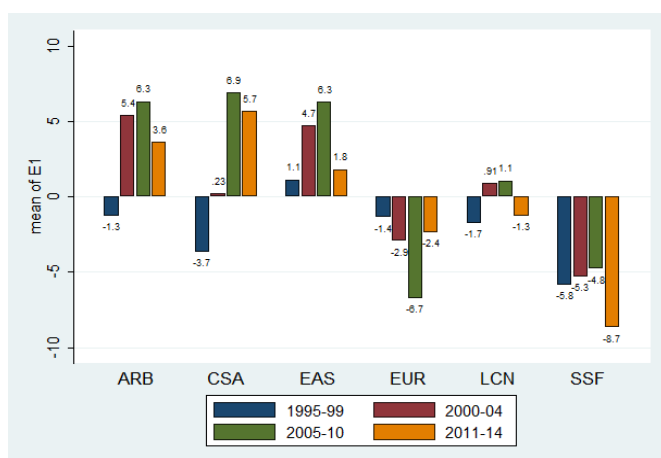
5.4.1 Current Account (CA) balance

The balance of the current account (CA) component of external stability reflects total domestic residents' transactions with foreigners in markets for goods and services. In addition, CA determines the evolution of a country's liabilities over time, compared to the rest of the world. Therefore, policymakers are attempting to explain CA movements, evaluate their sustainable (and/or excessive) levels, and seek to induce changes to the balance through policy measures. This is important because CA deficits may have implications for domestic investment and therefore, economic growth.

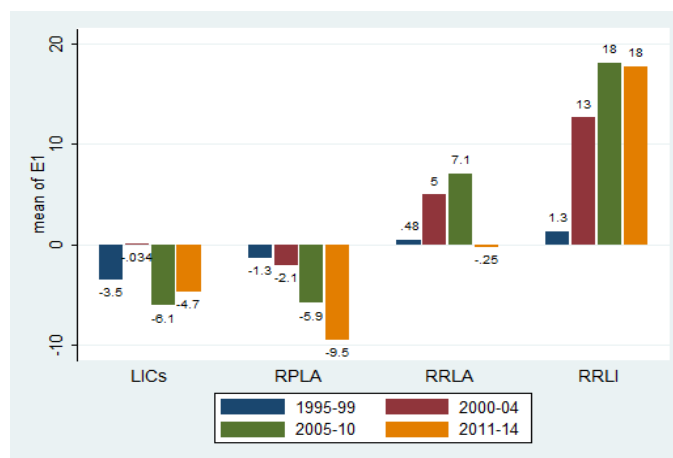
As shown in Figure 5.4.1A, three regions achieved a surplus in their balances. These are East Asia and the Arab region with an average of 3.7% of GDP, followed by Central Asia with 2.3%. Sub-Saharan Africa, Eastern Europe, and South America, however, had a CA deficit of -5.9%, -3.5% and -0.14%, respectively.

Figure 5.4.1: Current account balance/GDP

A. Region



B. Arab subgroups



Source: Author's estimates based on EIU (2015)

For Arab nations, the first period (1995-1999) witnessed increased volatility in external balances, as seen in figure (5.4.1B) with a deficit of 1.3% of GDP. The negative CA value for the Arab nations was influenced by military conflicts in the region, such as the second Gulf war and the long civil strife in Lebanon. However, debt restructuring in some countries and reduced interest payments on debt helped contain the current account deficit in countries such as Egypt and Tunisia (Saif, 2009).

Moreover, despite the increase in imports, the influential real growth of exports of goods and non-factor services, led to a rise in the Arab's CA from a deficit average in the 1990s to a surplus averaging at 5.4% of GDP in 2000 - 2004, and also a reflection of the significant rise in oil prices. ACs continued their outstanding progress in export growth during the period 2005-2010 by riding the wave of higher oil export values owing to and the rising demand for energy. The most prominent contributors to this improvement have thus been the Arab oil-exporting countries (in particular Kuwait, Libya and Saudi Arabia), with the external balance averaging at 21% of GDP in the 2001-2010 period (Bibi and Nabli, 2010). Therefore, these countries have established special funds intended to save much of the surpluses (e.g. Algeria, Kuwait, Oman and Qatar).

In contrast, the region witnessed a new drop-in exports growth since 2011, given lower levels of economic activity in the context of the Arab Spring, low oil prices, and slowing world growth especially for the RPLA and RRLA countries that went through unstable political situations. In the same period, the progress of the RRLI countries' rate had stopped due to low oil prices and lack of fiscal adjustment.

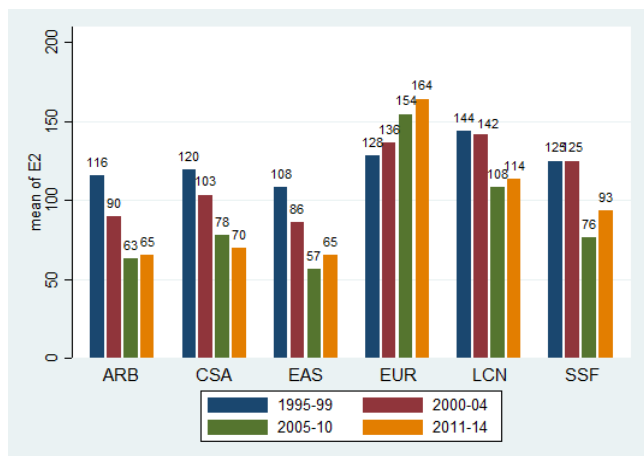
5.4.2 Debt Relief

The other component of external stability is total external debt stock measured as a ratio of exports, which is the proportion of total outstanding debt at the end of the year to the economy's exports of goods and services. The study has chosen this measurement rather than the debt-to-GDP ratio because it measures the sustainability of debt (Robb, 2003). For instance, if there is an increase in debt-to-exports rate over time, for a given interest rate, it is an indication that external debt is growing faster than the economy's foreign income, meaning that the country could have problems meeting its debt commitments in the future. Many developing countries have been accumulating external debt by taking advantage of the abundant availability of international loans resulting from the oil boom in the early 1970s (Effendi, 2001). The lack of domestic savings and high current account deficits are mainly the reasons why developing countries have been importing capital to expand national resources.

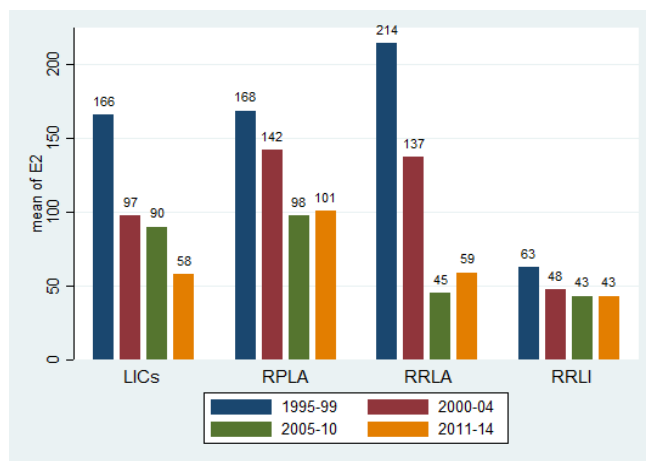
As shown in Figure 5.4.2A, all developing countries, except those in Eastern Europe, have experienced constant or declining external debts as a result of applying for debt restructuring programmes back in the late 1980s and the 1990s. The extraordinary debt-to-export ratios in Eastern Europe are most probably associated with the European sovereign debt crisis after the global financial crisis in 2008. It is also notable that there is a relationship between the previous

external debt crisis and the current ratio of debt, as in all Sub-Saharan Africa, Latin America, and former communist European states.

Figure 5.4.2: External debt-to-exports of Goods and services
A. Region



B. Arab subgroups



Source: Author's estimates based on EIU (2015)

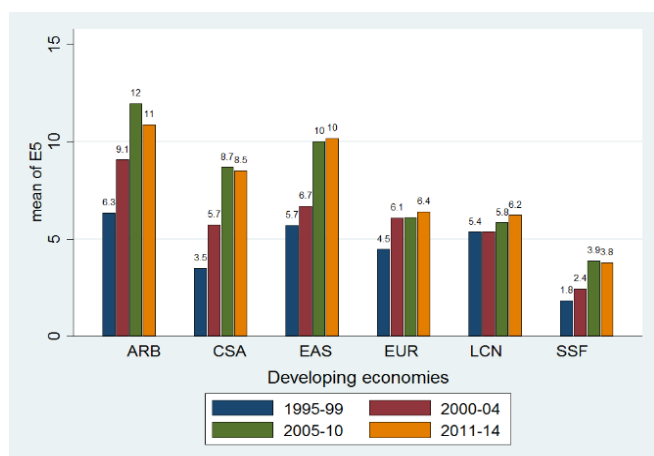
For the Arab region, as discussed in section 5.3.1 at the main text, some ACs have been suffering from large macroeconomic imbalances, and consistent current account and budget deficits, in addition to the recent political and military turmoil since 2011. This volatile environment has been associated with significant increases in internal and external government debts.

As presented in chart 5.4.1B, the debt ratios of all ACs were high in the first period (1995-99) during the regional war, especially in the coalition countries (Iraq, Saudi Arabia and Kuwait). Afterwards, the debt-to-export in the Gulf countries remained more or less stable. For the sub Arab groups LICs and RPLA, the ratio declined gradually. Developments in Egypt, Jordan, Tunisia and Morocco mainly accounted for this decline. For instance, in Egypt, the decline in the 1990s was mainly due to reductions in the stock of debt granted by creditors. Jordan undertook debt-reduction operations with commercial banks and executed rescheduling with, and was given debt relief by, some creditors. Morocco benefited from the cancellation of the stock of debt it owed to Saudi Arabia (OECD, 2008). This implies that debt may not be a problem in the Arab world and therefore, not an underpinning factor for the economic problems in the region.

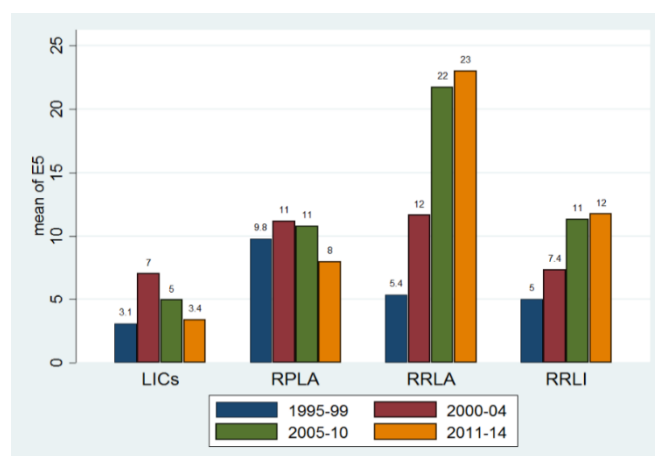
5.4.3 International reserves

The total foreign reserves component of external stability is measured by the number of months that this can cover imports. Countries maintain reserves to manage their exchange rate efficiently and to reduce adjustment costs associated with fluctuations in international payments (Elhiraika and Ndikumana, 2007). As presented in Figure 5.4.3A, the build-up of reserves in developing economies has accelerated over the years with the bulk of improvements occurring in oil-exporting countries. The Arab region has the highest level of reserves sufficient to cover ten months of imports, followed by central Asia with eight months, and Eastern Europe, East Asia and South America; in that order, with an average of approximately six months.

Figure 5.4.3: Total reserves in months of imports
A. Region



B. Arab subgroups



Regarding the Arab region, their reserves are mostly driven by current account balances (oil exports, labour remittances, and grants) instead of extent capital account balances (concessional debt and foreign direct investment). As a group, the Arab countries seem to have adequate reserves, with the situation noticeably improving in the two periods (2000-2004) and (2005-2010). Of course, the average for the ACs as presented in Figure 5.4.3A hides several variations among individual countries. Of particular interest is the low reserves to imports ratio in Sudan and Yemen (LICs) (Figure 5.4.3B) which led to their involvement in the Heavily Indebted Poor Country (HIPC) Initiative by the IMF⁶⁵. There is high variability for Egypt, Morocco, Syria and Tunisia (mainly RPLA), while oil-exporting countries (RRLA and RRLL)

⁶⁵ The Heavily Indebted Poor Countries (HIPC) are a group of 37 developing countries with high levels of poverty and debt overhang which are eligible for special assistance from the International Monetary Fund (IMF) and the World Bank (World Bank, 2015).

experienced a big surge in their foreign reserves due to high oil prices and improved oil production and exports.

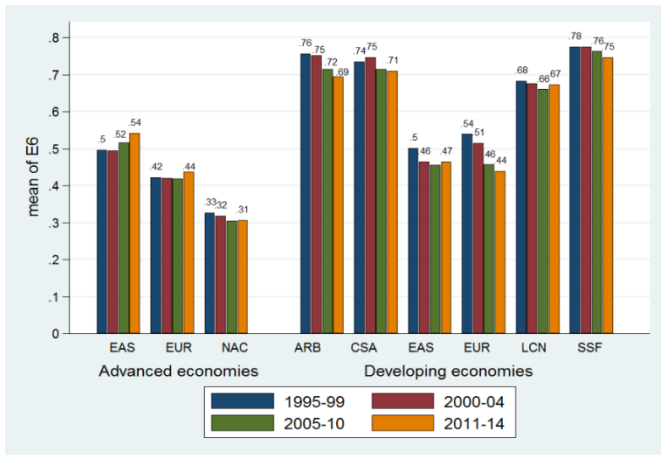
In contrast, after the 2011 Arab spring, ACs especially Egypt and Tunisia had a significant reduction in their reserves. For example, the pressures on Egypt's foreign reserves started in 2011 when tourism revenues dropped significantly as did remittances from Egyptian workers in the Gulf countries due to low oil prices and revenues, while revenues from the Suez Canal also decreased amid a slowdown in global economic trade. In order to maintain the exchange rate peg, and finance the current deficits, the central bank lost approximately US\$ 20 billion in foreign reserves (Neaime and Gaysset, 2017).

5.4.4 Export Diversification and Concentration

The final component of external stability is diversification, which is measured by the export diversification index and export concentration index. Historically, developing countries have depended heavily on a narrow range of traditional primary products; just exporting raw materials without processing them (IMF, 2014). As shown in Figure 5.4.4A, the diversification in export was minuscule for all developing countries except Eastern Europe and South East Asia, which have more advanced economies and some varieties in their production structure. On the other hand, the Arab region has a low degree of diversification and sophistication of exports in addition to a limited role of manufacturing in most ACs. Of the 22-member countries of the Arab League, 11 are oil exporters. This group accounts for nearly 55% of global oil reserves and 29% of natural gas reserves (De Melo et al., 2012). Therefore, the petrochemicals sector dominates these economies, where it contributes about 50% to GDP and 80% of government revenues (Elbadawi and Gelb, 2010).

ACs' production structures have undergone little diversification over the past 20 years. Contrary to world trends, the relative size of the manufacturing sector hardly grew in most ACs while the relative size of the service sector shrank (Figure 5.4.6). Agriculture contracted did not lead to vibrant and innovative manufacturing and service sectors, as it did in other regions. While Arab countries' difficulty in expanding manufacturing is well documented, the contraction of services as a share of GDP is particularly striking (De Melo et al., 2012).

Figure 5.4.4: Export Diversification index
A. Region



B. Arab subgroups

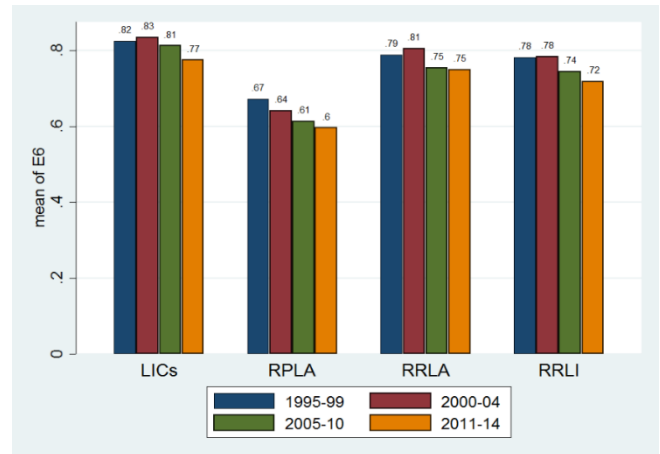
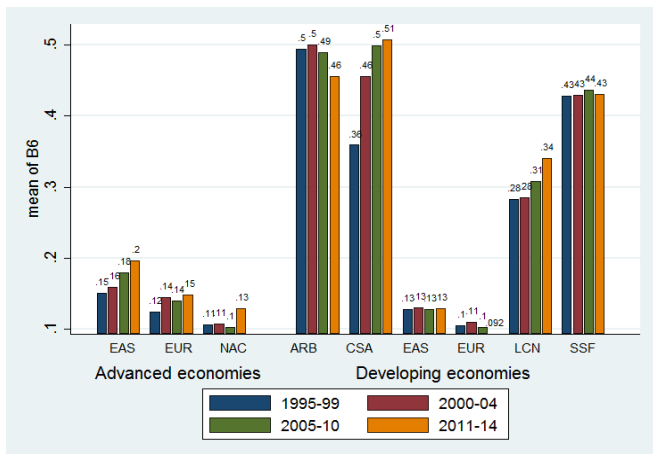
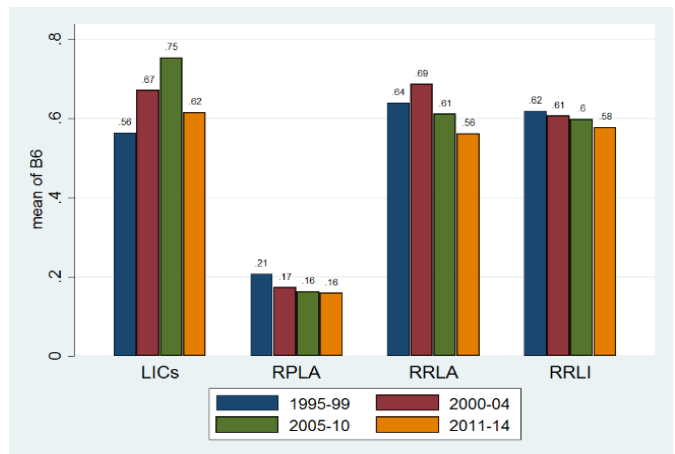


Figure 5.4.5: Export Concentration Index

A. Region



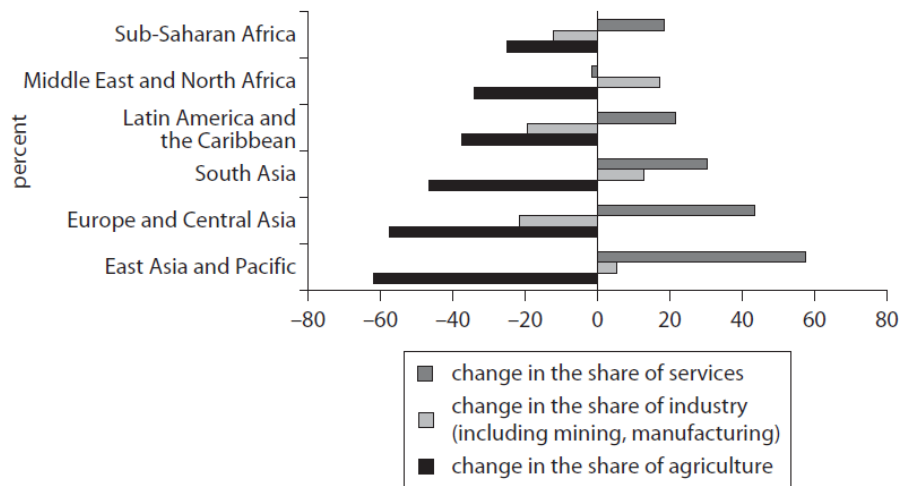
B. Arab subgroups



Source: Author's estimates based on United Nations Conference on Trade and Development (UNCTAD) database (2015)

Most GCC had applied development plans toward enhancing the human capital of nationals and developing new industries and services that can employ high-skilled labour. Nevertheless, to date, these diversification policies have yielded mixed results. The share of non-oil output in GDP has improved steadily but is strongly related to oil prices, and progress with export diversification; a key ingredient to sustainable growth, has been more limited (Callen et al., 2014). Export growth in RRLI was driven by exports of existing processed and industrial goods (mainly crude and refined oil). Product diversification (export of new products) occurred exclusively within the industrial sector.

Figure 5.4.6: Changes in the Composition of GDP, 1980 to 2010



Source: Based on De Melo et al. (2012).

Moreover, in the non-oil exporting ACs (LICs and RPLA), export growth was driven by existing primary and processed industrial goods as well as by consumer goods to existing markets, mostly in Europe. The correlation between economic growth and diversification has been strongly argued. As pointed out by McMillan and Rodrik (2011), growth needs both new activities and ongoing structural changes. ACs slow growth implies that the increase in both factors is limited. Asia’s high growth is both a cause and a consequence of its structural shift from agriculture (where productivity is low) to services and manufacturing (where productivity is higher).

Appendix 5.5: Business and Structural Reform (B)

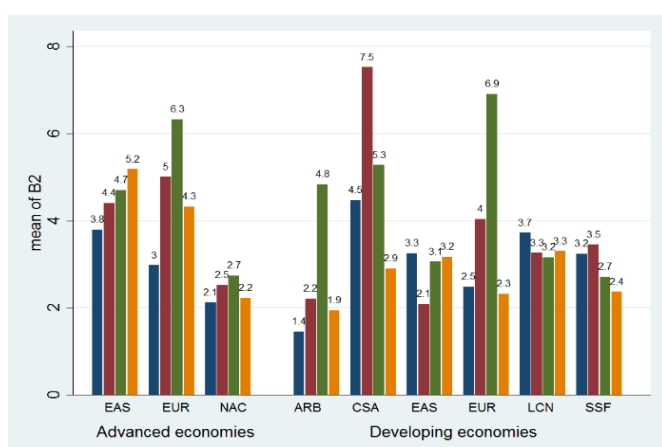
5.5.1 Foreign Direct Investment (FDI)

The foreign direct investment (FDI) component has been selected as it reflects the degree of financial sector liberalisation, and the willingness and confidence of foreign investors to engage in economic activities. Foreign firms are attracted to countries with high economic growth and per capita GDP rates, and previous FDI inflows, in addition to stability and credibility provided by governments as well as their transparency that enhance enforcement of property rights (Biglaiser and DeRouen, 2006).

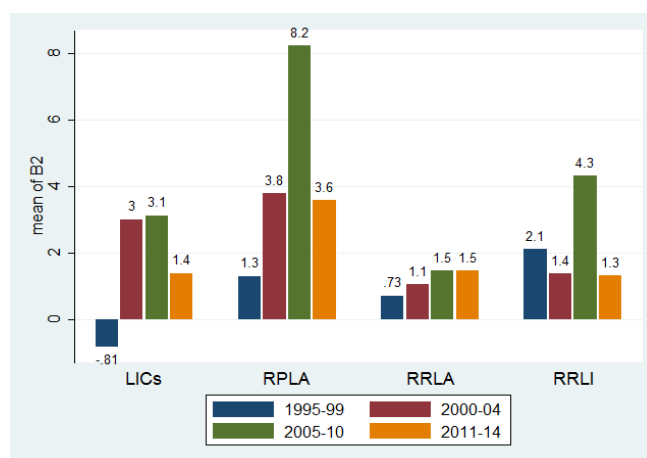
Over the whole study period, FDI flows around the world have dramatically increased and have become the most stable and most significant component of capital flows, especially for developing countries, as shown in Figure 5.5.1A. The average ratio of world FDI inflows to GDP was 5.7%, while it was 4.5% for developed countries and 3.3 % for developing ones. FDI inflows to emerging economies have increased substantially since the early 2000s. For instance, it increased in the Arab region from only 1.4% during the first period to reach its highest level of 5% in the third period. Central Asia and Eastern Europe saw their rates increased sharply from 3% to 7% during the same periods. Regarding North America, although, the United States and Canada are considered as the leading host countries, and absolute levels of FDI were very high (Kamara, 2014), the relatively low ratio is due to the comparatively large size of their domestic economies, as measured by GDP.

Figure 5.5.1: Inward foreign direct investment/GDP

A. Region



B. Arab subgroups



Source: Author's estimates based on EIU (2015)

The Arab region's performance, however, remains lacklustre in attracting foreign investment compared to other developing countries. The trend of flows was unstable and has fluctuated over time (Figure 5.5.1B). Certainly, the Arab trends were related to several factors. First, the FDI flow was mainly high in Arab reformers (RPLA); these countries have taken a wide range of measures to encourage the role and participation of the private sector since the 1990s. These measures and policies include active programmes of privatisation and trade liberalisation. Second, as reported by the World Bank (2010a), the clear increase in global FDI flows before the financial crises mostly reflect an increase in cheap debt financing, where international interest rates remained low over a sustained period resulting in abundant global liquidity and low borrowing costs. Third, booming oil and commodity prices drove FDI into extractive sectors, particularly in RRLA and RRLI countries. Fourthly, governance variables are also among the key determinants of FDI inflows in the Arab region. According to Freedom House (2015), ACs have the worst governance quality and corruption levels amongst all world regions, which directly undermines investment.

Fifthly, Diversification is also another factor, based on Dabla-Norris (2016) the level of diversification of the economy plays an essential role in exploiting FDI benefits. The fact that fuel exports as a percentage of merchandise exports remaining at around 80% on average for ACs from 1995 to 2014, reflects the limited diversification of AC's economies which might help explain the limited benefits of FDI in ACs. Lastly, the 2011 political uncertainty led to divestments in the region; in particular, inflows to Egypt, Tunisia and Libya, which had been major recipients of FDI, came to a halt owing to their protracted political instability.

5.5.2 Financial Sector Liberalisation

In general, the primary role of the financial sector in any economy is the mobilisation of savings and the deployment of resources, among various competing demands, through the process of financial intermediation (Sarkar, 2009). The purpose of any financial development is to strengthen the stability of the financial sector and to promote its development, with the final goal of sustaining the recent economic growth. Several indicators of financial development have been introduced in the literature. According to Colombage (2009); Khan and Senhadji (2003), domestic credit to the private sector by banks as a per cent of GDP has been favoured as an alternative measure of financial intermediation. It is assumed that credit given to the private sector creates and increases investment and productivity to a much higher level than credits do to the public sector. It is also held that loans to the private sector are given more

stringently and that the improved quality of investment emanating from financial intermediaries' evaluation of project viability is more notable for private sector credits.

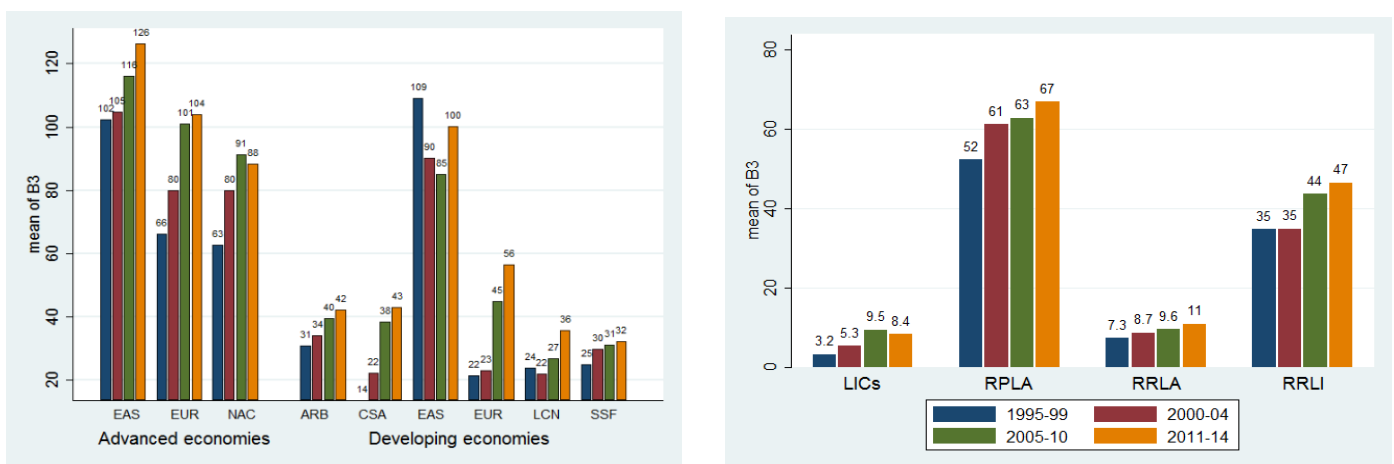
Although many developing countries had implemented financial reform programmes that aimed to liberalise the financial sector and increase the volume of credits granted to the private sector, the overall gap between developed and developing economies is almost unpleasant. While the average credits to the private sector in developed countries were more than 92% of GDP, it did not exceed 37% in developing countries (Figure 5.5.2A).

The second remarkable observation in Figure 5.5.2A was the differences among regions. The first case was in the Southeast Asian area; it was noted that countries, whether developed or developing, enjoy the highest worldwide ratios of credits provided to the private sector, with an average ratio of 110% for developed countries, and a slightly lower ratio of 95% for developing countries. The second case was on the European continent. Although Central and Eastern European states have made tremendous progress in developing their financial sector to re-integrate into the world economy (Petkovski and Kjosevski, 2014), the development seems too slow to catch-up with advanced states in Europe - Eastern European countries have about half the ratio of Western European economies. In fact, the convergence between them in terms of financial development is likely to take longer than previously thought.

Figure 5.5.2: Domestic credit to private sector by banks growth (% of GDP)

A. Region

B. Arab subgroups



Source: Author's estimates based on EIU (2015)

Concerning the Arab region, it can be classified as a bank-based economy since banks are the dominant financial institutions (Kar et al., 2011). Over the last two decades, ACs like many other developing countries, have experienced a wave of financial sector liberalisation (Figure 5.5.2B). In addition, as mentioned earlier, the Arab reformers (RPLA) have gradually

liberalised their financial system under their structural reform programmes by: improving the attractiveness of domestic currency assets through interest and credit liberalization; focusing on increasing private involvement in commercial banking and securities to improve the competitiveness of the financial sector; introducing new banking legislation to increase the independence of the central banks and to add prudential regulations in line with international standards; and updating stock market law and activities (Ben Naceur et al., 2008).

The RRLI countries also witnessed a gradual improvement in the performance of their financial markets despite the financial turmoil in recent years. They have experienced rapid growth of private sector credit. Higher fuel prices, expanded government spending and non-oil GDP growth encouraged business confidence and private sector investment, leading to an increase in the demand for credit. However, beyond providing basic banking services, the financial systems remain relatively underdeveloped (World Bank, 2006). The absence of broad domestic capital markets and tied relations with governments are the main barriers to further development. Moreover, RRLI countries need a strategy to adapt to an environment of lower oil prices and tighter liquidity to ensure the sustained availability of credit to support the private sector.

Appendix 5.6: Human Capital Reform indicators (H)

5.6.1 Health Sector Reform

Health is necessary for economic development and is one of the key determinants of economic performance both at the micro and macro levels. In developing countries until recently, it was widely believed that economic growth was an essential prerequisite for enhancing a population's health status and health was usually classified as a non-productive sector. But recent evidence has pointed out that health is not just an outcome of development, rather, it is also a primary input into the social and economic development, and poverty reduction (Alleyne, 2002).

Health is not only the absence of illnesses; it is also the capability of people to develop to their full potential during their lifetime. Good health reduces production losses due to worker illness, it increases the productivity of the workforce through better nutrition, and it lowers absence rates and improves learning among schoolchildren. According to the World Health Organization (WHO), 50% of economic growth differentials between developed and developing nations is attributable to ill health and low life expectancy (Oni, 2014).

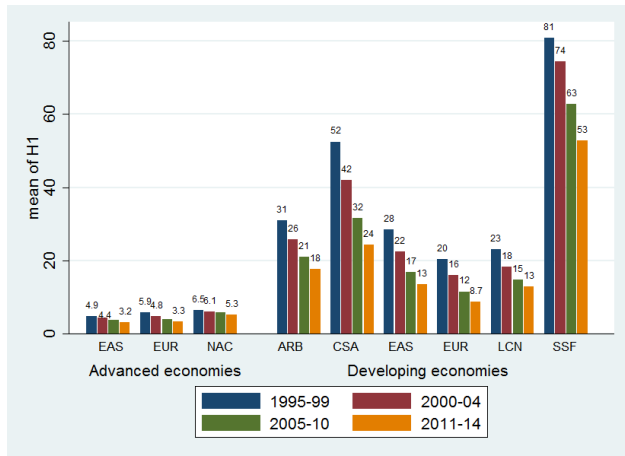
The health indicators examined in this section include infant mortality rates, as well as overall life expectancy at birth, and health expenditures. Firstly, global infant mortality rates have decreased from an estimated rate of 62 deaths per 1000 live births in 1995 to 15 deaths per 1000 live births in 2014 (Figure 5.6.1A). Annual infant deaths had declined from 7 million in 1995 to 4.2 million in 2014. There has been significant progress in falling infant mortality in all regions. However, the prevalence is still very high, especially in Sub-Saharan Africa and Central Asia regions, with an average of 68 and 40 deaths, respectively. This number is strongly related to countries with a high prevalence of HIV or those affected by conflicts (Anyanwu and Erhijakpor, 2009).

Secondly, countries with the highest levels of health expenditures as a percentage of GDP are mainly those with advanced economies with an average of 6.5%, while the ratio was less than half of this in developing countries. Despite significant cross-region heterogeneity in health expenditures, all regions spent less than 10% of GDP on healthcare. Most countries spend between 2-8% of GDP (Figure 5.6.2A). The association between per capita health expenditure and income are outstanding: countries with a higher per capita income are much more likely to employ a more significant share of their income on healthcare. Also, spending on healthcare

almost invariably grows faster than GDP. The relation between health spending and increasing life expectancy also holds for wealthy countries in Europe, Asia, and North America.

Figure 5.6.1: Infant Mortality rate, (per 1,000 live births)

A. Region



B. Arab subgroups

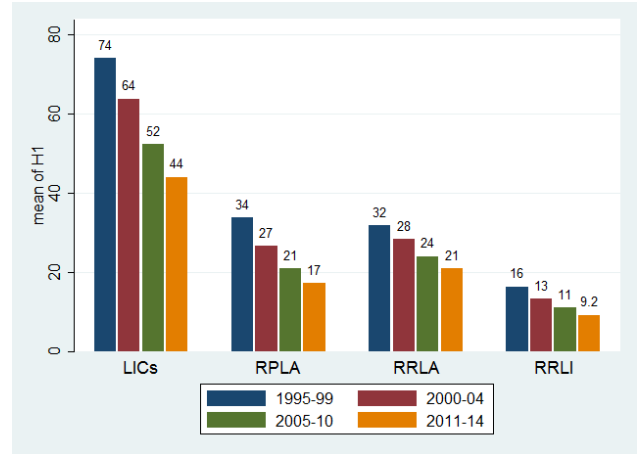
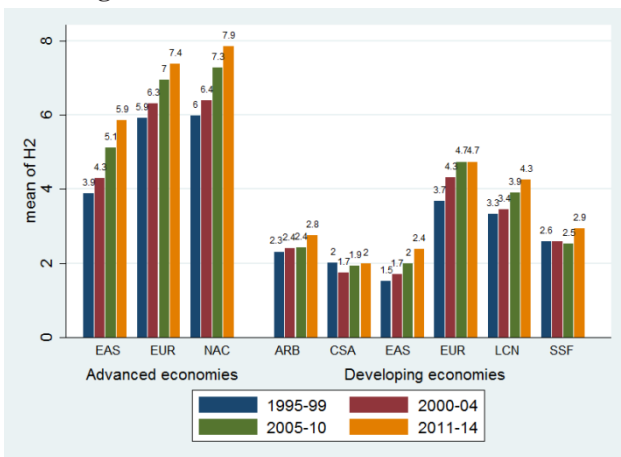


Figure 5.6.2: Health expenditure, public (% of GDP)

A. Region



B. Arab subgroups

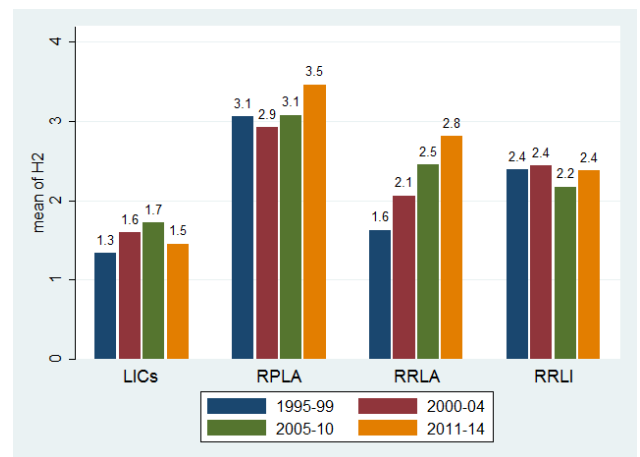
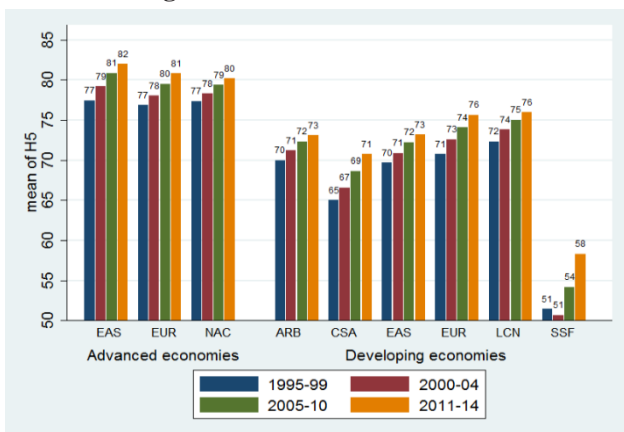
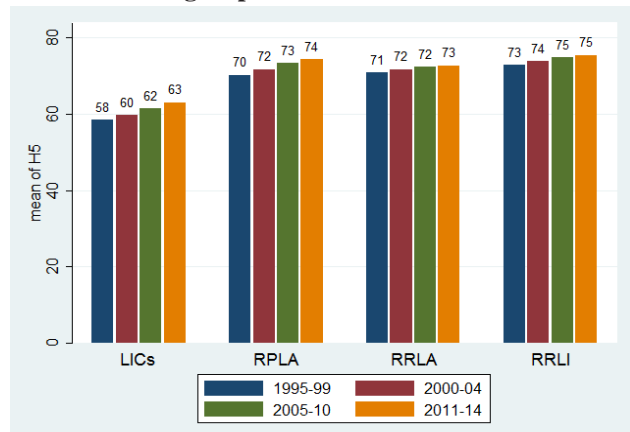


Figure 5.6.3 Life expectancy at birth, total (years)

A. Region



B. Arab subgroups



Source: Author's estimates based on (WHO.2015)

Lastly, life expectancy at birth reflects the overall mortality level of a population. It summarises the mortality pattern that prevails across all age groups in a given year – children, adolescents, adults and the elderly. Global life expectancy at birth average was 72 years between 1995 and 2014. It ranged from only 53 years in SSF to 79 years in the Western European Region; while it reached 67 years as the average for developing countries. Global average life expectancy increased by five years over the study period. The most considerable increase was in the SSF Region, where life expectancy increased by seven years to 59 years, driven mainly by improvements in child survival, and expanded access to antiretroviral treatment for HIV (Anyanwu and Erhijakpor, 2009).

Moving to the health status in the Arab world, in particular, indeed, the ACs in the last two decades have benefited from the surge in oil price, and so, have more opportunity to achieve a better quality of life through increased expenditures on health care goods and services. According to the study analysis, Arab health indicators have sharply improved since 1995. However, the 17 countries in the Arab world are still diverse in terms of health outcomes, ranging from the oil-rich states of the Gulf with long-life expectancy and low maternal mortality to poor countries with poor health indicators, such as Yemen and Sudan.

The Arab region has life expectancy and infant mortality indicators better than the global averages. Life expectancy reached 73 years in 2014 from 69 years in 1995. The reduction in infant mortality rates also has improved pointedly from more than 30 deaths per 1000 live births to about half of this rate during the same period. These improvements have in some cases been attributed to government investment in social protection, and high levels of public sector employment, especially in countries of the Arab Gulf. However, the indicators record broad health inequalities that prevail within all ACs regardless of their economic status. For instance, the risk for infant mortality in the wealthiest countries (RRLI) was less than doubled for most middle-income (RPLA) and lower than fivefold for low-income countries (LICs).

Concerning health expenditures, this is relatively low among ACs compared with several other countries. For instance, the average health expenditures in Europe and North America was approximately 7% of GDP, and about 4% in Latin America, while in the Arab region it was less than 2.5%, with the same ratio in oil-exporting countries. On the other hand, most Arab countries have increased expenditures on healthcare infrastructure, such as building hospitals, to meet the increasing growth of the population but without proper improvements to the

investment mechanism of the health sector, which limited the participation of the private sector in the healthcare market (Batniji et al., 2014).

5.6.2 Education Sector Reform

Education is considered an influential tool in reducing poverty, empowering people, increasing private earnings, promoting a healthy environment and creating a competitive economy. It plays a crucial role in shaping the way in which future generations learn to cope with the complexities of economic growth (Afzal et al., 2010). Early education lays the ground for the success or otherwise of future learning. Nevertheless, one in four children under the age of five in the world suffers from malnutrition, which in turn decreases their chances of a good education (FAO, 2013).

Therefore, in 2000 the international community adopted the “Education for All” (EFA) Global Action Plan (UNESCO, 2013) with the objective of achieving that target by 2015, this coincided with the launch of the Millennium Development Goals (MDGs) in the same year. Although the number of primary schools aged children not attending school declined between 1994 and 2014 from 108 million to 57 million, considered to be a huge step forward, the pace of progress has become extremely slow especially after 2008. According to the EFA Report (2015), the annual deficit in funding to achieve good quality primary education for all by 2014 has reached US\$ 26 billion.

Across regions, the most significant increases in primary school adjusted net enrolment ratio was observed in Sub-Saharan Africa (from 59% in 1996 to 79% in 2013), South, and Central Asia (from 78% to 94%). Only in North America and Western Europe, although still very high, did the ratio decline (from 98% to 96%). This is due to the United States, where the population of home-schooled children doubled from 1999 to 2007 (Graves et al., 2014). According to the Global Monitoring Report (2015), the world's governments expenditure on education was 5.1% of gross national income (GNI) on average. In North America and Western Europe, that figure is 6%. However, some states' investment in education is even more than 8% of GNI; while the average of developing countries achieves just 3%.

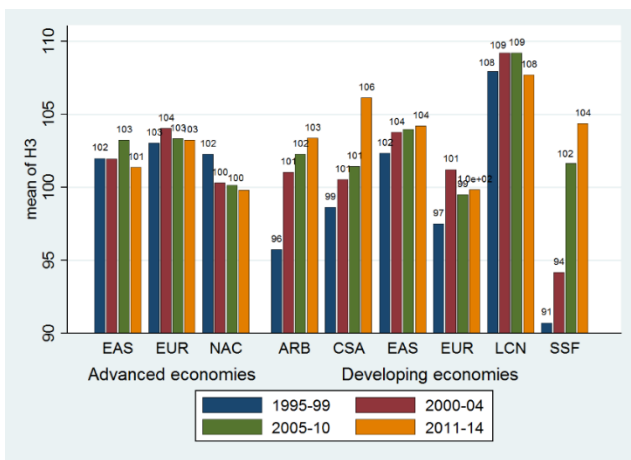
Across the Arab States as a whole, there has been significant progress in expanding the enrolment rate in primary education, it increased by 10% across the region between 1995 and 2014, from 79% to 89%. This is a significant achievement in the light of population growth of

34.5% across the region and means that 7.7 million more children were being provided with primary education.

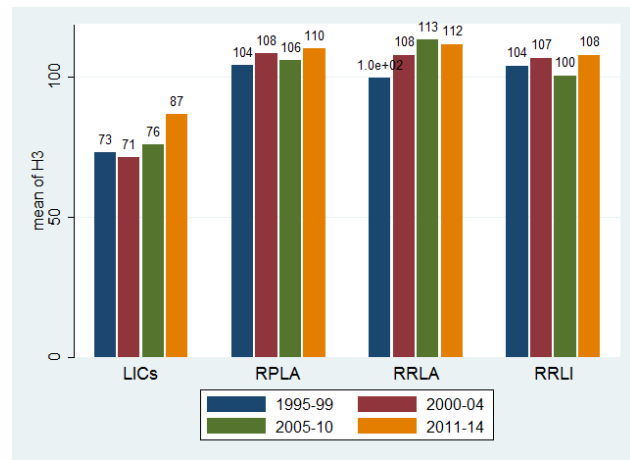
However, ACs had the lowest adult literacy rate in the world; about 70% of the Arab population, which is lower than the world average (84%) as well as that relevant to the developing countries (79%) (Touati, 2014). Moreover, the number of out-of-school children is falling in the Arab region, albeit slowly. From over 6 million children in 2000 to 4.8 million in 2013, of whom 60% are female (UNESCO, 2015).

Figure 5.6.4: School enrolment, primary (% gross)

A. Region



B. Arab subgroups



Source: Author's estimates based on: (UNESCO, 2015)

5.6.3 Research and Innovation

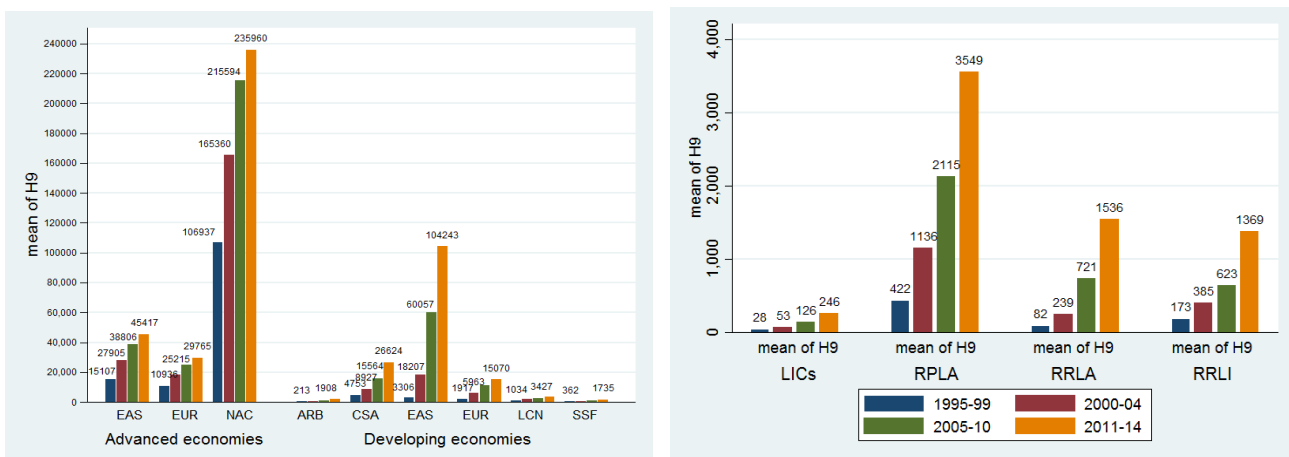
Across the world, the quality of human capital has been adjudged to be a crucial determinant of innovation. In turn, innovations have been playing a central role in economies. Particularly R&D expenditures, patents, licenses and trademarks which have become increasingly more important for economies (Romer, 1990a; Tebaldi and Elmslie, 2013). Industrialised countries, which are at the frontier of technological advancement and innovation, are distinguished by a highly skilled labour force, which accelerates their production and innovation processes. Contrary, countries with low human development indices generally lag behind in development and capacity to innovate due to social and physical capital deficits. However, theoretical and empirical evidence posits that latecomer countries have a greater opportunity of achieving higher rates of innovation growth as a result of lower effective costs of education, which enable them to catch up quickly (Ang et al., 2008).

According to the Industrial Research Institute (IRI) report in 2012, the world R&D expenditure is highly concentrated among a small number of OECD countries. In other words, 70% of global R&D expenditure was accounted for by the USA; 28% by other market economies; and only 2% by ‘developing’ countries in Asia, Africa, and Latin America. Annerstedt (1988) considered that the concentration of R&D resources in limited nations had been a feature of global inequality. The global expenditure on R&D activities has seen a continuous increase since the 1970s - more than tenfold from about US\$100 billion in 1973 to nearly US\$1,138 billion in 2010 (Arond and Bell, 2010). However, these numbers have not quite kept up with the general growth of the world economy as measured in GDP. This is reflected in the estimates for global R&D intensity: falling from 2.1% to a more or less stable level of about 1.7 % during the same period.

Figure 5.6.5 Scientific and technical journal articles

A. Region

B. Arab subgroups



Source: Author’s estimates based on the National Science Foundation (2015).

Regarding innovation and research in the Arab region, the publication of scientific and technical journal articles by authors residing in ACs has increased in volume over the past decade from 213 articles in 1995 to around 2000 articles in 2014. However, the level is still low compared with economically advanced economies (North America accounted for 235 thousand articles), East Asia 45 thousand articles, and with certain rapidly developing countries, such as China (26 thousand articles). The sub Arab group (RPLA), in particular, Egypt, had the highest level of publication with 2,500 articles, followed by oil-exporting countries in RRLI and RRLA by an average of 600 articles over 1995 to 2014 (Figure 5. 6.5B).

However, the scientific potential of ACs is not negligible. The proportion of science graduates among total tertiary graduates in the ACs does not deviate greatly from the ratio in developed countries, though rates of enrolment in tertiary education are much lower (25% versus 50% or more) (Utz and Aubert, 2013). But when one examines the number of researchers in R&D per million inhabitants, the gap increases, with high-income countries having roughly six times the number of R&D researchers per million inhabitants as the ACs. Furthermore, the level of R&D resources per capita is low, even when compared with countries at a similar level of income. This is a factor in the low scientific output of the ACs. In addition, the brain drain, which connotes the movement of intelligent minds and highly skilled professionals from developing to advanced countries, also contributes to AC's human capital deficits (Corm, 2012).

Appendix 5.7: Physical Infrastructure Indicators (P)

5.7.1 Basic Infrastructure Facilities (drinking-water, sanitation, electricity)

Firstly, the percentage of the world's population with "improved" drinking-water sources increased from 77% to 90% between 1995 and 2014 (Figure 5.7.1A). According to WHO (2014), this rate of improvement is sufficient to achieve the relevant MDGs' target globally. However, in SSA, the percentage remained very low as it increased from 60% in 1995 to only 73% in 2014, which means that more than one-quarter of the population remains unserved. Furthermore, among all developing regions, the situation in the Arab region appears to have stalled during the whole period, while the percentage in the region was below the global average and still need further progress. Despite the overall dramatic progress, wide disparities exist among different regions, urban and rural areas, and different socioeconomic classes – particularly between the rich and the poor.

With regards to basic sanitation, although, there has been a gradual increase in access to improved sanitation over the study period, in 2014, about one-fifth of the world's population were without "improved" sanitation facilities, resulting in high levels of environmental contamination and exposure to the risks of infections (Figure 5.7.2A). Undoubtedly, this rate of progress is not acceptable at least for world human dignity. The situation was most difficult in the Sub-Sahara African region, where the percentage of the population with improved sanitation facilities increased very slowly: from 33% in 1995 to 38% in 2014. The implication is that in developing nations, the annual rate of increase needs to double in order to improve its situations, and concerted efforts are also required to narrow the gap in coverage between urban and rural areas (WHO, 2015).

Thirdly, the percentage of the global population with access to electricity as presented in Figure 5.7.3A indicates an increase from 76% (3.9 billion people) in 1995 to approximately 89% (6 billion people) in 2014 (Ghosh Banerjee and Portale, 2014). Central Asia and Southeast Asia over the two decades witnessed dramatic progress, registering increases of 10% and 13%, respectively. Sub-Saharan Africa Lagged far behind, with an increase from 35% to 49% during the same period.

Figure 5.6.1: Improved water source (% of the population with access)

A. Region

B. Arab subgroups

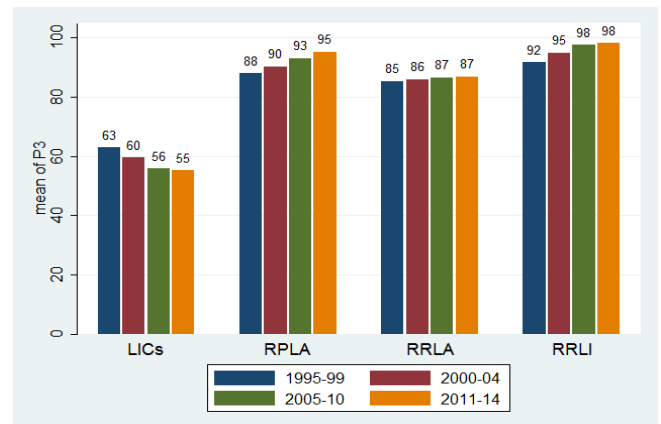
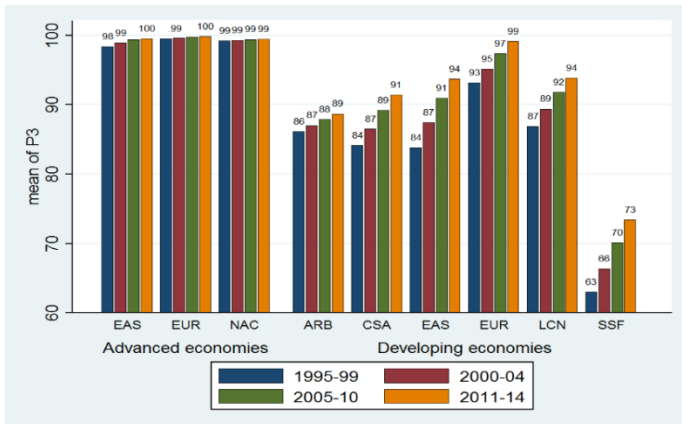


Figure 5.6.2: Improved sanitation (% of the population with access)

A. Region

B. Arab subgroups

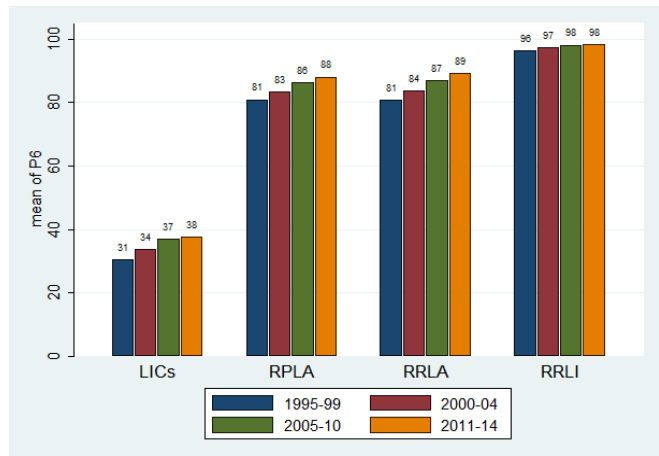
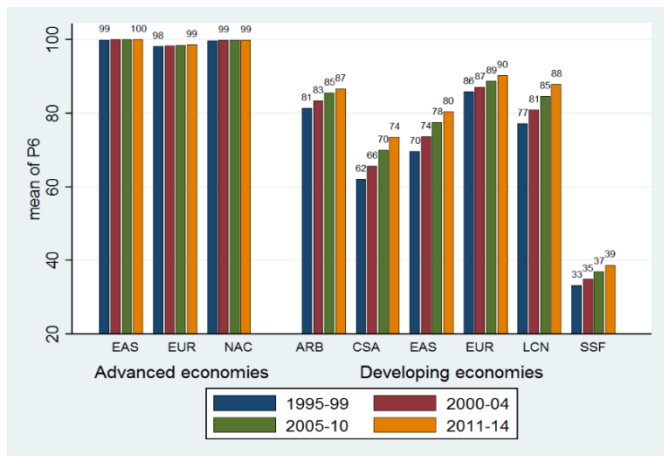
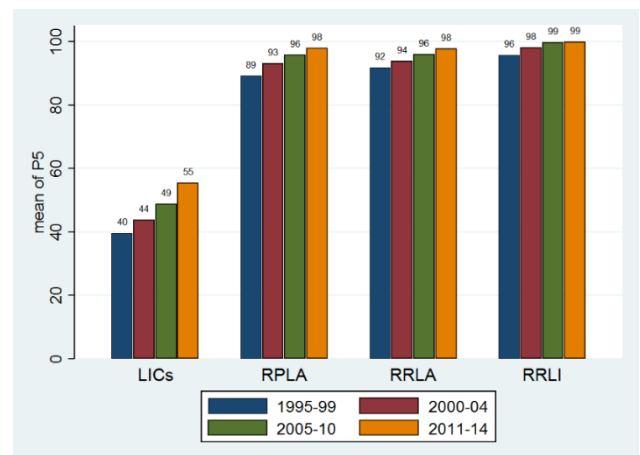
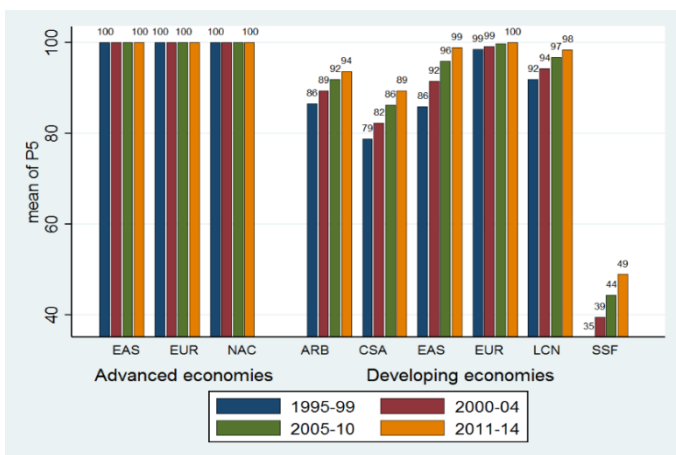


Figure 5.6.3: Access to electricity (% of the population with access)

A. Region

B. Arab subgroups



Source: Author's estimates based on International Telecommunication Union, WHO/UNICEF Joint Monitoring Programme (JMP) (2015).

Many countries in the Arab world have completed major investments in water storage infrastructure and have invested heavily in expanding irrigation systems. Out of a total Arab population estimated at 380 million in 2014, approximately 15% (nearly 58 million people) still did not have access to a healthy water source, 18% (almost 69 million people) did not have access to an improved sanitation facility. Only 10% did not have electricity access; however, service in many areas is often interrupted (Figures 5.7.1B, 5.7.2B, 5.7.3B).

ACs rely on both conventional water resources (surface water and groundwater) and nonconventional (desalinated water and treated wastewater). All ACs are using more treated wastewater, and desalinated water is a rising share of water budgets in GCC countries. However, about half of the Arab population currently lives under extreme water scarcity (less than 500 m³ per capita annually), and 18 of the 22 Arab countries fall below the water poverty line of 1000 m³ per capita per year (UNDP, 2013). At the national level, there was marked progress on the infrastructure of the RPLA and RRLA sub-regions. For Arab Gulf countries (RRLI), the years of oil boom made it possible to invest significantly in human capital. By 2014, about 98% of the population had access to electricity and improved sanitation facilities, and about 93% of households had access to improved drinking water.

War and violent conflict have caused widespread damage to basic infrastructure in various ACs, leading to the breakdown of water, transport and sanitation systems, and the destruction of public health facilities. The LICs, in particular, seems to be off track, due to the political instability and escalating hostilities which have brought Yemen and Sudan to the verge of collapse and resulted in one of the largest humanitarian crises in the world. More than two-thirds of the people in these countries struggle with access to sufficient food and lack access to electricity, safe water or adequate sanitation. In 2014, 60% of the people without access to drinking water in the Arab region were located in LICs compared to 45% in 1995. Similarly, more than 71% (47 million) of the 69 million people without access to improved sanitation resided in the LICs (UNDP, 2016).

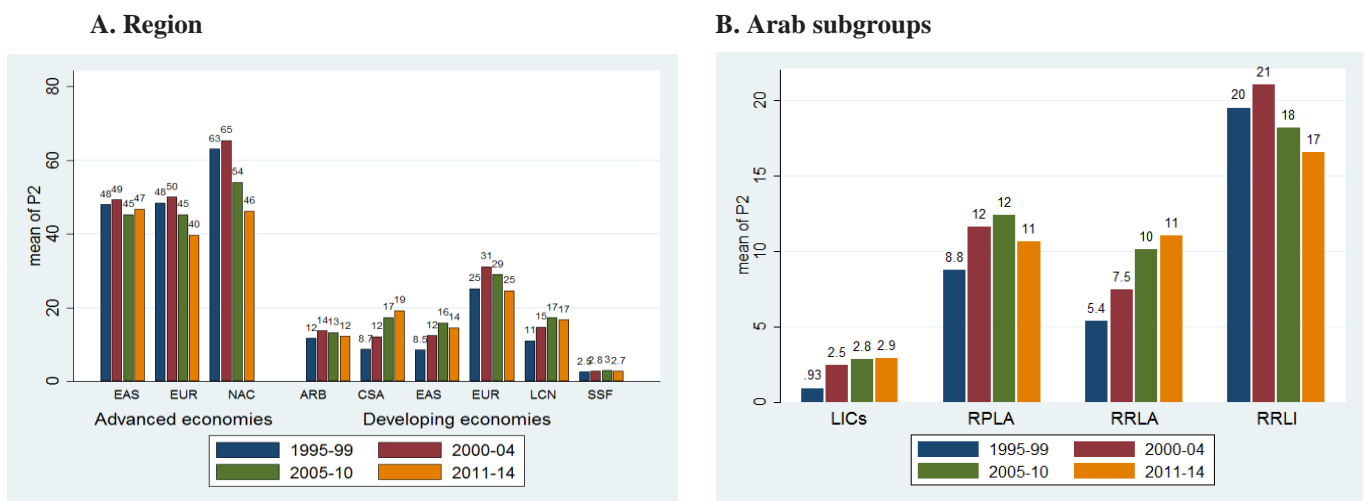
5.7.2 Information and Communication Technology (ICT)

Regarding physical infrastructure related to the ICT sector, globally fixed telephone subscriptions have slightly fallen, while mobile and (to a lesser extent) internet usage have expanded rapidly in many countries and regions. Simultaneously, there is a widening gap between high-income and low-income countries in the area of broadband connectivity. For instance, during the study period, there were, on average, 24 fixed telecommunications

subscriptions per 100 inhabitants in the world. In developed countries, the teledensity was 47 while in developing countries, it was 13 and only 3 in SSA (Figure 5.6.4). Slow and negative growth in fixed-line subscriptions reflects notable developments in both Internet Protocol (VoIP) and mobile telephony.

In advanced economies, existing fixed telecommunications infrastructure is increasingly leveraged for the introduction of “triple play” services (telephone, internet and television) over an Internet Protocol-based platform. In contrast, the low diffusion of fixed telecommunications infrastructure in many developing countries will seriously delay the transition to these next-generation networks (NGNs). For example, in 2014, average fixed broadband penetration was about 28 subscriptions per 100 people in developed economies, 6 in developing countries and only 0.2 in low-income countries (LICs). In the case of mobile usage, the gap is similarly broad. The average number of subscriptions in 2013 was about 67 per 100 people in developed countries, 14 in developing countries, and below 2 in the LICs (UNCTAD, 2013).

Figure 5.6.4: Fixed telephone subscriptions (per 100 people)



Source: Author’s estimates based on *The International Telecommunication Union, World Telecommunication*

The Arab region is a rapidly developing region regarding ICT. It is characterised mainly by strong growth in the area of mobile telephony (UNCTAD, 2009). The Arab world had increased the number of mobile-cellular subscriptions to reach close to 400 million by the end of 2014, from 126 million in 2006. This translates into a penetration rate of 110%, which puts the region not only ahead of the world average (96%) but also well ahead of Asia and the Pacific (89%) and Africa (69%), but they lag behind the Americas and Europe, where

penetration levels exceeded 130% (ITU, 2012). However, fixed-telephone and fixed (wired)-broadband penetration rates in the region remain relatively low.

The availability of fixed-telephone subscriptions for every 100 inhabitants in ACs, peaked at around 12 in 2014 and has always been relatively limited. Except for SSF (only 3), all other developing regions have higher rates than the Arab States, which lag behind both, the global, as well as the developing country average of 24% and 14%, respectively.

While mobile-cellular telephony has been able to replace the fixed-telephone network regarding providing basic voice services, the insufficient availability of a fixed-line telephone network has affected the uptake of fixed-broadband internet services, in particular via Digital Subscribers Lines (DSL), the world's most popular fixed-broadband technology. In 2014, the fixed-broadband penetration in ACs stood at 3%, compared to 8% in Asia, and 17% and 28% in the Americas and Europe, respectively. Africa's fixed-broadband penetration levels, at 0.4 %, remain well behind all the other regions (ITU, 2012).

Appendices of chapter 6

Appendix 6.1: Institutional quality indicators

Variable	Developing economies					Advanced economies				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
G	1040	-1.29	1.47	-5.04	2.54	520	2.58	1.15	-4.29	4.31
VA	1040	-0.48	0.76	-2.04	1.24	520	1.18	0.43	-1.73	1.83
PS	1040	-0.48	0.86	-3.18	1.21	520	0.79	0.62	-2.36	1.67
GE	1040	-0.22	0.63	-1.95	1.48	520	1.46	0.55	-1.61	2.43
RQ	1040	-0.24	0.74	-2.21	1.64	520	1.32	0.47	-1.39	2.25
RL	1040	-0.36	0.68	-1.92	1.43	520	1.37	0.51	-1.15	2.12
CC	1040	-0.35	0.66	-1.61	1.72	520	1.44	0.77	-1.45	2.59

Variable	Whole Arab economies				
	Obs	Mean	Std. Dev.	Min	Max
G	340	-1.46	1.61	-5.04	1.47
VA	340	-1.00	0.49	-2.04	0.42
PS	340	-0.53	1.05	-3.18	1.21
GE	340	-0.25	0.71	-1.95	1.48
RQ	340	-0.32	0.75	-2.19	1.12
RL	340	-0.23	0.75	-1.92	1.04
CC	340	-0.27	0.72	-1.61	1.72

Variable	LICs					RPLA				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
G	40	-3.57	0.65	-4.32	-2.36	100	-1.07	0.62	-2.64	-0.20
VA	40	-1.39	0.39	-1.88	-0.68	100	-0.66	0.31	-1.37	0.03
PS	40	-1.99	0.47	-2.66	-1.24	100	-0.51	0.56	-2.13	0.31
GE	40	-1.08	0.25	-1.51	-0.59	100	-0.04	0.31	-0.87	0.63
RQ	40	-1.01	0.36	-1.51	-0.45	100	-0.11	0.23	-0.75	0.40
RL	40	-1.34	0.18	-1.63	-0.96	100	-0.06	0.32	-0.78	0.48
CC	40	-1.05	0.28	-1.55	-0.35	100	-0.22	0.36	-1.06	0.55

	RRLA					RRLI				
Variable	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
G	60	-3.18	0.94	-5.04	-1.15	140	-0.41	1.33	-4.63	1.47
VA	60	-1.33	0.40	-2.04	0.42	140	-0.98	0.48	-1.94	-0.20
PS	60	-1.43	0.87	-3.18	0.21	140	0.26	0.70	-2.32	1.21
GE	60	-1.01	0.44	-1.95	-0.20	140	0.17	0.64	-1.64	1.48
RQ	60	-1.16	0.41	-2.17	-0.43	140	0.08	0.76	-2.19	1.12
RL	60	-0.97	0.50	-1.92	-0.09	140	0.28	0.57	-1.52	1.04
CC	60	-0.95	0.37	-1.58	-0.24	140	0.22	0.70	-1.61	1.72

	Arab Republics					Arab Monarchies				
Variable	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
G	180	-2.64	1.20	-5.04	-0.36	160	-0.14	0.74	-1.53	1.47
VA	180	-1.17	0.50	-2.04	0.42	160	-0.80	0.40	-1.86	-0.17
PS	180	-1.18	0.93	-3.18	0.81	160	0.20	0.60	-1.35	1.21
GE	180	-0.72	0.58	-1.95	0.63	160	0.29	0.38	-0.39	1.48
RQ	180	-0.86	0.59	-2.19	0.12	160	0.28	0.34	-0.40	1.12
RL	180	-0.80	0.56	-1.92	0.20	160	0.41	0.27	-0.29	1.04
CC	180	-0.79	0.44	-1.61	0.55	160	0.32	0.49	-0.69	1.72

Appendices of chapter 7

Appendix 7.1:

Appendix 7. 1.1: Spearman's Correlation Coefficient of the Independent Variables of the main model

	M	E	B	H	P	G	Irent	ITech	D.t3fc	D.t4
M	1									
E	-0.29*	1								
B	-0.13*	0.19*	1							
H	0.11*	-0.02	-0.16*	1						
P	-0.39*	0.29*	0.44*	-0.21*	1					
G	-0.41*	0.14*	0.55*	-0.18*	0.71*	1				
Irent	-0.10*	0.14*	-0.52*	0.08*	-0.27*	-0.52*	1			
ITech	-0.12*	0.16*	0.46*	-0.11*	0.31*	0.35*	-0.36*	1		
D.t3fc	-0.03	0.10*	0.05	0.03	0.02	-0.01	0.01	0.01	1	
D.t4	-0.02	0.12*	0.036	-0.05	0.0245	-0.03	0.05	0.03	-0.21*	1

Appendix 7. 1.2: Pearson's Correlation Coefficient of the Independent Variables of Macroeconomic stability components

	IM1	IM2	IM3	IM4	IM5
IM1	1				
IM2	0.0483	1			
IM3	-0.1085	-0.3955	1		
IM4	0.1712	-0.0985	-0.0448	1	
IM5	0.0431	-0.2249	0.1473	0.1375	1

Appendix 7. 1.3: Pearson's Correlation Coefficient of the Independent Variables of External stability components

	IE1	IE2	IE5	IE6
IE1	1			
IE2	-0.5257	1		
IE5	0.3279	-0.3057	1	
IE6	0.1276	0.0183	-0.0918	1

Appendix7. 1.4: Pearson's Correlation Coefficient of the Independent Variables of Structural reform components

	IB2	IB3	IB6
IB2	1		
IB3	0.0652	1	
IB6	-0.0898	-0.493	1

Appendix7. 1.5: Pearson's Correlation Coefficient of the Independent Variables of Human capital components

	IH2	IH3	IH5	IH9
IH2	1			
IH3	0.2287	1		
IH5	0.4475	0.3151	1	
IH9	0.4897	0.1368	0.5385	1

Appendix7. 1.6: Pearson's Correlation Coefficient of the Independent Variables of Physical infrastructure components

	IP2	IP3	IP5	IP6
IP2	1			
IP3	0.6376	1		
IP5	0.592	0.6074	1	
IP6	0.6174	0.5549	0.6014	1

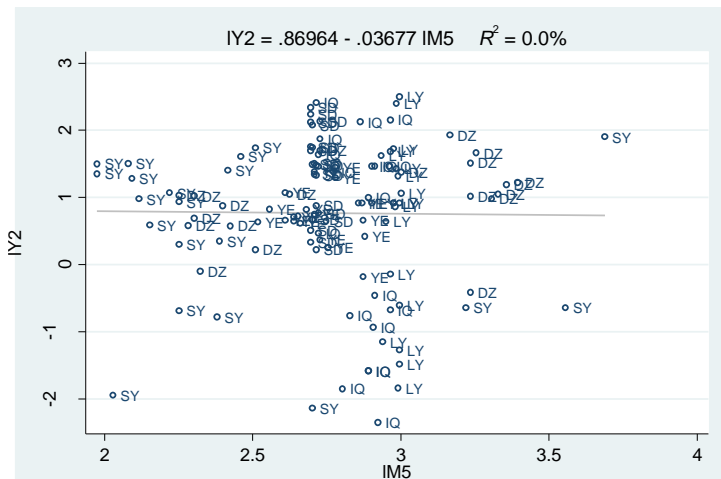
Appendix7. 1.7: Pearson's Correlation Coefficient of the Independent Variables of Governance components

	VA	PS	GE	RQ	RL	CC
VA	1					
PS	0.6772	1				
GE	0.814	0.7773	1			
RQ	0.8364	0.7357	0.9323	1		
RL	0.8161	0.8117	0.9573	0.9245	1	
CC	0.7836	0.7894	0.952	0.8874	0.9494	1

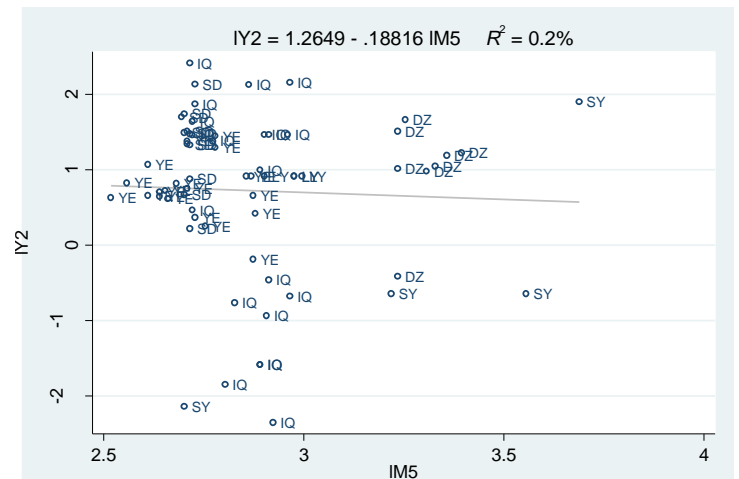
Appendix 7.2

Appendix 7.2.1: The relationship between the unemployment rate and the economic growth of Arab countries with civil war

A. During the wartime

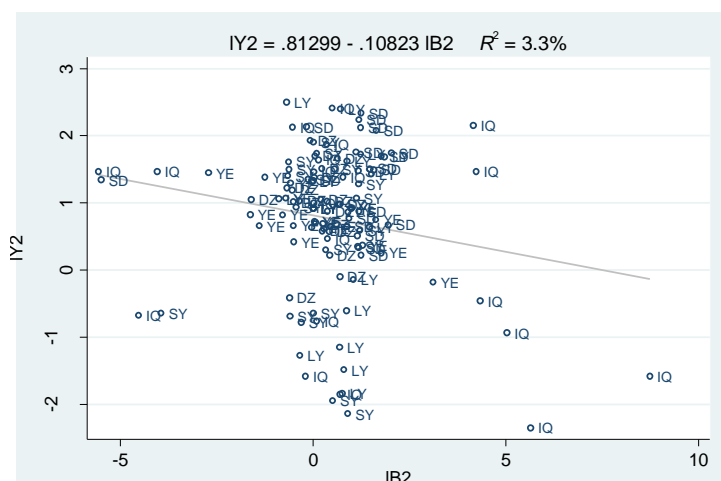


B. During the peacetime

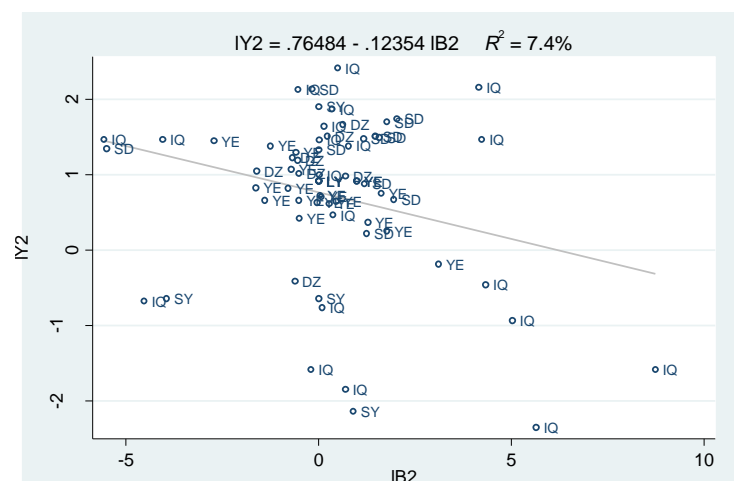


Appendix 7.2.2: The relationship between foreign investment and the economic growth of Arab countries with civil war

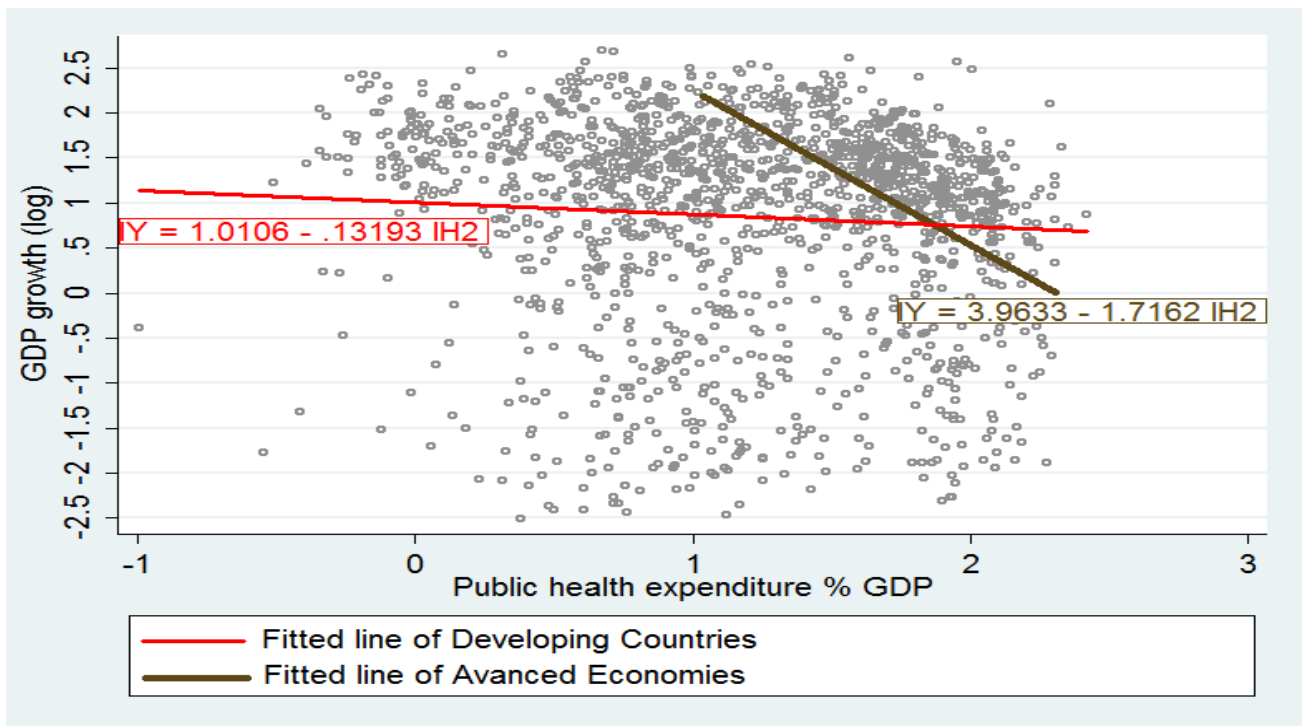
A. During the wartime



B. During the peacetime

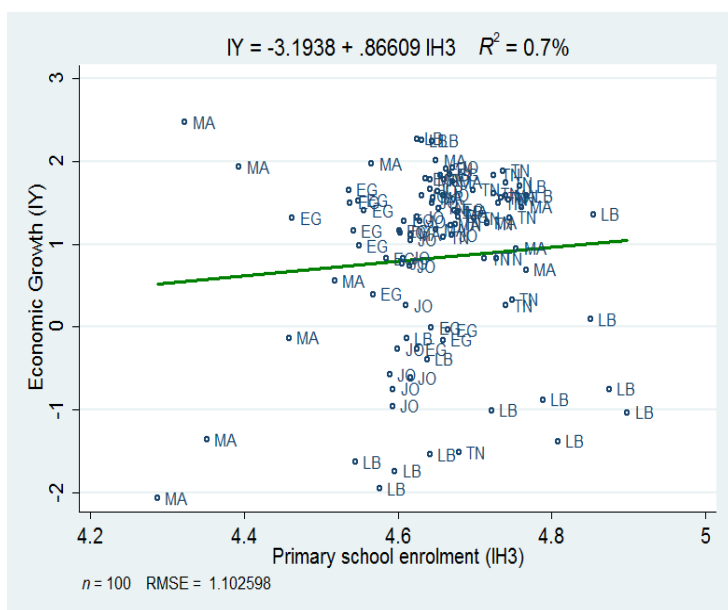


Appendix 7.3: The relationship between economic growth and public health expenditure among advanced economies and developing countries

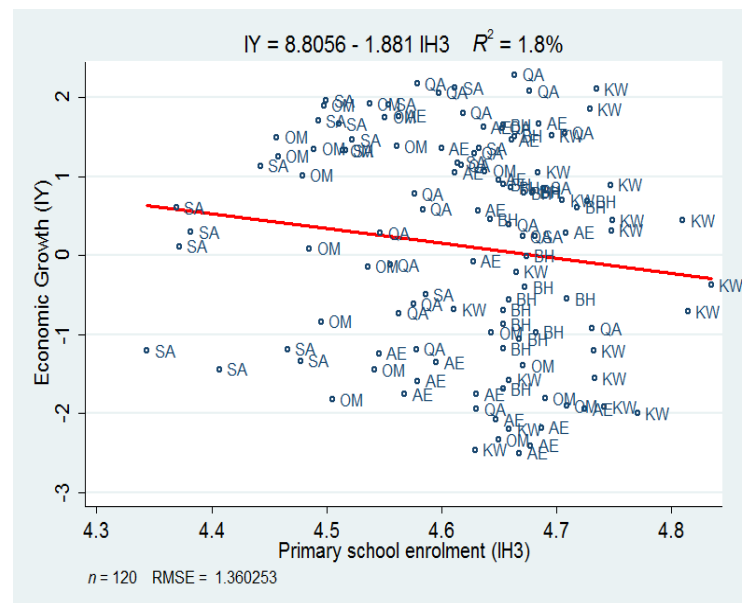


Appendix 7.4: The relationship between economic growth and sanitation

A. Emerging Arab countries

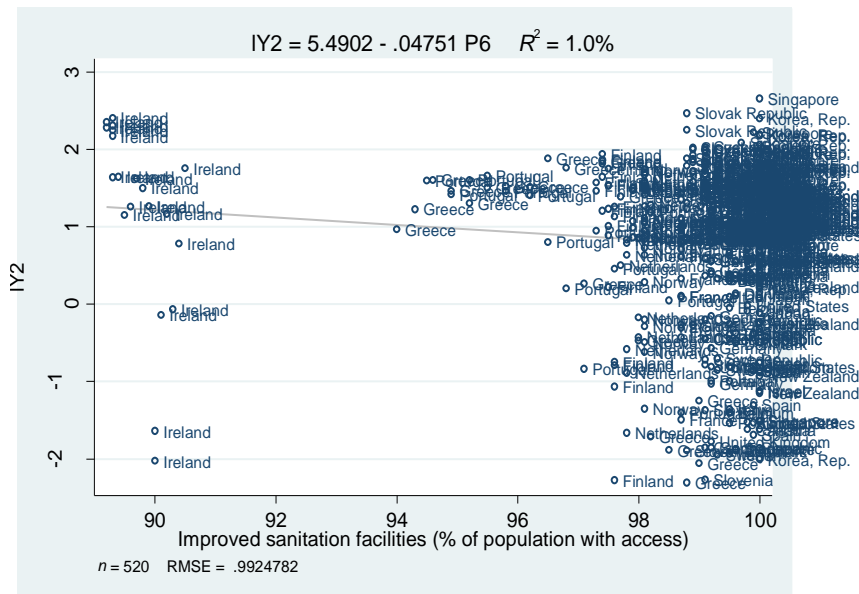


B. GCC countries

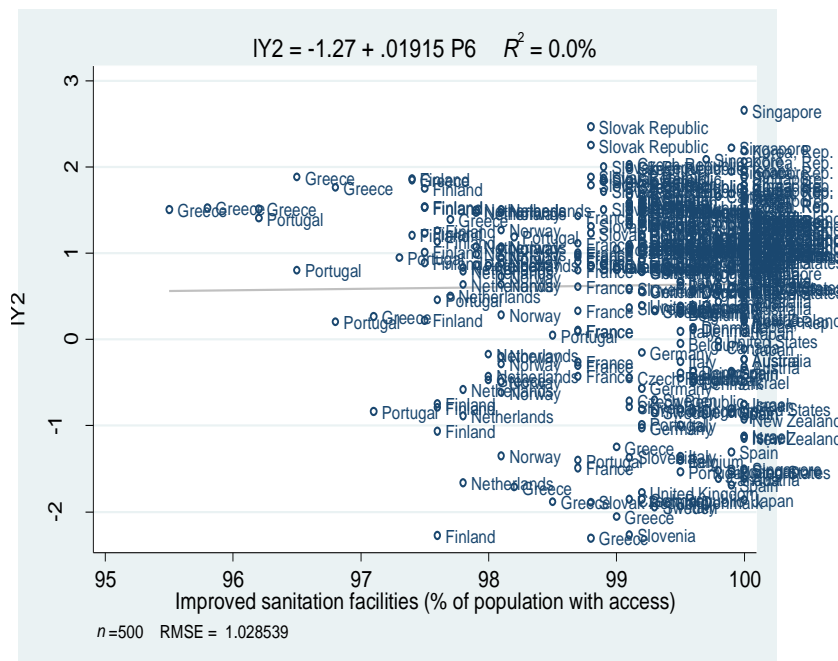


Appendix 7.5: The relationship between economic growth and sanitation in advanced economies

A. All advanced economies



B. Advanced economies excluding Ireland



Appendix 7.6: The contribution of the components of the reform programme in growth

66

A: For world regions

VARIABLES	Advanced Economies			Developing Countries			Arab Countries		
	Coef.	Without G	With G	Coef.	Without G	With G	Coef.	Without G	With G
Macroeconomic Instability	-0.672***	23.8	21.5	-0.606***	11	9.7	-0.380***	6.8	5.8
External Stability	-0.219*	1.5	1.5	0.0926	2.6	2.6	0.0294	1.3	1.1
Structural Reform	0.0816	5	4.6	0.154*	8.1	7.3	0.311***	4.7	4.7
Human capital	-0.332	11.8	10.8	-0.0931	2.7	2.5	-0.9	2.8	2.6
Physical Infrastructure	0.969	8.4	8.1	0.662***	6.2	5.9	-0.144**	7.8	6.2
Governance	0.29***		4.2	0.164*		2.9	0.78**		6
State Variables	-1.96***	29.6	30.6	-1.44***	41.7	41.5	-0.144**	24.6	22.6
Population growth	-0.138**	6.8	6.5	-0.174**	21.2	21	-0.62***	43.3	42.1
Oil rent to GDP	-0.0174	2	1.5	0.188*	2.5	2.9	-0.0137	3.2	3.3
Tech	0.309*	11.1	10.7	-0.0624	4	3.9	-0.141***	5.5	5.7
Total R2		34.1	38.2		22.1	23.3		32.2	35.4

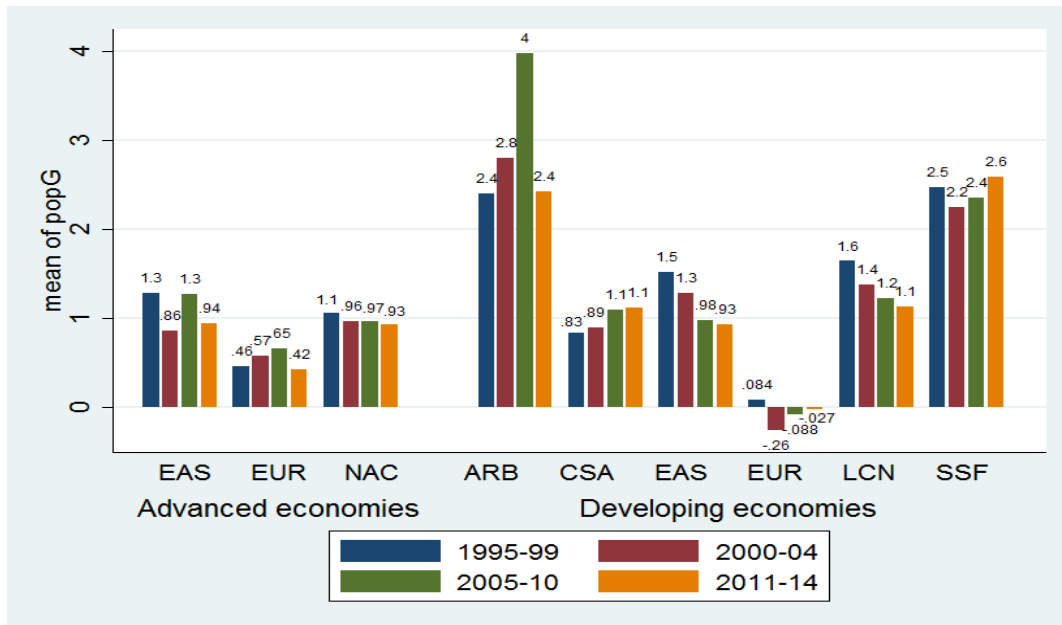
A. For Arab sub-regions

VARIABLES	Gulf Countries			RPLA Countries		
	Coef.	Without G	With G	Coef.	Without G	With G
Macroeconomic Instability	-0.376	2.5	2.3	-0.561*	17.7	13
External Stability	0.164	2.4	2	0.453**	7	8.9
Structural Reform	0.411**	6.7	5.5	0.47***	19.2	14.9
Human capital	-1.10***	11.6	9.8	0.336	4.8	5.9
Physical Infrastructure	1.445	3.1	3.3	-0.436*	3.9	3.4
Governance	0.75*		3.9	1.25**		12
State Variables	-0.591	3.5	3	-0.784	36.3	31.5
Population growth	-0.81***	43.8	44.1	-0.188	6.8	5.5
Oil rent to GDP	0.410*	10.9	11	0.038	1.8	2.8
Tech	-0.161**	15.4	15	-0.132	2.6	2.2
Total R2		51.4	59.2		45.3	51.2

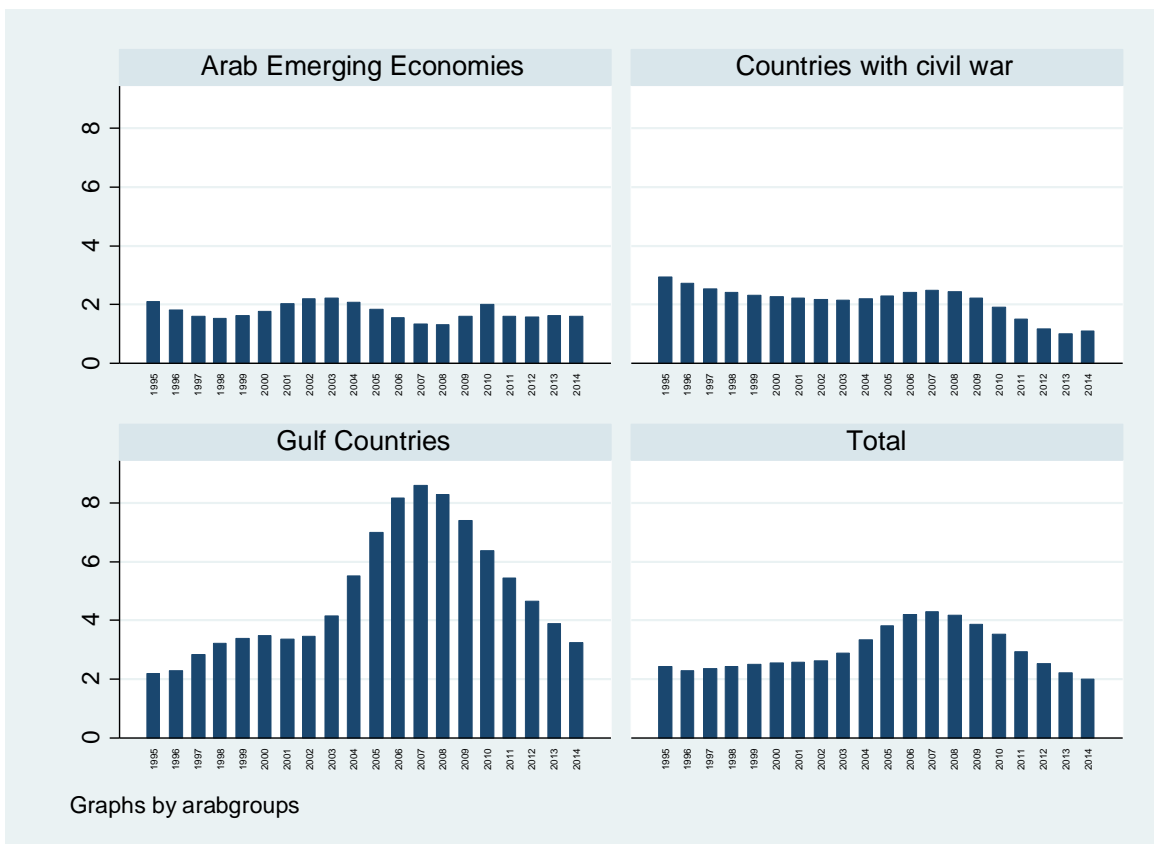
⁶⁶ Excluding the effects of the dummy variables; financial crisis and Arab Spring.

Appendix 7.7: Annual population growth rate

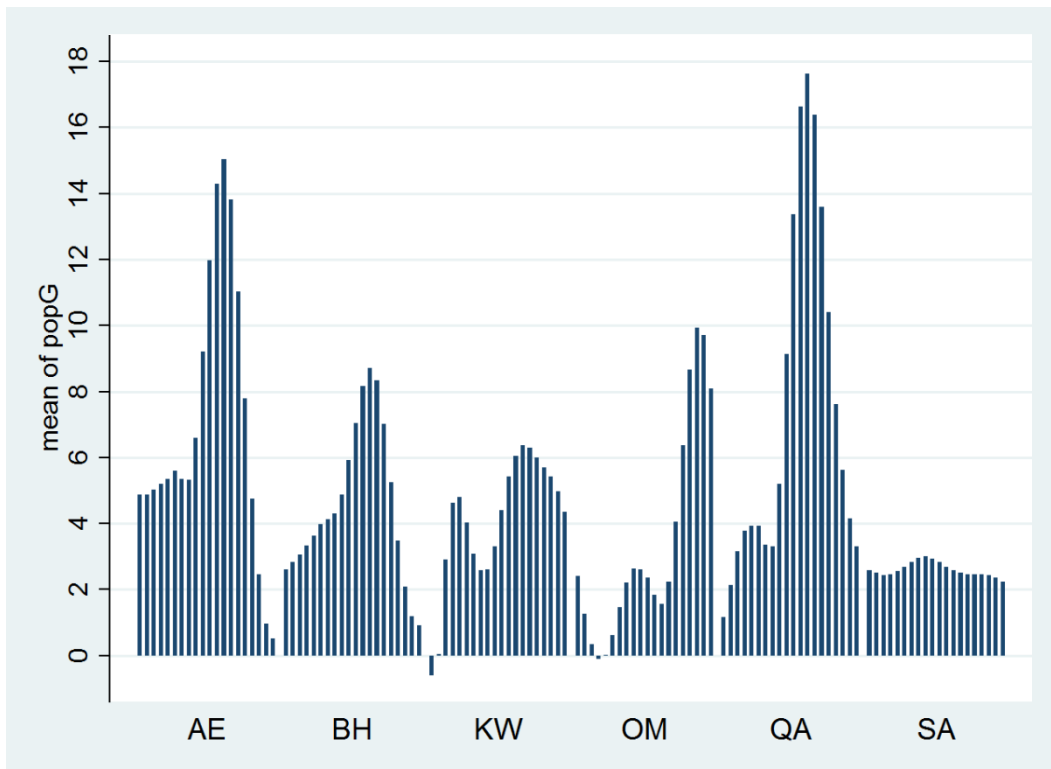
A. World Regions



B. Arab sub-regions



C. Gulf Countries



References

- Aalto, P. 2014. "Institutions in European and Asian energy markets: A methodological overview." *Energy Policy* 74: 4-15.
- Abbott, P., Andersen, T. B., and Tarp, F. 2010. "IMF and economic reform in developing countries." *The Quarterly Review of Economics and Finance* 50 no. 1: 17-26.
- Abdel-Latif, H., Mishra, T., and Staneva, A. 2014. "Arab Countries Between Winter and Spring: Where Democracy Shock Goes Next!" *Economic Research Forum(ERF) Working Papers* No. 954.
- Abdelazim, S. S. 2002. "Structural Adjustment and the Dismantling of Egypt's Etatist System." In: the Faculty of the Virginia Polytechnic Institute and State University.
- Abdelbary, I. 2018. "Governance Matters and Economic Growth: Beyond the Egyptian Revolution." *Theoretical Economics Letters* 8 no. 4: 741-54.
- Abdelbary, I., and Benhin, J. 2018. "Governance, capital and economic growth in the Arab Region." *The Quarterly Review of Economics and Finance*.
- Abdelbary, I., and Benhin, J. 2019a. "The Economic Reform and Political Transitions: Potentials and Challenges of Arab Development." In *Impacts of political instability on economics in the MENA region*, ed. Zgheib, P. W. USA: IGI Global.
- Abdelbary, I., and Benhin, J. 2019b. "Governance and Economic Growth in the Arab Region." In *Impacts of political instability on economics in the MENA region*, ed. Zgheib, P. W. USA: IGI Global.
- Abdouli, M., and Hammami, S. 2017. "Investigating the causality links between environmental quality, foreign direct investment and economic growth in MENA countries." *International Business Review* 26 no. 2: 264-78.
- Abiad, A., Leigh, D., and Mody, A. 2009. "Financial integration, capital mobility, and income convergence." *Economic Policy* 24 no. 58: 241-305.
- Abonazel, M. 2017. "Bias correction methods for dynamic panel data models with fixed effects." *International Journal of Applied Mathematical Research* 6 no. 2: 58-66.
- Acemoglu, D., and Johnson, S. 2007. "Disease and Development: The Effect of Life Expectancy on Economic Growth." *Journal of Political Economy* 115 no. 6: 925-85.
- Acemoglu, D., Johnson, S., and Robinson, J. A. 2001. "The colonial origins of comparative development: An empirical investigation." *American Economic Review* 91 no. 5: 1369-401.
- Acemoglu, D., Johnson, S., and Robinson, J. A. 2002. "Reversal of fortune: Geography and institutions in the making of the modern world income distribution." *The quarterly journal of economics* 117 no. 4: 1231-94.
- Acemoglu, D., Johnson, S., Robinson, J. A., and Yared, P. 2008. "Income and Democracy." *American Economic Review* 98 no. 3: 808-42.
- Acemoglu, D., Naidu, S., Restrepo, P., and Robinson, J. A. 2019. "Democracy Does Cause Growth." *Journal of Political Economy* 127 no. 1: 47-100.

- Acemoglu, D., and Robinson, J. A. 2013. *Why nations fail: The origins of power, prosperity, and poverty*: Crown Business.
- Adak, M. 2010. "Fiscal Deficit and Economic Growth: The Case of Turkey." *Maliye Dergisi* 159: 233-43.
- Adam, C. S., and Bevan, D. L. 2005. "Fiscal deficits and growth in developing countries." *Journal of public Economics* 89 no. 4: 571-97.
- Adams, J. D. 1990. "Fundamental stocks of knowledge and productivity growth." *Journal of Political Economy* 98 no. 4: 673-702.
- Adams, S., and Mengistu, B. 2008. "Privatization, Governance and Economic Development in Developing Countries." *Journal of Developing Societies* 24 no. 4: 415-38.
- ADB. 2000. "Economic Reform and Structural Adjustment Programme " In: African Development Bank Group, operations evaluation department.
- Adedokun, A. J. 2017. "Foreign Aid, Governance and Economic Growth in Sub - Saharan Africa: Does One Cap Fit All?" *African Development Review* 29 no. 2: 184-96.
- Aditya, A., and Roy, S. S. 2010. "Export diversification and economic growth: Evidence from cross-country analysis." In *6th Annual Conference on Economic Growth and Development*.
- AfDB , G. 2012. "Jobs, Justice and the Arab Spring: Inclusive Growth in North Africa." In *African Development Bank. AfDB. Tunisia: African Development Bank*.
- African Union. 2014. "Programme for Infrastructure Development in Africa (PIDA):addressing the infrastructure gap in Africa, to speed up regional integration. ." In *Seventh Conference of African Ministers in Charge of Integration*. Swaziland.
- Afzal, M., Farooq, M. S., Ahmad, H. K., Begum, I., and Quddus, M. A. 2010. "Relationship between school education and economic growth in Pakistan: ARDL bounds testing approach to cointegration." *Pakistan Economic and Social Review*: 39-60.
- Aghion, P., and Bolton, P. 1997. "A theory of trickle-down growth and development." *The review of economic studies* 64 no. 2: 151-72.
- Aghion, P., and Howitt, P. 1992. "A Model of Growth Through Creative Destruction." *Econometrica* 60 no. 2: 323–51.
- Agosin, M. R. 2007. "Export diversification and growth in emerging economies." *Santiago, Chile, University of Chile*.
- Ahmad, M., and Hall, S. G. 2017. "Economic growth and convergence: Do institutional proximity and spillovers matter?" *Journal of Policy Modeling* 39 no. 6: 1065-85.
- Ahmad, M., and Marwan, N. F. 2012. "Economic growth and institutions in developing countries: Panel evidence." In *EconPapers*.
- Ahmad, M. B. 2012. "Essays on Institutions and Economic Growth in Developing Countries." In: University of Leicester.
- Ahmed, H. 2002. "A microeconomic model of an Islamic bank." In: The Islamic Research and Teaching Institute (IRTI).

- Ahmed, K. 2006. "Economic Growth Before and After Reform: The Case of Egypt." *International Journal of Applied Econometrics and Quantitative Studies* 3: 2.
- Ahrend, R. 2007. "Macro-economic stabilisation and structural reform: a political economy approach to emerging economies." In: London School of Economics and Political Science (University of London).
- Aitken, B. J., and Harrison, A. E. 1999. "Do domestic firms benefit from direct foreign investment? Evidence from Venezuela." *American Economic Review*: 605-18.
- Aixala, J., and Fabro, G. 2009. "Economic Freedom, Civil Liberties, Political Rights and Growth: A Causality Analysis." *Spanish Economic Review* 11 no. 3: 165-78.
- Ajide, K., Adeniyi, O., and Raheem, I. 2014. "Does Governance Impact on the Foreign Direct Investment-Growth Nexus in Sub-Saharan Africa?" *Zagreb International Review of Economics and Business* 17 no. 2: 71-81.
- Akpan, G. E., and Effiong, E. L. 2012. "Governance and Development Performance: A Cross-Country Analysis of Sub-Saharan Africa." *Journal of Economics and Sustainable Development* Vol.3 no. 14.
- Al-Abri, A. S. 2016. "Labor Market Heterogeneity and Optimal Exchange Rate Regimes in Resource-rich Arab Countries." In *Understanding and Avoiding the Oil Curse in Resource-rich Arab Economies*: Cambridge University Press.
- Al-Atiqi, S. 2013. "Laboring Against Themselves." In *Carnegie Endowment for International Peace*.
- Al-Habees, M. A., and Rumman, M. A. 2012. "The relationship between unemployment and economic growth in Jordan and some Arab countries." *World Applied Sciences Journal* 18 no. 5: 673-80.
- Al-Hegelan, A., and Palmer, M. 1985. "Bureaucracy and development in Saudi Arabia." *The Middle East Journal*: 48-68.
- Al-Rasheed, M., Benjelloun, S., El-Sayyid, M., Khadduri, W., Korany, B., and Moalla, K. 2009. "Arab Human Development Report 2009: Challenges to Human Security in the Arab Countries." In. New York: United Nations Development Program.
- Albrecht, H., and Schlumberger, O. 2004. "'Waiting for Godot': Regime change without democratization in the Middle East." *International political science review* 25 no. 4: 371-92.
- Alfaro, L. 2003. "Foreign direct investment and growth: Does the sector matter." *Harvard Business School* 2003: 1-31.
- Alguacil, M., Cuadros, A., and Orts, V. 2011. "Inward FDI and growth: The role of macroeconomic and institutional environment." *Journal of Policy Modeling* 33 no. 3: 481-96.
- Ali, M. S. B., and Saha, S. 2016. "Corruption and economic development." In *Economic Development in the Middle East and North Africa*: Springer.
- Ali, O., and Elbadawi, I. 2012. "The political economy of public sector employment in resource dependent countries." In *Economic Research Forum, Working Paper 673*.
- Alimi, E. Y., Sela, A., and Sznajder, M. 2016. *Popular Contention, Regime, and Transition: Arab Revolts in Comparative Global Perspective*: Oxford University Press.

- Alissa, S. 2007. "The challenge of economic reform in the Arab world: Toward more productive economies." In: Carnegie Endowment for International Peace.
- Alleyne, G. A. 2002. "Health, economic growth and poverty reduction." In: World health organization.
- Allison, P. D. 2001. "Missing Data: Sage University Papers Series on Quantitative Applications in the Social Sciences (07–136)." *Thousand Oaks, CA*.
- Alonso, J. A. 2011. "Colonisation, Institutions and Development: New Evidence." *Journal of Development Studies* 47 no. 7: 937-58.
- Althani, M. 2012. "The Arab Spring and the Gulf States : Time to embrace change." In. London: Profile Books.
- Alvi, H. 2001. "Regional integration in the Middle East: A comparative analysis of inter-Arab economic cooperation." In. Ann Arbor: Howard University.
- Amin, M., Assaad, R., al-Baharna, N., Dervis, K., Desai, R. M., Dhillon, N. S., Galal, A., Ghanem, H., and Graham, C. 2012. *After the spring: Economic transitions in the Arab world*: Oxford University Press.
- Anderson, L. 1987. "The State in the Middle East and North Africa." *Comparative Politics* 20 no. 1: 1-18.
- Andvig, J. C., and Fjeldstad, O.-H. 2000. "Research on Corruption A policy oriented survey." In: Commissioned by NORAD.
- Ang, S., Van Dyne, L., and Tan, M. L. 2008. "Cultural intelligence." *The Cambridge*.
- Annerstedt, J. 1988. "The Global R&D System: Where is the Third World?" In *From Research Policy to Social Intelligence*: Springer.
- Anwar, S., and Cooray, A. 2012. "Financial development, political rights, civil liberties and economic growth: Evidence from South Asia." *Economic Modelling* 29 no. 3: 974-81.
- Anyanwu, J. C., and Erhijakpor, A. E. 2009. "Health expenditures and health outcomes in Africa." *African Development Review* 21 no. 2: 400-33.
- Arcand, J.-L., Berkes, E., and Panizza, U. 2012. "Too much finance?" *International Monetary Fund Working Papers* 161.
- Arellano, M., and Bond, S. 1991. "Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations." *The review of economic studies* 58 no. 2: 277-97.
- Aristovnik, A. 2007. "Short-and medium-term determinants of current account balances in Middle East and North Africa countries." *William Davidson Institute Working Paper* 862.
- Arjomand, M., Emami, K., and Salimi, F. 2016. "Growth and Productivity; The Role of Budget Deficit in the MENA Selected Countries." *Procedia Economics and Finance* 36: 345-52.
- Arndt, C. 2009. "Governance Indicators." In. Netherlands: Maastricht University.
- Aron, J. 2000. "Growth and Institutions: A Review of the Evidence." *World Bank Research Observer* 15 no. 1: 99-135.

Arond, E., and Bell, M. 2010. "Trends in the Global Distribution of R&D since the 1970s: Data, their Interpretation and Limitations." In. Brighton: STEPS Centre.

Aschauer, D. A. 1989. "Is public expenditure productive?" *Journal of Monetary Economics* 23 no. 2: 177-200.

Assiotis, A., and Sylwester, K. 2014. "Do the Effects of Corruption upon Growth Differ Between Democracies and Autocracies?" *Review of Development Economics* 18 no. 3: 581-94.

Asteriou, D., and Hall, S. G. 2016. *Applied Econometrics*. London: Palgrave.

Aström, Z. H. O. 2011. "Paradigm shift for sustainable development: The contribution of Islamic economics." *Journal of Economic and Social Studies* 1 no. 1: 73.

Asutay, M. 2007. "A political economy approach to Islamic economics: Systemic understanding for an alternative economic system." *Kyoto bulletin of Islamic area studies* 1 no. 2: 3-18.

Atkins, F. 2000. "Revisiting the exchange rate debate: the Jamaican experience." *Journal of International Development* 12 no. 1: 121.

Ayres, R. L. 1998. *Crime and violence as development issues in Latin America and the Caribbean*: World Bank Publications.

Aysan, A. F., Nabli, M. K., and Veganzones-Varoudakis, M.-A. 2007. "Governance Institutions and Private Investment: An Application to the Middle East and North Africa." *Developing Economies* 45 no. 3: 339-77.

Aysan, A. F., Nabli, M. K., and Véganzonès–Varoudakis, M.-A. 2006. "Governance And Private Investment In The Middle East And North Africa." *World Bank policy research working paper* no. Working Paper 3934.

Ayubi, N. N. 1986. "Bureaucratization as development: administrative development and development administration in the Arab world." *International Review of Administrative Sciences* 52 no. 2: 201-22.

Azariadis, C., and Drazen, A. 1990. "Threshold Externalities in Economic Development*." *The quarterly journal of economics* 105 no. 2: 501-26.

Azim, H. A. 1999. *Economic reform in the Arab countries between the exchange rate and the general budget*.

Azman-Saini, W. N. W., Baharumshah, A. Z., and Law, S. H. 2010. "Foreign direct investment, economic freedom and economic growth: International evidence." *Economic Modelling* 27 no. 5: 1079-89.

Baczko, A., Dorronsoro, G., and Quesnay, A. 2018. *Civil war in Syria: mobilization and competing social orders*: Cambridge University Press.

Badawi, I. E., and Makdisi, S. 2007. "Explaining the democracy deficit in the Arab world." *The Quarterly Review of Economics and Finance* 46 no. 5: 813-31.

Baddeley, M. 2011. "Civil War and Human Development: Impacts of Finance and Financial Infrastructure."

Bade, R., and Parkin, M. 2007. *Foundations of economics*: Pearson/Addison Wesley.

- Bahgat, G. 2017. "Sovereign Wealth Funds in the Persian Gulf States." In *The Oxford Handbook of Sovereign Wealth Funds*.
- Bahmani-Oskooee, M., and Miteza, I. 2006. "Are devaluations contractionary? evidence from panel cointegration." *Economic Issues* 11 no. 1: 49-64.
- Bahry, L. 2013. "Qatar: Democratic Reforms and Global Status." In *Governance in the Middle East and North Africa: A handbook.*, ed. Kadhim, A.: Routledge.
- Bakare, A., and Olubokun, S. 2011. "Health care expenditure and economic growth in Nigeria: An empirical study." *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)* 2 no. 2: 83-87.
- Baklouti, N., and Boujelbene, Y. 2015. "Exploring the Relationship between Democracy, Corruption and Economic Growth in MENA countries." *Acta Universitatis Danubius. Œconomica* 11 no. 3.
- Baland, J.-M., Moene, K. O., and Robinson, J. A. 2010. "Chapter 69 - Governance and Development*." In *Handbook of Development Economics*, ed. Dani, R. and Mark, R.: Elsevier.
- Baldacci, E. 2004. "The impact of poor Health on Total factor productivity." *The Journal of Development Studies* 42 no. 6: 918-38.
- Baldacci, E., Clements, B., Gupta, S., and Cui, Q. 2008. "Social Spending, Human Capital, and Growth in Developing Countries." *World Development* 36 no. 8: 1317-41.
- Ball, L., and Mankiw, N. G. 1992. "Asymmetric price adjustment and economic fluctuations." In: National Bureau of Economic Research.
- Baltagi, B. 2008. *Econometric analysis of panel data*: John Wiley & Sons.
- Barbieri, L. 2006. "Panel unit root tests: a review." *Serie Rossa: Economia-UCSC Piacenza* no. 43: 1-53.
- Bardhan, P. 1985. "Marxist Ideas in Development Economics: A Brief Evaluation." *Economic and Political Weekly* 20 no. 13: 550-55.
- Barrios, S., Langedijk, S., and Pench, L. R. 2010. "EU fiscal consolidation after the financial crisis Lessons from past experiences." In *Fiscal Policy: Lessons from the Crisis*, ed. d'Italia, B. Perugia.
- Barro, R. J. 1990. "Government Spending in a Simple Model of Endogenous Growth." *Journal of Political Economy* 98 no. 5, part II.
- Barro, R. J. 1996a. "Democracy and Growth." *Journal of Economic Growth* 1 no. 1: 1-27.
- Barro, R. J. 1996b. "Determinants of Economic Growth: A Cross-Country Empirical Study." *National Bureau of Economic Research, Washington, DC (August)*.
- Barro, R. J. 1999. "Determinants of economic growth: a cross-country empirical study." *The Lionel Robbins lectures Show all parts in this series*.
- Barro, R. J. 2000. "Education and economic growth." *Harvard University*.
- Barro, R. J. 2003. "Determinants of economic growth in a panel of countries." *Annals of economics and finance* 4: 231-74.

- Barro, R. J., Mankiw, N. G., and Sala-i-Martin, X. 1992. "Capital mobility in neoclassical models of growth." In: National Bureau of Economic Research.
- Barro, R. J., and Sala-i-Martin, X. 1995. *Economic Growth*. New York: McGraw-Hill.
- Batniji, R., Khatib, L., Cammett, M., Sweet, J., Basu, S., Jamal, A., Wise, P., and Giacaman, R. 2014. "Governance and health in the Arab world." *The Lancet* 383 no. 9914: 343-55.
- Baumol, W. J. 2002. *The free-market innovation machine: Analyzing the growth miracle of capitalism*: Princeton university press.
- Bayar, Y. 2017. "Impact of openness and economic freedom on economic growth in the transition economies of the European Union." *South-Eastern Europe Journal of Economics* 14 no. 1.
- Becker, G. S. 1964. *Human capital* New York: national bureau of economic research.
- Beckmann, V., and Padmanabhan, M. 2009. *Institutions and Sustainability: Political Economy of Agriculture and the Environment-Essays in Honour of Konrad Hagedorn*: Springer Science & Business Media.
- Bedir, S. 2016. "Healthcare Expenditure and Economic Growth in Developing Countries." *Advances in Economics and Business* 4 no. 2: 76-86.
- Begg, D., Fischer, S., and Dornbusch, R. 1994. *Economics*: McGraw Hill.
- Begg, I., Lansbury, M., and Mayes, D. G. 1994. *The case for decentralised industrial policy*: CeSAER, Faculty of Urban and Regional Studies, University of Reading.
- Belguith, S. O. 2016. "Twin deficit in MENA countries: an empirical investigation." *Romanian Economic Journal* 19 no. 60.
- Bell, J. 1992. "Adam Smith's theory of economic development: "Of the natural progress of opulence"." *Journal of Economics and Finance* 16 no. 1: 137-45.
- Bellin, E. 2004. "The Robustness of Authoritarianism in the Middle East: Exceptionalism in Comparative Perspective." *Comparative Politics* 36 no. 2: 139-57.
- Bellin, E. 2012. "Reconsidering the robustness of authoritarianism in the Middle East: Lessons from the Arab Spring." *Comparative Politics* 44 no. 2: 127-49.
- Bengoa, M., and Sanchez-Robles, B. 2003. "Foreign direct investment, economic freedom and growth: new evidence from Latin America." *European Journal of Political Economy* 19 no. 3: 529-45.
- Benhabib, J., Corvalan, A., and Spiegel, M. M. 2013. "Income and democracy: Evidence from nonlinear estimations." *Economics Letters* 118 no. 3: 489-92.
- Bennett, D. L. 2014. "Essays on institutions, economic development, and inequality." In. Ann Arbor: The Florida State University.
- BenYishay, A., and Betancourt, R. R. 2010. "Civil liberties and economic development." *Journal of Institutional Economics* 6 no. 03: 281-304.
- Berman, E. 2011. *Radical, religious, and violent: The new economics of terrorism*: MIT press.

- Berument, H., and Pasaogullari, M. 2003. "Effects of the real exchange rate on output and inflation: evidence from Turkey." *Developing Economies* 41 no. 4: 401-35.
- Bhardwaj, M. 2012. "Development of Conflict in Arab Spring Libya and Syria: From Revolution to Civil War." *Washington University International Review* 1 no. 1: 76-97.
- Bhatia, A., and Campbell-White, O. 1998. "Privatization in Africa." *Directions in Development Series*.
- Bhattacharya, M. R., and Wolde, H. 2010. "Constraints on Growth in the MENA Region." no. 10-30.
- Bibi, S., and Nabli, M. K. 2010. "Equity and inequality in the Arab region." *ERF Policy Research Report* 33.
- Biglaiser, G., and DeRouen, K. 2006. "Economic Reforms and Inflows of Foreign Direct Investment in Latin America." *Latin American Research Review* 41 no. 1: 51-75.
- Birdsall, N. 1988. "Chapter 12 Economic approaches to population growth." In *Handbook of Development Economics*, ed. Hollis, C. and Srinivasan, T. N.: Elsevier.
- Blake, T. 2015. "Investigating the Impact of Public Debt on Economic Growth in Jamaica." *Fiscal and Economic Programme Monitoring Department Bank of Jamaica, Working Paper*.
- Bodmer, F., S. Borner, and Kobler, M. 2004. *Institutional Efficiency and its Determinants*: OECD Publishing.
- Bond, S. R., Hoeffler, A., and Temple, J. R. 2001. "GMM estimation of empirical growth models." In *Centre for Economic Policy Research*. London , UK: CEPR.
- Borensztein, E., De Gregorio, J., and Lee, J.-W. 1998. "How does foreign direct investment affect economic growth?" *Journal of international Economics* 45 no. 1: 115-35.
- Bornhorst, F., and Ivanova, A. 2012. "Current Account Imbalances: Can Structural Policies Make a Difference?" *IMF Working Papers*.
- Boskin, M. J., and Lau, L. J. 1990. "Post-war economic growth in the group-of-five countries: A new analysis." In: National Bureau of Economic Research.
- BP, B. P. 2014. "BP statistical review of world energy." In *BP Statistical Review of World Energy*. London , UK.
- Brown, N. J. 2012. *Constitutions in a nonconstitutional world: Arab basic laws and the prospects for accountable government*: Suny Press.
- Bruno, M., and Easterly, W. 1998. "Inflation crises and long-run growth." *Journal of Monetary Economics* 41 no. 1: 3-26.
- Brynen, R., Korany, B., and Noble, P. 1995. *Political liberalization and democratization in the Arab world*: Lynne Rienner Publishers.
- Bueno de Mesquita, B., Morrow, J. D., Siverson, R. M., and Smith, A. 2001. "Political competition and economic growth." *Journal of Democracy* 12 no. 1: 58-72.
- Bun, M. J. G., and Carree, M. A. 2005. "Bias-Corrected Estimation in Dynamic Panel Data Models." *Journal of Business & Economic Statistics* 23 no. 2: 200-10.

- Bun, M. J. G., and Carree, M. A. 2006. "Bias-corrected estimation in dynamic panel data models with heteroscedasticity." *Economics Letters* 92 no. 2: 220-27.
- Burrell, G., and Morgan, G. 1979. *Sociological paradigms and organisational analysis*: london: Heinemann.
- Busse, M., and Groizard, J. L. 2008. "Foreign Direct Investment, Regulations and Growth." *World Economy* 31 no. 7: 861-86.
- Butkiewicz, J. L., and Yanikkaya, H. 2006. "Institutional quality and economic growth: Maintenance of the rule of law or democratic institutions, or both?" *Economic Modelling* 23 no. 4: 648-61.
- Butkiewicz, J. L., and Yanikkaya, H. 2011. "Institutions and the Impact of Government Spending on Growth." *Journal of Applied Economics* 14 no. 2: 319-41.
- Buvinic, M., and Morrison, A. 1999. "Violence as an obstacle to development." In: Inter-American Development Bank.
- Cadot, O., Carrère, C., and Strauss-Kahn, V. 2011. "Export diversification: What's behind the hump?" *Review of Economics and Statistics* 93 no. 2: 590-605.
- Calderon, C., Chong, A., and Leon, G. 2007. "Institutional enforcement, labor-market rigidities, and economic performance." *Emerging Markets Review* 8 no. 1: 38-49.
- Calderón, C., and Servén, L. 2004. *The effects of infrastructure development on growth and income distribution*: World Bank Publications.
- Calderón, C., and Servén, L. 2010. "Infrastructure and economic development in Sub-Saharan Africa." *Journal of African Economies* 19 no. suppl_1: i13-i87.
- Calderon, C. A., Chong, A., and Loayza, N. V. 2002. "Determinants of current account deficits in developing countries." *Contributions in Macroeconomics* 2 no. 1.
- Callen, M. T., Cherif, R., Hasanov, F., Hegazy, M. A., and Khandelwal, P. 2014. *Economic Diversification in the GCC: Past, Present, and Future*: International Monetary Fund.
- Campante, F., and Yanagizawa-Drott, D. 2015. "Does religion affect economic growth and happiness? Evidence from Ramadan." *The quarterly journal of economics* 130 no. 2: 615-58.
- Campillo, M., and Miron, J. A. 1997. "Why does inflation differ across countries?" In *Reducing inflation: Motivation and strategy*: University of Chicago Press.
- Campos, N. F., and Nugent, J. B. 1999. "Development Performance and the Institutions of Governance: Evidence from East Asia and Latin America." *World Development* 27 no. 3: 439-52.
- Canning, D. 1998. "A database of world stocks of infrastructure, 1950–95." *The World Bank Economic Review* 12 no. 3: 529-47.
- Canning, D., and Pedroni, P. 2004. "The effect of infrastructure on long run economic growth." *Harvard University*: 1-30.
- Canton, E., Grilo, I., Monteagudo, J., Pierini, F., and Turrini, A. 2014. "The role of structural reform for adjustment and growth." *ECFIN Economic Brief* 34: 1-6.

- Caporale, G. M., Rault, C., Sova, A. D., and Sova, R. 2015. "Financial development and economic growth: Evidence from 10 new European Union members." *International Journal of Finance & Economics* 20 no. 1: 48-60.
- Carlson, M. A., King, T., and Lewis, K. 2011. "Distress in the financial sector and economic activity." *The BE Journal of Economic Analysis & Policy* 11 no. 1.
- Cartier-Bresson, J. 2000. "Economics of corruption." In *The OECD Observer: Organisation for Economic Cooperation and Development*.
- Caselli, F., Esquivel, G., and Lefort, F. 1996. "Reopening the convergence debate: a new look at cross-country growth empirics." *Journal of Economic Growth* 1 no. 3: 363-89.
- Castells-Quintana, D., and Royuela, V. 2012. "Unemployment and long-run economic growth: The role of income inequality and urbanisation." *Investigaciones Regionales* 12 no. 24: 153-73.
- Castro, V. 2017. "Functional components of public expenditure, fiscal consolidations, and economic activity." *Economics & Politics* 30 no. 1: 124-50.
- Caves, R. E. 1974. "Multinational firms, competition, and productivity in host-country markets." *Economica* 41 no. 162: 176-93.
- Cecchetti, S. G., and Kharroubi, E. 2012. "Reassessing the impact of finance on growth." *BIS Working Paper No. 381*.
- Cervellati, M., and Sunde, U. 2011. "Life expectancy and economic growth: the role of the demographic transition." *Journal of Economic Growth* 16 no. 2: 99-133.
- Chakraborty, C., and Nunnenkamp, P. 2006. "Economic reforms, foreign direct investment and its economic effects in India." In: Kiel Working Paper.
- Chaney, E. 2013. "Revolt on the Nile: Economic shocks, religion, and political power." *Econometrica* 81 no. 5: 2033-53.
- Charfeddine, L., and Mrabet, Z. 2017. "The impact of economic development and social-political factors on ecological footprint: A panel data analysis for 15 MENA countries." *Renewable and Sustainable Energy Reviews* 76: 138-54.
- Chaves, M. 2004. *Congregations in America*: Harvard University Press.
- Che, Y., Lu, Y., Tao, Z., and Wang, P. 2013. "The impact of income on democracy revisited." *Journal of Comparative Economics* 41 no. 1: 159-69.
- Cheema, G. S. 2005. *Building democratic institutions: governance reform in developing countries*: Kumarian Press.
- Chen, B., and Feng, Y. 1996. "Some political determinants of economic growth: Theory and empirical implications." *European Journal of Political Economy* 12 no. 4: 609-27.
- Chene, M., and Hodess, R. 2007. "Overview of corruption in MENA countries." In *Retrieved from Transparency International*: <http://www.u4.no/pdf>.
- Chenery, H. 1986. "Growth and transformation." *Industrialization and growth: A comparative study*.
- Chetwynd, E., Chetwynd, F., and Spector, B. 2003. "Corruption and Poverty: A Review of Recent Literature."

- Chong, A., and Calderon, C. 2000. "Causality and feedback between institutional measures and economic growth." *Economics & Politics* 12 no. 1: 69-81.
- Churchill, S. A., Yew, S. L., and Ugur, M. 2015. "Effects of government education and health expenditures on economic growth: a meta-analysis."
- Cieřlik, A., and Anh, N. T. N. 2016. "Determinants of Foreign Direct Investment from OECD to ASEAN." *Forum for Research on Empirical International Trade* FREIT987.
- Collier, P. 1999. "On the economic consequences of civil war." *Oxford Economic Papers* 51 no. 1: 168-83.
- Collier, P. 2011. *Wars, guns and votes: Democracy in dangerous places*: Random House.
- Collier, P., and Hoeffler, A. 1998. "On economic causes of civil war." *Oxford Economic Papers* 50 no. 4: 563-73.
- Colombage, S. R. N. 2009. "Financial markets and economic performances: Empirical evidence from five industrialized economies." *Research in International Business and Finance* 23 no. 3: 339-48.
- Colombatto, E. 2006. "On economic growth and development." *The Review of Austrian Economics* 19 no. 4: 243-60.
- Colombo, S. 2012. "The GCC countries and the Arab Spring. Between outreach, patronage and repression." *IAI WORKING PAPERS* 12 / 09.
- Commander, S., and Nikoloski, Z. 2011. "Institutions and Economic Performance: What Can Be Explained?" *2011* 2 no. 2.
- Connolly, M. 1983. "Exchange Rates, Real Economic Activity and the Balance of Payments: Evidence from the 1960s, w: Recent Issues in the Theory of the Flexible Exchange Rate, red. E. Classen, P. Salin." In: Amsterdam, North Holland.
- Corm, G. 2012. "The socio-economic factors behind the Arab revolutions." *Contemporary Arab Affairs* 5 no. 3: 355-71.
- Costello, M., Jenkins, J. C., and Aly, H. 2015. "Bread, Justice, or Opportunity? The Determinants of the Arab Awakening Protests." *World Development* 67 no. 0: 90-100.
- Crockett, T. 2014. "Rethinking Arab employment: a systemic approach for resource-endowed economies." In. Geneva, Switzerland: World Economic Forum, .
- Curtin, P. D. 1989. *Death by migration: Europe's encounter with the tropical world in the nineteenth century*: Cambridge University Press.
- Dabla-Norris, M. E. 2016. *Structural Reforms and Productivity Growth in Emerging Market and Developing Economies*: International Monetary Fund.
- Dabrowski, M. 2012. "What Can Arab Countries Learn From Post-communist Transition?" *CASE Network E - Briefs* no. 9: 1-5.
- Dancey, C., and Reidy, J. 2004. *Statistics without maths for psychology: using SPSS for windows*. . London: Pearson Education Limited.
- Dang, G., and Pheng, L. S. 2014. "Chapter 2 : Theories of Economic Development." In *Infrastructure Investments in Developing Economies: The Case of Vietnam*: Springer Singapore.

- Davidson, R., and MacKinnon, J. G. 2004. *Econometric theory and methods*.
- Davis, J. 2013. "The Arab Spring and Arab Thaw Unfinished Revolutions and the Quest for Democracy." In. New York: Ashgate Publishing Ltd.
- Dawson, J. W. 1998. "Institutions, investment, and growth: New cross-country and panel data evidence." *Economic Inquiry* 36: 603-19.
- Dawson, J. W. 2003. "Causality in the freedom–growth relationship." *European Journal of Political Economy* 19 no. 3: 479-95.
- De Gregorio, J. 2005. "The role of foreign direct investment and natural resources in economic development." In *Multinationals and Foreign Investment in Economic Development*: Springer.
- de Haan, J., and Sturm, J.-E. 2000. "On the relationship between economic freedom and economic growth." *European Journal of Political Economy* 16 no. 2: 215-41.
- de Haan, J., and Sturm, J.-E. 2003. "Does more democracy lead to greater economic freedom? New evidence for developing countries." *European Journal of Political Economy* 19 no. 3: 547-63.
- De Loo, I., and Soete, L. 1999. "The impact of technology on economic growth: Some new ideas and empirical considerations."
- De Mello, L. R. 1999. "Foreign direct investment-led growth: evidence from time series and panel data." *Oxford Economic Papers* 51 no. 1: 133-51.
- De Melo, J., Diop, N., and Marotta, D. 2012. "Natural resource abundance, growth and diversification in MENA: the effects of natural resources and the role of policies." *Washington, DC: World Bank*.
- De Vos, I., Everaert, G., and Ruysen, I. 2015. "Bootstrap-based bias correction and inference for dynamic panels with fixed effects." *Stata Journal (forthcoming)*: 1-31.
- Debelle, G., and Faruquee, H. 1996. "What determines the current account? A cross-sectional and panel approach."
- Deidda, L., and Fattouh, B. 2002. "Non-linearity between finance and growth." *Economics Letters* 74 no. 3: 339-45.
- Dethier, J. 1999. "Governance and Economic Performance: A Survey, ZEF." *Discussion Papers On Development Policy No. 5, Center for Development Research, Bonn*: pp. 62.
- Diamond, L. J. 2005. *Democracy, development and good governance: The inseparable links, annual democracy and governance lecture. Presented at the Center for Democratic Development, British Council Hall, Accra, Ghana, March 1, 2005.*
http://www.stanford.edu/~ldiamond/papers/CDD_lecture_05.htm. Accessed 12 July 2017).
- Diebolt, C., Mishra, T., Ouattara, B., and Parhi, M. 2013. "Democracy and Economic Growth in an Interdependent World." *Review of International Economics* 21 no. 4: 733-49.
- Djankov, S., McLiesh, C., and Klein, M. U. 2004. *Doing business in 2004: understanding regulation*: World Bank Publications.
- Djankov, S., McLiesh, C., and Ramalho, R. M. 2006. "Regulation and growth." *Economics Letters* 92 no. 3: 395-401.

- Djezou, W. B. 2014. "The Democracy and Economic Growth Nexus: Empirical Evidence from Côte d'Ivoire." 11 no. 2: 251-66.
- Donges, J. B., Krueger, A. O., and Bhagwati, J. N. 1978. "Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences." In: JSTOR.
- Doucouliaagos, C., and Ulubasoglu, M. A. 2006. "Economic freedom and economic growth: Does specification make a difference?" *European Journal of Political Economy* 22 no. 1: 60-81.
- Dowdle, M. W. 2017. "Public accountability: conceptual, historical, and epistemic mappings." *REGULATORY THEORY*: 197.
- Drazen, A. 2000. *Political economy in macroeconomics*: Princeton University Press.
- Dreher, A. 2006. "IMF and economic growth: The effects of programs, loans, and compliance with conditionality." *World Development* 34 no. 5: 769-88.
- Dridi, M. 2013. "Corruption and Economic Growth: The Transmission Channels." *Journal of Business Studies Quarterly* 4 no. 4: 121-52.
- Drukker, D. M. 2003. "Testing for serial correlation in linear panel-data models." *Stata journal* 3 no. 2: 168-77.
- Drury, A. C., Krieckhaus, J., and Lusztig, M. 2006. "Corruption, Democracy, and Economic Growth." *International Political Science Review / Revue internationale de science politique* 27 no. 2: 121-36.
- Dutz, M. A., and Hayri, A. 2000. *Does more intense competition lead to higher growth?*: World Bank Publications.
- Easterly, W. 2001. *The elusive quest for growth: economists' adventures and misadventures in the tropics*: MIT press.
- Easterly, W. 2006. "Reliving the 1950s: the big push, poverty traps, and takeoffs in economic development." *Journal of Economic Growth* 11 no. 4: 289-318.
- Easterly, W., and Levine, R. 1997. "Africa's growth tragedy: policies and ethnic divisions." *The quarterly journal of economics*: 1203-50.
- Ebbinghaus, B. 2005. "Can path dependence explain institutional change? Two approaches applied to welfare state reform." In: MPIfG Discussion Paper.
- EBRD. 2015. "Transition Report 2015- 2016: Rebalancing Finance." In. London: European Bank for Reconstruction and Development.
- Edey, M. 1994. "Costs and benefits of moving from low inflation to price stability." *Measurement* 100: 117.
- Edwards, S. 1998. "Openness, productivity and growth: what do we really know?" *The Economic Journal* 108 no. 447: 383-98.
- Effendi, N. 2001. "External debt and growth of developing countries." In. Ann Arbor: The University of Oklahoma.
- Eggoh, J. C., and Khan, M. 2014. "On the nonlinear relationship between inflation and economic growth." *Research in Economics* 68 no. 2: 133-43.

- EIU. 2017. "CountryData." In. London: The Economist Intelligence Unit
- El-Erian, M. A., Eken, S., Fennell, S., and Chauffour, J.-P. 1996. *Growth and stability in the Middle East and North Africa*: International Monetary Fund.
- El-Gamal, M. A. 2006. *Islamic finance: Law, economics, and practice*: Cambridge University Press.
- El-Naggar, S. 1997. "Economic Development of the Arab Countries : Selected Issues." In. USA: INTERNATIONAL MONETARY FUND.
- El Anshasy, A. A., and Katsaiti, M.-S. 2013. "Natural resources and fiscal performance: Does good governance matter?" *Journal of Macroeconomics* 37 no. 0: 285-98.
- El Enbaby, H., and Galal, R. 2015. "Inequality of Opportunity in Individuals' Wages and Households' Assets in Egypt." " *Economic Research Forum Working Paper Series No. Vol. 942. 2015.*
- Elbadawi, I., and Gelb, A. 2010. "Oil, economic diversification and development in the Arab World." In *Economic Research Forum Policy Research Report*.
- Elbadawi, I., and Soto, R. 2012. "Resource rents, political institutions and economic growth." *ERF Working Paper 678*.
- Elhiraika, A., and Ndikumana, L. 2007. "Reserves accumulation in African countries: sources, motivations, and effects." In: Working Paper, University of Massachusetts, Department of Economics.
- Elmendorf, D. W., and Gregory Mankiw, N. 1999. "Chapter 25 Government debt." In *Handbook of macroeconomics*: Elsevier.
- Emara, N. 2014. "Governance and Economic Growth: Interpretations for MENA Countries." *Topics in Middle Eastern and African Economies* 16 no. 2.
- Emara, N., and Jhonsa, E. 2011. "Governance and Economic Growth: The Case of the Middle East and North African Countries." In *Proceedings of the Northeast Business & Economics Association*. Philadelphia: Northeast Business & Economics Association.
- Eminer, F. 2015. "The impact of budget deficit on economic growth in North Cyprus." In *WEI International Academic Conference Proceedings*, ed. Institute, T. W. E. Vienna, Australia.
- Erkoc , T. E. 2019. "Islam and economics in the political sphere: a critical evaluation of the AKP era in Turkey." *Southeast European and Black Sea Studies*: 1-16.
- ESCWA. 2017. "The Innovation Landscape in Arab Countries : A Critical Analysis." In: Economic and Social Commission for Western Asia (ESCWA).
- Estache, A., and Garsous, G. 2012. "The impact of infrastructure on growth in developing countries." *IFC Economics Notes* 1.
- European Commission. 2005. "Handbook on promoting good governance in EC development and co-operation." In: European Commission.
- Evrensel, A. Y. 2010. "Corruption, growth, and growth volatility." *International Review of Economics & Finance* 19 no. 3: 501-14.
- Fabro, G., and Aixala, J. 2012. "Direct and Indirect Effects of Economic and Political Freedom on Economic Growth." *Journal of Economic Issues* 46 no. 4: 1059-80.

- FAO. 2013. "Statistical Yearbook 2013: World Food and Agriculture." In. Rome: Food and Agriculture Organization of the United Nations.
- Faria, J. R., and McAdam, P. 2015. "Macroeconomic adjustment under regime change: From social contract to Arab Spring." *Journal of International Money and Finance* 56: 1-22.
- Farr, W. K., Lord, R. A., and Wolfenbarger, J. L. 1998. "Economic freedom, political freedom, and economic well-being: a causality analysis." *Cato Journal* 18: 247.
- Fayissa, B., and Nsiah, C. 2010. "The Impact of Governance on Economic Growth: Further Evidence for Africa." *Middle Tennessee State University Department of Economics and Finance Working Paper Series*.
- Fayissa, B., and Nsiah, C. 2013. "The impact of governance on economic growth in Africa." *Journal of Developing Areas* 47 no. 1: 91-108.
- Fearon, J. D. 2011. "Governance and civil war onset." *World Development Report*: 6406082-1283882418764.
- Fedderke, J. W. 2006. *International Benchmarking of Infrastructure Performance in the Southern African Customs Union Countries*: World Bank Publications.
- Feng, Y. 2005. *Democracy, governance, and economic performance: Theory and evidence*: Mit Press.
- Fernández, A. I., González, F., and Suárez, N. 2010. "How institutions and regulation shape the influence of bank concentration on economic growth: International evidence." *International Review of Law and Economics* 30 no. 1: 28-36.
- Fethi, S. 2003. "Economic growth in a small island economy: the case of Cyprus, 1960-1995." In *Department of Economics*: University of Leicester.
- Fidrmuc, J. 2003. "Economic reform, democracy and growth during post-communist transition." *European Journal of Political Economy* 19 no. 3: 583-604.
- Filiu, J.-P. 2011. *The Arab revolution: ten lessons from the democratic uprising*: Oxford University Press.
- Fink, G., Haiss, P. R., and Hristoforova, S. 2004. "Growth triggers in the European Union " In *Advances in macroeconomic modeling*" Nomos, Baden-Baden.
- Fischer, S. 1993. "The role of macroeconomic factors in growth." *Journal of Monetary Economics* 32 no. 3: 485-512.
- Fofack, H. 2009. "Causality between external debt and capital flight in Sub-Saharan Africa."
- Freedom House. 2015. <https://freedomhouse.org/> (accessed 20/3/2015).
- Friedman, B. M. 2011. "Economics: A moral inquiry with religious origins." *American Economic Review* 101 no. 3: 166-70.
- Friedman, M. 2009. *Capitalism and freedom*: University of Chicago press.
- Futagami, K., Morita, Y., and Shibata, A. 1993. "Dynamic analysis of an endogenous growth model with public capital." *The Scandinavian Journal of Economics*: 607-25.

- Gagliardi, F. 2008. "Institutions and economic change: A critical survey of the new institutional approaches and empirical evidence." *The Journal of Socio-Economics* 37 no. 1: 416-43.
- Gani, A. 2009. "Technological achievement, high technology exports and growth." *Journal of Comparative International Management* 12 no. 2.
- Gani, A. 2011. "Governance and Growth in Developing Countries." *Journal of Economic Issues* 45 no. 1: 19-39.
- Gelman, A., and Stanig, P. 2014. "Corruption Perceptions Index 2014: Technical Methodology Note." In. Berlin, Germany: Transparency International
- Gengenbach, C., Palm, F. C., and Urbain, J.-P. 2006. "Cointegration Testing in Panels with Common Factors*." *Oxford Bulletin of Economics and Statistics* 68: 683-719.
- Ghosh Banerjee, S., and Portale, E. 2014. "Tracking Access to Electricity." In: The World Bank group.
- Ghosh, S. 2016. "Political transition and bank performance: How important was the Arab Spring?" *Journal of Comparative Economics* 44 no. 2: 372-82.
- Giavazzi, F., and Tabellini, G. 2005. "Economic and political liberalizations." *Journal of Monetary Economics* 52 no. 7: 1297-330.
- Glaeser, E. L., La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. 2004. "Do Institutions Cause Growth?" *Journal of Economic Growth* 9 no. 3: 271-303.
- Globerman, S., and Shapiro, D. 2002. "Global foreign direct investment flows: The role of governance infrastructure." *World Development* 30 no. 11: 1899-919.
- Godinez, J. R., and Liu, L. 2015. "Corruption distance and FDI flows into Latin America." *International Business Review* 24 no. 1: 33-42.
- Goldsmith, R. W. 1969. *Financial structure and development*: New Haven, CT: Yale University Press.
- Goldstone, J. A. 2011. "Understanding the revolutions of 2011: weakness and resilience in Middle Eastern autocracies." *Foreign Aff.* 90: 8.
- Graves, M. F., Baumann, J. F., Blachowicz, C. L., Manyak, P., Bates, A., Ciepły, C., Davis, J. R., and Von Gunten, H. 2014. "Words, words everywhere, but which ones do we teach?" *The Reading Teacher* 67 no. 5: 333-46.
- Green, P. E. 2015. *Enterprise Risk Management: A Common Framework for the Entire Organization*: Elsevier Inc.
- Greene, W. H. 2012. *Econometric analysis*. Upper Saddle River, NJ :: Pearson Prentice Hall.
- Greenwood, S. 2008. "Bad for business? Entrepreneurs and democracy in the Arab world." *Comparative Political Studies* 41 no. 6: 837-60.
- Greiner, A. 2010. "Public debt and the dynamics of economic growth." *Analysis of economics and finance* 15 no. 1: 185-204.
- Greiner, A. 2011. "Economic growth, public debt and welfare: Comparing three budgetary rules." *German Economic Review* 12 no. 2: 205-22.

- Grigorian, D., and Kock, U. 2014. "Inflation and Conflict in Iraq: The Economics of Shortages Revisited." *Review of Middle East Economics and Finance* 10 no. 2: 101-22.
- Grogan, L., and Moers, L. 2001. "Growth empirics with institutional measures for transition countries." *Economic Systems* 25 no. 4: 323-44.
- Guasch, J. L., and Hahn, R. W. 1999. "The costs and benefits of regulation: implications for developing countries." *The World Bank Research Observer* 14 no. 1: 137-58.
- Guerreiro, M. S., Rodrigues, L. L., and Craig, R. 2012. "Voluntary adoption of International Financial Reporting Standards by large unlisted companies in Portugal – Institutional logics and strategic responses." *Accounting, Organizations and Society* 37 no. 7: 482-99.
- Guetat, I. 2006. "The Effects of Corruption on Growth Performance of the MENA Countries." *Journal of Economics and Finance* 30 no. 2: 208-21.
- Gujarati, D. 2004. *Basic Econometrics*. New York: McGraw-Hill.
- Gujarati, D. 2014. *Econometrics by example*: Palgrave Macmillan.
- Gultekin, M. N., and Gultekin, N. B. 1983. "Stock market seasonality: International evidence." *Journal of Financial Economics* 12 no. 4: 469-81.
- Gupta, S., Davoodi, H., and Alonso-Terme, R. 2002. "Does corruption affect income inequality and poverty?" *Economics of Governance* 3 no. 1: 23-45.
- Gurvich, E. 2016. "Institutional constraints and economic development." *Russian Journal of Economics* 2 no. 4: 349-74.
- Guzman, M., Ocampo, J. A., and Stiglitz, J. E. 2018. "Real exchange rate policies for economic development." *World Development* 110: 51-62.
- Gylfason, T. 2002. "Natural resources and economic growth: what is the connection?" In *Fostering Sustainable Growth in Ukraine*: Springer.
- Gylfason, T., and Radetzki, M. 1985. *Does devaluation make sense in the least developed countries*: JSTOR.
- Gylfason, T., and Schmid, M. 1983. "Does devaluation cause stagflation?" *Canadian Journal of Economics*: 641-54.
- Habib, M. M., Mileva, E., and Stracca, L. 2017. "The real exchange rate and economic growth: Revisiting the case using external instruments." *Journal of International Money and Finance* 73: 386-98.
- Hagelstein, R. 2008. "Explaining the violence pattern of the Algerian civil war." In: *Households in Conflict Network*.
- Haggard, S., and Tiede, L. 2011. "The Rule of Law and Economic Growth: Where are We?" *World Development* 39 no. 5: 673-85.
- Hahn, J., and Hausman, J. 2002. "Notes on bias in estimators for simultaneous equation models." *Economics Letters* 75 no. 2: 237-41.
- Haidar, J. I. 2012. "The impact of business regulatory reforms on economic growth." *Journal of the Japanese and International Economies* 26 no. 3: 285-307.

- Hall, J. C., Sobel, R. S., and Crowley, G. R. 2010. "Institutions, Capital, and Growth." *Southern Economic Journal* 77 no. 2: 385-405.
- Hall, R. E., and Jones, C. I. 1999. "Why do some countries produce so much more output per worker than others?" *The quarterly journal of economics* 114 no. 1: 83-116.
- Hall, S. G., and Ahmad, M. 2012. "Institutions-growth spatial dependence: An empirical test." *Procedia-Social and Behavioral Sciences* 65: 925-30.
- Hammoud, J. A. 2011. "Toward a Framework for Arab Economic Reform: Learning from the Evidence." In *Globalisation, Democratisation and Radicalisation in the Arab World*: Springer.
- Handoussa, H. A., and El Oraby, N. 2004. *Civil service wages and reform: the case of Egypt*: Egyptian Center for Economic Studies.
- Hanushek, E. A., Woessmann, L., Jamison, E. A., and Jamison, D. T. 2008. "Education and economic growth." *Education Next* 8 no. 2.
- Härdle, W., and Simar, L. 2007. *Applied multivariate statistical analysis*: Springer.
- Harik, I. 2001. "Economic Policy and Performance in the Arab World / Forcing Freedom: Political Control of Privatization and Economic Opening in Egypt and Tunisia." *The Middle East Journal* 55 no. 4: 699-701.
- Harrigan, J., and El-Said, H. 2011. *Globalisation, democratisation and radicalisation in the Arab world*: Springer.
- Hasan, I., and Tucci, C. L. 2010. "The innovation–economic growth nexus: Global evidence." *Research Policy* 39 no. 10: 1264-76.
- Hausman, J. A. 1978. "Specification tests in econometrics." *Econometrica: Journal of the Econometric Society*: 1251-71.
- Havranek, T., Horvath, R., and Zeynalov, A. 2016. "Natural Resources and Economic Growth: A Meta-Analysis." *World Development* 88: 134-51.
- Hazen, T. A. 2016. "Defect or defend? Explaining military responses during the Arab uprisings." In: Loyola University Chicago.
- Helfer, H. 2017. "Democratic Institutions and Prosperity: The Special Case of the MENA Countries." In *The 37th Annual Meeting of the Middle East Economic Association*, . Chicago.
- Heller, H. R. 1966. "Optimal international reserves." *The Economic Journal* 76 no. 302: 296-311.
- Heo, U., and Tan, A. C. 2001. "Democracy and economic growth: A causal analysis." *Comparative Politics* 33 no. 4: 463-73.
- Hesse, H. 2009. "Export diversification and economic growth." *Breaking into new markets: emerging lessons for export diversification*: 55-80.
- Heydemann, S. 2018. "Civil War, Economic Governance & State Reconstruction in the Arab Middle East." *Dædalus* 147 no. 1: 48-63.
- Higgins, J. P., and Green, S. 2008. *Cochrane handbook for systematic reviews of interventions*: Wiley Online Library.

- Hinnebusch, R. 2006. "Authoritarian persistence, democratization theory and the Middle East: An overview and critique." *Democratization* 13 no. 3: 373-95.
- Hissouf, A. 2014. "Moroccan Soft Revolution in the Era of the Arab Spring: Reforms, Assessment, and Prospects." In. Ann Arbor: Walden University.
- Hochman, D. 2009. *The dictator's dilemma: Rule-of-law reforms in the Middle East and North Africa, 1960–2005*: Columbia University.
- Hoechle, D. 2007. "Robust standard errors for panel regressions with cross-sectional dependence." *Stata journal* 7 no. 3: 281.
- House Freedom. 2014. "Freedom in the World 2014 Methodology." In. Washington, DC House Freedom,.
- Hsiao, C. 2014. *Analysis of panel data*: Cambridge university press.
- Huang, C.-J., and Ho, Y.-H. 2017. "Governance and economic growth in Asia." *The North American Journal of Economics and Finance* 39: 260-72.
- Huettner, F., and Sunder, M. 2012. "Axiomatic arguments for decomposing goodness of fit according to Shapley and Owen values." *Electronic Journal of Statistics* 6: 1239-50.
- Hungerman, D. M. 2005. "Are church and state substitutes? Evidence from the 1996 welfare reform." *Journal of public Economics* 89 no. 11-12: 2245-67.
- Hussain, M. E., Haque, M., and Igwike, R. S. 2015. "Relationship between Economic Growth and Debt: An Empirical Analysis for Sub-Saharan Africa." *Journal of Economics and Political Economy* 2 no. 2: 262-75.
- Huynh, K. P., and Jacho-Chávez, D. T. 2009. "Growth and governance: A nonparametric analysis." *Journal of Comparative Economics* 37 no. 1: 121-43.
- Hvidt, M. 2011. "Economic and Institutional Reforms in the Arab Gulf Countries." *The Middle East Journal* 65 no. 1: 85-102.
- Ianchovichina, E., Estache, A., Foucart, R., Garsous, G., and Yepes, T. 2013. "Job Creation through Infrastructure Investment in the Middle East and North Africa." *World Development* 45: 209-22.
- Iannaccone, L. R., and Bainbridge, W. S. 2010. "Economics of religion." *The Routledge Companion to the Study of Religion*: 461-75.
- ILO, U. 2015. "Macroeconomic stability, inclusive growth and employment." In *UN system task team on the post*: UNCTAD , UNDESA and WTO.
- Im, K. S., Pesaran, M. H., and Shin, Y. 2003. "Testing for unit roots in heterogeneous panels." *Journal of Econometrics* 115 no. 1: 53-74.
- Imbs, J., and Wacziarg, R. 2003. "Stages of diversification." *The American economic review* 93 no. 1: 63-86.
- IMF. 2003. "Transcript of an IMF Economic Forum - Fulfilling a Promise: Reform Prospects in the MENA region." In *IMF Economic Forum*. Washington DC.

- IMF. 2014. "Sustaining long-run growth and macroeconomic stability in low-income countries- the role of structural transformation and diversification." In. Washington, D.C: The International Monetary Fund
- Iqbal, F., and Nabli, M. K. 2004. "Trade, Foreign Direct Investment, and Development in the Middle East and North Africa." *World Bank, Washington, DC.*
- Ismail, N. W., and Mahyideen, J. M. 2015. "The Impact of Infrastructure on Trade and Economic Growth in Selected Economies in Asia." In *ADB Working Paper 553.*
- Ismail, S. 2015. "Accountability Practices of Islamic Banks: A Stakeholders' Perspective." In: Plymouth.
- ITU. 2012. "ICT Adoption and Prospects in the Arab Region." In. Geneva: International Telecommunication Union (ITU)
- Iyer, S. 2016. "The new economics of religion." *Journal of economic literature* 54 no. 2: 395-441.
- Iyer, S., Velu, C., and Mumit, A. 2014. "Communication and marketing of services by religious organizations in India." *Journal of Business Research* 67 no. 2: 59-67.
- Iyigun, M. 2008. "Luther and suleyman." *The quarterly journal of economics* 123 no. 4: 1465-94.
- Izquierdo Brichs, F. 2012. "Political Regimes in the Arab World Society and the Exercise of Power." In. Hoboken :: Taylor and Francis.
- Jabbara, J. G. 1989. *Bureaucracy and development in the Arab world*: Springer.
- Jacobs, S. 2004. "Governance of Asian Utilities: New Regulators Struggle in Difficult Environments." *The governance brief* no. 10.
- Jalilian, H., Kirkpatrick, C., and Parker, D. 2007. "The Impact of Regulation on Economic Growth in Developing Countries: A Cross-Country Analysis." *World Development* 35 no. 1: 87-103.
- Jaumotte, M. F., and Sodsriwiboon, P. 2010. *Current account imbalances in the southern euro area*: International Monetary Fund.
- Jaunky, V. C. 2013. "Democracy and Economic Growth in Sub-Saharan Africa: A Panel Data Approach." *Empirical Economics* 45 no. 2: 987-1008.
- Jelassi, T., A. B. Zeghal, and 2015., T. M. 2015. "North Africa-Working paper-Fundamentally changing the way we educate students in the Middle East and North Africa (MENA) region." In.
- Jensen, N., and Wantchekon, L. 2004. "Resource wealth and political regimes in Africa." *Comparative Political Studies* 37 no. 7: 816-41.
- Johnson, D. G. 1999. "Population and economic development." *China Economic Review* 10 no. 1: 1-16.
- Johnson, D. H. 2011. *The root causes of Sudan's civil wars: Peace or truce*: Boydell & Brewer Ltd.
- Jones, C. 1998. *Introduction to economic growth* New York: W. W. Norton & Company.
- Joya, O. 2015. "Growth and volatility in resource-rich countries: Does diversification help?" *Structural Change and Economic Dynamics* 35: 38-55.

- Jreisat, J. 2001. "Bureaucratization of the Arab World: incompatible influences." In *Handbook of comparative and development public administration (2nd ed.)*: In A. Farazmand (Ed.), NY: Marcel Dekker.
- Jreisat, J. E. 1997. *Politics without process: Administering development in the Arab world*: Lynne Rienner Publishers.
- Justesen, M. K. 2008. "The effect of economic freedom on growth revisited: New evidence on causality from a panel of countries 1970-1999." *European Journal of Political Economy* 24 no. 3: 642-60.
- Kähkönen, S., and Lanyi, A. 2000. *Institutions, Incentives and Economic Reforms in India*: Sage.
- Kalyoncu, H., Artan, S., Tezekici, S., and Ozturk, I. 2008. "Currency devaluation and output growth: an empirical evidence from OECD countries." *International Research Journal of Finance and Economics* 14 no. 2: 232-38.
- Kamara, Y. U. 2014. "Essays on the Effects of Foreign Direct Investment on Economic Growth and Welfare: The Case of Sub-Saharan Africa." In: University of Kansas.
- Kamel, O. A. 1998. "The positives and negatives of Economic reform programs in Arab States." In *Arab trade and investment*. Cairo: League of Arab States.
- Kaminsky, G. L., and Pereira, A. 1996. "The Debt Crisis: Lessons of the 1980s for the 1990s." *Journal of Development Economics* 50 no. 1: 1-24.
- Kandil, M. 2009. "Determinants of institutional quality and their impact on economic growth in the MENA region." *International Journal of Development Issues* 8 no. 2: 134-67.
- Kao, C. 1999. "Spurious regression and residual-based tests for cointegration in panel data." *Journal of Econometrics* 90 no. 1: 1-44.
- Kar, M., Nazlıoğlu, Ş., and Ağır, H. 2011. "Financial development and economic growth nexus in the MENA countries: Bootstrap panel granger causality analysis." *Economic Modelling* 28 no. 1: 685-93.
- Karahan, Ö., and Çolak, O. 2017. "Financial Capital Inflows, Current Account Deficit and Economic Growth in Turkey." *European Financial Systems* 2017 300.
- Karam, F., and Zaki, C. 2016. "Why Can't MENA Countries Trade More? The Curse of Bad Institutions." *Economic Research Forum Working Papers. No. 1148*.
- Kasidi, F., and Said, A. M. 2013. "Impact of external debt on economic growth: A case study of Tanzania." *Advances in Management and Applied Economics* 3 no. 4: 59.
- Kaufmann, D. 2006. "The Governance Gap in the Arab Countries: What Does the Data Say?" In *Institutions and Economic Growth in the Arab Countries*. Abu Dhabi, United Arab Emirates: Global Programs and Governance, World Bank Institute.
- Kaufmann, D. 2009. "Governance Matters VIII: Aggregate and Individual Governance Indicators 1996-2008."
- Kaufmann, D. 2011. "Governance and the arab world transition: reflections, empirics and implications for the international community." *Global Economy and Development, Brookings Institution* 28.
- Kaufmann, D., and Kraay, A. 2008. "Governance indicators: Where are we, where should we be going?" *The World Bank Research Observer* 23 no. 1: 1-30.

- Kaufmann, D., Kraay, A., and Mastruzzi, M. 2004. "Governance matters III: Governance indicators for 1996, 1998, 2000, and 2002." *The World Bank Economic Review* 18 no. 2: 253-87.
- Kaufmann, D., Kraay, A., and Mastruzzi, M. 2005. "Governance matters IV: governance indicators for 1996-2004." *World Bank policy research working paper* no. 3630.
- Kaufmann, D., Kraay, A., and Mastruzzi, M. 2006. "Governance matters V: aggregate and individual governance indicators for 1996 - 2005." *World Bank policy research working paper* no. 4012.
- Kaufmann, D., Kraay, A., and Mastruzzi, M. 2007. "Governance matters VI: aggregate and individual governance indicators." *World Bank policy research working paper* 4280.
- Kaufmann, D., Kraay, A., and Mastruzzi, M. 2010. "The worldwide governance indicators: methodology and analytical issues." *World Bank policy research working paper* no. 5430.
- Kaufmann, D., Kraay, A., and Zoido-Lobato, P. 1999. "Governance matters." *World Bank policy research working paper*.
- Keefer, P. 2007. "Clientelism, credibility, and the policy choices of young democracies." *American journal of political science* 51 no. 4: 804-21.
- Khamfula, Y. 2007. "Foreign Direct Investment and Economic Growth in EP and IS Countries: The Role of Corruption." *World Economy* 30 no. 12: 1843-54.
- Khan, M. S., and Senhadji, A. S. 2003. "Financial Development and Economic Growth: A Review and New Evidence." *Journal of African Economies* 12 no. suppl_2: ii89-ii110.
- Khondker, B. H., Bidisha, S. H., and Razzaque, M. A. 2012. "The exchange rate and economic growth: An empirical assessment on Bangladesh." *International Growth Centre (IGC)*.
- Kidd, J., and Richter, F.-J. 2003. *Corruption and governance in Asia*: Springer.
- Kireyev, A. 2000. "Comparative Macroeconomic Dynamics in the Arab World " In: International Monetary Fund.
- Kiviet, J. F. 1995. "On bias, inconsistency, and efficiency of various estimators in dynamic panel data models." *Journal of Econometrics* 68 no. 1: 53-78.
- Klein, N., and Kyei, A. 2009. "Understanding Inflation in Algeria." In *Selected Issues Paper*: IMF Country Report.
- Knack, S., and Keefer, P. 1995. "Institutions and economic performance: cross-country tests using alternative institutional measures " *Economics & Politics* 7 no. 3: 207-27.
- Knack, S. F. 2006. *Measuring corruption in Eastern Europe and Central Asia: a critique of the cross-country indicators*: World Bank Publications.
- Knutsen, C. H. 2009. "Democracy, dictatorship and technological change." *Governance and Knowledge, Routledge*: 33-48.
- Kodongo, O., and Ojah, K. 2016. "Does infrastructure really explain economic growth in Sub-Saharan Africa?" *Review of Development Finance* 6 no. 2: 105-25.
- Koivu, T. 2002. "Do efficient banking sectors accelerate economic growth in transition countries." In *BOFIT Discussion Paper No. 14/2002*.

- Korayem, K. 1997. "Egypt's economic reform and structural adjustment (ERSAP)." In: Cairo: The Egyptian Center for economic studies.
- Kostiner, J. 2000. *Middle East Monarchies: The Challenge of Modernity*: Lynne Rienner Publishers.
- Kötter, M., Röder, T. J., Schuppert, G. F., and Wolfrum, R. 2015. "Non-State Justice Institutions and the Law." *Decision-Making at the Interface of Tradition, Religion and the State*. New York: Palgrave Macmillan (*Governance and limited statehood*).
- Kuncic, A. 2016. "How Similar are Arab Countries and What are Their Characteristics?"
- Kuran, T. 2010. "The Long Divergence: How Islamic Law Held Back the Middle East." *Islamic Studies* 49 no. 2: 277-89.
- Kuran, T. 2018. "Islam and economic performance: Historical and contemporary links." *Journal of economic literature* 56 no. 4: 1292-359.
- Kurt, S. 2015. "Government Health Expenditures and Economic Growth: A Feder-Ram Approach for the Case of Turkey." *International Journal of Economics and Financial Issues* 5 no. 2.
- Kurzman, C., Werum, R., and Burkhart, R. E. 2002. "Democracy's effect on economic growth: a pooled time-series analysis, 1951–1980." *Studies in comparative international development* 37 no. 1: 3-33.
- Kutan, A. M., Douglas, T. J., and Judge, W. Q. 2009. "Does Corruption Hurt Economic Development?: Evidence from Middle Eastern, North African and Latin American Countries." In *Economic Performance in the Middle East and North Africa: Institutions, Corruption and Reform*. London and New York: Routledge.
- Kwon, H.-j., and Kim, E. 2014. "Poverty Reduction and Good Governance: Examining the Rationale of the Millennium Development Goals." *Development and Change* 45 no. 2: 353-75.
- Lacheheb, M., Med Nor, N., and Baloch, I. 2014. "Health Expenditure, education and Economic Growth in MENA Countries."
- Lake, D. A., and Baum, M. A. 2001. "The invisible hand of democracy: political control and the provision of public services." *Comparative Political Studies* 34 no. 6: 587-621.
- Lam, K. Y. 2011. "Institutions and economic development." In: University of Birmingham.
- Lambertini, L., and Tavares, J. A. 2005. "Exchange Rates and Fiscal Adjustments: Evidence from the OECD and Implications for the EMU." *Contributions in Macroeconomics* 5 no. 1.
- Lamu, A. N., and Olsen, J. A. 2016. "The relative importance of health, income and social relations for subjective well-being: An integrative analysis." *Social Science & Medicine* 152: 176-85.
- Law, S., and Bany-Ariffin, A. N. 2008. "Institutional Infrastructure and Economic Performance: Dynamic Panel Data Evidence." *Transition Studies Review* 15 no. 3: 542-57.
- Law, S. H., Lim, T. C., and Ismail, N. W. 2013. "Institutions and economic development: A Granger causality analysis of panel data evidence." *Economic Systems* 37 no. 4: 610-24.
- le Roux, P., and Gorchach, V. 2011. "An Econometric Analysis of the Impact of Economic Freedom on Economic Growth in the SADC." *Journal for Studies in Economics and Econometrics* 35 no. 2: 1-14.
- Lederman, D., and Maloney, W. F. 2003. "R&D and development."

- Lee, K., and Kim, B.-Y. 2009. "Both Institutions and Policies Matter but Differently for Different Income Groups of Countries: Determinants of Long-Run Economic Growth Revisited." *World Development* 37 no. 3: 533-49.
- Lerner, D. 1958. "The passing of traditional society: Modernizing the Middle East." In.
- Levin, A., Lin, C.-F., and James Chu, C.-S. 2002. "Unit root tests in panel data: asymptotic and finite-sample properties." *Journal of Econometrics* 108 no. 1: 1-24.
- Levine, R., and Renelt, D. 1992. "A sensitivity analysis of cross-country growth regressions." *The American economic review*: 942-63.
- Lewis, W. A. 2013. "The causes of unemployment in less developed countries and some research topics." *International Labour Review* 152 no. s1: 66-73.
- Li, T., and Wang, Y. 2016. "Growth channels of human capital: A Chinese panel data study." *China Economic Review*.
- Lim, M. E.-G. 2001. *Determinants of, and the relation between, foreign direct investment and growth: a summary of the recent literature*: International Monetary Fund.
- Lipset, S. M. 1959. "Some social requisites of democracy: Economic development and political legitimacy." *American political science review* 53 no. 01: 69-105.
- Lipsey, R. E. 2004. "Home-and host-country effects of foreign direct investment." In *Challenges to globalization: Analyzing the economics*: University of Chicago Press.
- Liu, C., and Armer, J. M. 1993. "Education's effect on economic growth in Taiwan." *Comparative Education Review* 37 no. 3: 304-21.
- Lockheed, M. E., Jamison, T., and Lau, L. J. 1980. "Farmer education and farm efficiency: A survey." *Economic Development and Cultural Change* 29 no. 1: 37-76.
- Looney, R. 2009. "ECONOMIC CONDITIONS-Arab Economies in the Twenty-First Century." *The Middle East Journal* 63 no. 3: 515-16.
- Looney, R. E. 2013. "Governance Constrained Growth in the MENA." In *Governance in the Middle East and North Africa: A handbook.*, ed. Kadhim, A.: Routledge.
- Lorentzen, P., McMillan, J., and Wacziarg, R. 2008. "Death and development." *Journal of Economic Growth* 13 no. 2: 81-124.
- Loungani, P., and Swagel, P. 2001. "Sources of inflation in developing countries (No. 1-198)." In: International Monetary Fund.
- Lucas, R. E. 1988. "On the mechanics of economic development." *Journal of Monetary Economics* 22 no. 1: 3-42.
- Lucas, R. E. 1990. "Why doesn't capital flow from rich to poor countries?" *The American economic review* 80 no. 2: 92-96.
- Lundström, S. 2005. "The effect of democracy on different categories of economic freedom." *European Journal of Political Economy* 21 no. 4: 967-80.
- Mahmoudzadeh, M., Sadeghi, S., and Sadeghi, S. 2017. "Fiscal spending and crowding out effect: a comparison between developed and developing countries." *Institutions and Economies*: 31-40.

- Makdisi, S., Fattah, Z., and Limam, I. 2006. "Chapter 2 Determinants of Growth in the MENA Countries." In *Contributions to Economic Analysis*, ed. Jeffrey, B. N. and Pesaran, M. H.: Elsevier.
- Malik, A., and Awadallah, B. 2013. "The Economics of the Arab Spring." *World Development* 45 no. 0: 296-313.
- Malki, M. 2014. "Understanding the rule of law in Arab countries first requires understanding." *Arab Human Development in the Twenty-First Century: The Primacy of Empowerment*: 27.
- Manama, B. 2016. "Economic Diversification in Oil-Exporting Arab Countries." In *Annual Meeting of Arab Ministers of Finance*.
- Mankiw, N. G., Romer, D., and Weil, D. N. 1992. "A contribution to the empirics of economic growth." *The quarterly journal of economics* 107 no. 2: 407-37.
- Mansfeld, Y., and Winckler, O. 2015. "Can this be spring? Assessing the impact of the "Arab Spring" on the Arab tourism industry." *Turizam: međunarodni znanstveno-stručni časopis* 63 no. 2: 205-23.
- Mansfield, E., and Romeo, A. 1980. "Technology transfer to overseas subsidiaries by US-based firms." *The quarterly journal of economics*: 737-50.
- Maradana, R. P., Pradhan, R. P., Dash, S., Gaurav, K., Jayakumar, M., and Chatterjee, D. 2017. "Does innovation promote economic growth? Evidence from European countries." *Journal of Innovation and Entrepreneurship* 6 no. 1: 1.
- Marr, P. 2018. *The modern history of Iraq*: Routledge.
- Marshall, M., Jagers, K., and Gurr IV, T. 2012. *Polity IV project: political regime characteristics and transitions, 1800–2010. Dataset user's manual*. Vienna, VA: Center for Systemic Peace, 2011.
- Marshall, M. G., and Jagers, K. 2002. "Polity IV project: Political regime characteristics and transitions, 1800-2002." In. Vienna, VA USA: The Center for Systemic Peace,.
- Martinez, V., and Sancher-Robles, B. 2009. "Macroeconomic stability and growth in Eastern Europe." In *Macroeconomics and beyond: Essays in honour of Wim Meeusen*.
- Matallah, S., and Matallah, A. 2015. "Oil Rents and Economic Growth in Oil-Abundant MENA Countries: Governance is the Trump Card to Escape the Resource Trap." *Topics in Middle Eastern and African Economies* 18 no. 2: 87-116.
- Mátyás, L., and Sevestre, P. 2006. *The Econometrics of panel data*: Springer.
- Mátyás, L., and Sevestre, P. 2008. *The econometrics of panel data: fundamentals and recent developments in theory and practice*: Springer Science & Business Media.
- Mauro, P. 1995. "Corruption and growth." *The quarterly journal of economics* 110 no. 3: 681-712.
- Maurseth, P. B. 2007. "Governance Indicators: A Users' Guide." In: Oslo Governance Centre, Oslo
- Maxwell, J. A. 2004. "Causal explanation, qualitative research, and scientific inquiry in education." *Educational researcher* 33 no. 2: 3-11.
- McCawley, P. 2005. "Governance in Indonesia: Some Comments, ADBI Research Policy Brief No. 17." In *Governance, Tokyo*.

- McCleary, R. M., and Barro, R. J. 2006. "Religion and economy." *Journal of Economic Perspectives* 20 no. 2: 49-72.
- McMahon, W. W. 1998. "Education and growth in East Asia." *Economics of Education Review* 17 no. 2: 159-72.
- Meier, G. M. 2001. *The old generation of development economists and the new*: Oxford University Press, New York.
- Mejía, J. F. 2011. "Export Diversification, International Trade, and Economic Growth: A Survey of the Literature." In *Export Diversification and Economic Growth*: Springer.
- Méndez, F., and Sepúlveda, F. 2006. "Corruption, growth and political regimes: cross country evidence." *European Journal of Political Economy* 22 no. 1: 82-98.
- Messaoud, B., and Teheni, Z. E. G. 2014. "Business regulations and economic growth: What can be explained?" *International Strategic Management Review* 2 no. 2: 69-78.
- Milner, H. V., and Kubota, K. 2005. "Why the move to free trade? Democracy and trade policy in the developing countries." *International organization* 59 no. 1: 107-43.
- Mingat, A., and Tan, J.-P. 1996. "The full social returns to education: Estimates based on Countries Economic Growth Performance." In *Human Capital Development Papers, The World Bank*. Washington DC.
- Mirkin, B. 2010. "Population levels, trends and policies in the Arab region: challenges and opportunities." In. USA: United Nations Development Programme, Regional Bureau for Arab States
- Mohieldin, M. 1995. "On financial liberalisation in LDCs: the case of Egypt, 1960-93." In *Dept. of Economics*: University of Warwick.
- Mondial, B. 2002. "Private Sector Development Strategy: Directions for the World Bank Group."
- Moosa, I. A. 1997. "A cross-country comparison of Okun's coefficient." *Journal of Comparative Economics* 24 no. 3: 335-56.
- Morozumi, A., and Veiga, F. J. 2016. "Public spending and growth: The role of government accountability." *European Economic Review* 89: 148-71.
- Morrison, D. G., and Stevenson, H. M. 1971. "Political instability in independent black Africa: more dimensions of conflict behavior within nations." *Journal of Conflict Resolution* 15 no. 3: 347-68.
- Moulin, H. 1991. *Axioms of cooperative decision making*: Cambridge university press.
- Moustafa, T. 2007. *The struggle for constitutional power: law, politics, and economic development in Egypt*: Cambridge University Press.
- Murshed, H., and Nakibullah, A. 2015. "Price level and inflation in the GCC countries." *International Review of Economics & Finance* 39 no. Supplement C: 239-52.
- Mussa, M. 1987. "Macroeconomic policy and trade liberalization: some guidelines." *The World Bank Research Observer* 57 no. 6: 61-77.
- Nabli, M. K. 2007. *Breaking the Barriers to Higher Economic Growth: Better Governance and Deeper Reforms in the Middle East and North Africa*. Washington, D.C: World Bank.

- Nafziger, E. W. 2006. *Economic development*. Cambridge ;; Cambridge University Press.
- Nagaoka, S. 2012. "Critical overview of the history of Islamic economics: formation, transformation, and new horizons." *Asian and African Area Studies* 11 no. 2: 114-36.
- Nagel, K. 2015. "Relationships between unemployment and economic growth – the review (results) of the theoretical and empirical research." *Journal of Economics and Management* 20 no. 2.
- Nardo, M., Saisana, M., Saltelli, A., and Tarantola, S. 2005. "Tools for composite indicators building. ." In *Institute for the Protection and Security of the Citizen, JRC Ispra, Italy*: European Commission, .
- Nawaz, S. 2015. "Growth effects of institutions: A disaggregated analysis." *Economic Modelling* 45: 118-26.
- Neaime, S. 2005. "Financial market integration and macroeconomic volatility in the MENA region: an empirical investigation." *Review of Middle East Economics and Finance* 3 no. 3: 231-55.
- Neaime, S., and Gaysset, I. 2017. "Sustainability of macroeconomic policies in selected MENA countries: Post financial and debt crises." *Research in International Business and Finance* 40: 129-40.
- Nguyen, A. D., Dridi, J., Unsal, F. D., and Williams, O. H. 2017. "On the drivers of inflation in Sub-Saharan Africa." *International Economics*.
- Nielsen, L. 2011. "Classifications of countries based on their level of development: How it is done and how it could be done." *IMF Working Papers*: 1-45.
- Nijkamp, P., and Poot, J. 2004. "Meta-analysis of the effect of fiscal policies on long-run growth." *European Journal of Political Economy* 20 no. 1: 91-124.
- North, D. C. 1990. *Institutions, institutional change, and economic performance*. Cambridge ;; Cambridge University Press.
- North, D. C. 2005. *Understanding the process of economic change*. Princeton, N.J. :: Princeton University Press.
- North, D. C. 2009. *Violence and social orders : a conceptual framework for interpreting recorded human history*. Cambridge ;; Cambridge University Press.
- North, D. C., Wallis, J., and Weingast, B. 2008. "Violence and social orders: a conceptual framework for interpreting recorded human history." In *Governance, Growth and Development Decision-making*. Washington, DC: World Bank.
- North, D. C., Wallis, J. J., and Weingast, B. R. 2009. *Violence and social orders: a conceptual framework for interpreting recorded human history*: Cambridge University Press.
- Nosier, S. A. H. 2012. "Estimating the international tourism demand for Egypt:'an econometric approach'." In: University of Hull.
- Nye, J. V., Claus, E., Claus, I., Jones, G., Chen, Q., Goh, C.-C., Sun, B., Xu, L. C., Keefer, P., and Straub, S. 2011. *Asian Development Review: Volume 28, Number 1, 2011*: Asian Development Bank.
- O'Fallon, C. 2003. "Linkages between infrastructure and economic growth." In: The Ministry of Economic Development of New Zealand.
- Odusola, A., and Akinlo, A. 2001. "Output, inflation, and exchange rate in developing countries: An application to Nigeria." *The Developing Economies* 39 no. 2: 199-222.

- OECD. 2001. *Governance in the 21st Century*: Organisation for Economic Co-operation and Development.
- OECD. 2002. *Governance for Sustainable Development*: Organisation for Economic Co-operation and Development.
- OECD. 2007. "Corruption: A Glossary of International Standards in Criminal Law. OECD Glossaries." In: Organisation for Economic Co-operation and Development.
- OECD. 2008. *Making Reforms Succeed Moving Forward with the MENA Investment Policy Agenda*: Organisation for Economic Co-operation and Development.
- OECD. 2010. *Progress in Public Management in the Middle East and North Africa*: Organisation for Economic Co-operation and Development.
- OECD. 2013. *Perspectives on Global Development 2013*: Organisation for Economic Co-operation and Development.
- OECD. 2014. "The rationale for fighting corruption." In: Organisation for Economic Cooperation and Development.
- Okonkwo, C. S., and Odularu, G. O. 2013. "External debt, debt burden and economic growth nexus: empirical evidence and policy lessons " *International Journal of Economics & Business Studies* 3 no. 1.
- Okun, A. 1962. "Potential GNP: Its Measurement and Significance, in American Statistical Association, Proceedings of the Business and Economics Statistics Section; reprinted with slight changes in Arthur M. Okun, *The Political Economy of Prosperity* (Washington, DC: Brookings Institution)."
- Oliva, M.-A., and Rivera-Batiz, L. A. 2002. "Political Institutions, Capital Flows, and Developing Country Growth: An Empirical Investigation." *Review of Development Economics* 6 no. 2: 248-62.
- Oman, C., and Arndt, C. 2006. *Uses and Abuses of Governance Indicators*: OECD Publishing.
- Omran, M. M. A. 1999. "Impact of Egypt's economic reform programme on the stock market performance." In: Plymouth.
- Oni, L. B. 2014. "Analysis of the growth impact of health expenditure in Nigeria." *IOSR Journal of Economics and Finance* 3 no. 1: 77-84.
- Oskooee, M. B., and Kandil, M. 2007. "Real and nominal effective exchange rates in MENA countries: 1970–2004." *Applied Economics* 39 no. 19: 2489-501.
- Ozcan, C. C., Aslan, M., and Nazlioglu, S. 2017. "Economic freedom, economic growth and international tourism for post-communist (transition) countries: A panel causality analysis." *Theoretical & Applied Economics* 24 no. 2.
- Paldam, M. 2002. "The cross-country pattern of corruption: economics, culture and the seesaw dynamics." *European Journal of Political Economy* 18 no. 2: 215-40.
- Paldam, M., and Gundlach, E. 2008. "Two views on institutions and development: the grand transition vs the primacy of institutions." *Kyklos* 61 no. 1: 65-100.
- Parker, D. 1999. "Regulation of privatised public utilities in the UK: performance and governance." *International Journal of public sector management* 12 no. 3: 213-36.

- Parker, D., and Kirkpatrick, C. 2005. "Privatisation in developing countries: A review of the evidence and the policy lessons." *Journal of Development Studies* 41 no. 4: 513-41.
- Parlee, B. L. 2015. "Avoiding the resource curse: indigenous communities and Canada's oil sands." *World Development* 74: 425-36.
- Parthasarathy, B. 1994. "Marxist Theories of Development, the New International Division of Labor, and the Third World." *Berkeley Planning Journal* 9 no. 1.
- Pearson, K. 1901. "LIII. On lines and planes of closest fit to systems of points in space." *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science* 2 no. 11: 559-72.
- Pedroni, P. 1999. "Critical Values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors." *Oxford Bulletin of Economics and Statistics* 61 no. S1: 653-70.
- Peev, E., and Mueller, D. C. 2012. "Democracy, Economic Freedom and Growth in Transition Economies." *Kyklos* 65 no. 3: 371-407.
- Pereira, J., and Aubyn, M. S. 2009. "What level of education matters most for growth?: Evidence from Portugal." *Economics of Education Review* 28 no. 1: 67-73.
- Perera, L. D. H., and Lee, G. H. Y. 2013. "Have economic growth and institutional quality contributed to poverty and inequality reduction in Asia?" *Journal of Asian Economics* 27: 71-86.
- Persson, T., and Tabellini, G. 2006. "Democratic capital: The nexus of political and economic change." In: National Bureau of Economic Research.
- Petkovski, M., and Kjosevski, J. 2014. "Does banking sector development promote economic growth? An empirical analysis for selected countries in Central and South Eastern Europe." *Economic Research-Ekonomska Istraživanja* 27 no. 1: 55-66.
- Petrakis, P. E., and Stamatakis, D. 2002. "Growth and educational levels: a comparative analysis." *Economics of Education Review* 21 no. 5: 513-21.
- Pfeifer, K. 1999. "Parameters of economic reform in North Africa." *Review of African Political Economy* 26 no. 82: 441-54.
- Philippot, L.-M. 2010. "Natural resources and economic development in transition economies." In *international conference Environment and Natural Resources Management in Developing and Transition Economies, Clermont-Ferrand*.
- Piatek, D., Szarzec, K., and Pilc, M. 2013. "Economic Freedom, Democracy and Economic Growth: A Causal Investigation in Transition Countries." *Post-Communist Economies* 25 no. 3: 267-88.
- Ping, H. 2011. "The economic and social effects of real exchange rate_ Evidence from the Chinese provinces." In *International Conference on Social Cohesion and Development*.
- Pissarides, C. A., and Véگانzonès, V. M. A. 2006. "Labor markets and economic growth in the MENA region." *Contributions to Economic Analysis* 278: 137-57.
- Plattner, S. 1989. *Economic anthropology*: Stanford University Press.
- Plümper, T., and Martin, C. W. 2003. "Democracy, government spending, and economic growth: A political-economic explanation of the Barro-effect." *Public Choice* 117 no. 1-2: 27-50.

- Pornwilassiri, S. 2002. "The impact of Economic Reform and Structural Adjustment Programme (ERSAP) and privatisation policy on the role of Egyptian professional women from 1991-2000." In: University of Exeter.
- Porter, M. E., Sachs, J., Cornelius, P. K., McArthur, J. W., and Schwab, K. 2002. *Global Competitiveness Report, 2001-2002*. New York, NY: Oxford University Press
- Pramanik, A. H. 2003. *Economic Freedom and Its Implications for Economic Cooperation Among Muslim Countries*: Kulliyah of Economics & Management Sciences, International Islamic University Malaysia.
- Pramanik, A. H. 2007. "Political Corruption and Its Implications for Development in the Arab World." *Review of Islamic Economics* 11 no. 1: 119-47.
- Presbitero, A. 2008. "The debt-growth nexus in poor countries: A reassessment."
- Pritchett, L. 2001. "Where has all the education gone?" *The World Bank Economic Review* 15 no. 3: 367-91.
- PRS Group. 2011. "ICRG methodology." In: The PRS Group.
- Pushak, T., Tiongson, E., and Varoudakis, A. 2007. "Public finance, governance, and growth in transition economies: Empirical evidence from 1992-2004." *World Bank policy research working paper* 4255.
- Rachdi, H., and Saidi, H. 2015. "Democracy and Economic Growth: Evidence in MENA Countries." *Procedia - Social and Behavioral Sciences* 191: 616-21.
- Rahman, N. H. A. 2012. "the relationship between budget deficit and economic growth from Malaysia's perspective: An ARDL approach." In *International Conference on Economics, Business Innovation*.
- Raj, B., and Baltagi, B. 2012. *Panel data analysis*: Springer Science & Business Media.
- Ranis, G., Stewart, F., and Ramirez, A. 2000. "Economic Growth and Human Development." *World Development* 28 no. 2: 197-219.
- Ranis, G., and Zhao, X. 2013. "Technology and human development." *Journal of Human Development and Capabilities* 14 no. 4: 467-82.
- Rappaport, J. 2000. "How does openness to capital flows affect growth?" *FRB of Kansas City Research Working Paper No. 00-11*.
- Redek, T., and Susjan, A. 2005. "The Impact of Institutions on Economic growth: The Case of Transition Economies." *Journal of Economic Issues* 39 no. 4: 995-1027.
- Resnick, D., and Birner, R. 2006. "Does good governance contribute to pro-poor growth?: A review of the evidence from cross-country studies." In: International Food Policy Research Institute (IFPRI).
- Richter, R. 2015. "Essays on new institutional economics." In.
- Riggs, F. W. 2001. "Bureaucratic links between administration and politics." *PUBLIC ADMINISTRATION AND PUBLIC POLICY* 94: 815-38.
- Rizov, M. 2008. "Institutions, reform policies and productivity growth in agriculture: evidence from former communist countries." *NJAS - Wageningen Journal of Life Sciences* 55 no. 4: 307-23.

- Robb, C. M. 2003. *External debt statistics: guide for compilers and users*: International Monetary Fund.
- Robinson, J. A. 2012. "Elites and institutional persistence." *The role of elites in economic development*: 29-52.
- Rodrik, D. 2000. "Institutions for high-quality growth: what they are and how to acquire them." *Studies in comparative international development* 35 no. 3: 3-31.
- Rodrik, D., and Rigobon, R. 2005. "Rule of law, democracy, openness, and income." *Economics of transition* 13 no. 3: 533-64.
- Rodrik, D., Subramanian, A., and Trebbi, F. 2004. "Institutions rule: the primacy of institutions over geography and integration in economic development." *Journal of Economic Growth* 9 no. 2: 131-65.
- Romer, D. 2012. *Advanced macroeconomics*. New York.
- Romer, P. M. 1986. "Increasing returns and long-run growth." *The journal of political economy*: 1002-37.
- Romer, P. M. 1989. "Increasing returns and new developments in the theory of growth." In: National Bureau of Economic Research.
- Romer, P. M. 1990a. "Endogenous Technological Change." *Journal of Political Economy* 98 no. 5: S71-S102.
- Romer, P. M. 1990b. "Human capital and growth: theory and evidence." In *Carnegie-Rochester Conference Series on Public Policy*: Elsevier.
- Romp, W., and De Haan, J. 2007. "Public capital and economic growth: A critical survey." *Perspektiven der Wirtschaftspolitik* 8 no. S1: 6-52.
- Ross, M. 2003. "Oil, drugs, and diamonds: How do natural resources vary in their impact on civil war." *Beyond greed and grievance: The political economy of armed conflict*: 47-70.
- Rougier, E. 2016. "'Fire in Cairo': Authoritarian–Redistributive Social Contracts, Structural Change, and the Arab Spring." *World Development* 78: 148-71.
- Rousseau, P. L., and Wachtel, P. 2011. "What is happening to the impact of financial deepening on economic growth?" *Economic Inquiry* 49 no. 1: 276-88.
- Roy, D. K. 2006. "Governance, Competitiveness and Growth: The Challenges for Bangladesh."
- Rubin, J. 2017. *Rulers, Religion, and Riches: Why the West got rich and the Middle East did not*: Cambridge University Press.
- Sabri, A. R. 1997. "landmarks of economic reform policies in the Arab countries." In *Face the social consequences of structural adjustment in the Arab world and Latin America*. Cairo, Cairo University, Faculty of Economics and Political Science Conference, Center for the Study and Research of developing countries.
- Sabri, A. R. 2002. *Economic reform programs in the Arab countries : the effects and consequences*. Abu Dhabi: Zayed Center for Coordination and Follow-up.
- Sachs, J. D. 2003. "Institutions don't rule: direct effects of geography on per capita income." In: National Bureau of Economic Research.

- Sachs, J. D., Warner, A., Åslund, A., and Fischer, S. 1995. "Economic reform and the process of global integration." *Brookings papers on economic activity*: 1-118.
- Sachs, J. D., and Warner, A. M. 1995. "Natural resource abundance and economic growth." In: National Bureau of Economic Research.
- Safavian, M. S., Graham, D. H., and Gonzalez-Vega, C. 2001. "Corruption and Microenterprises in Russia." *World Development* 29 no. 7: 1215-24.
- Saha, S., and Ben Ali, M. S. 2017. "Corruption and Economic Development: New Evidence from the Middle Eastern and North African Countries." *Economic Analysis and Policy* 54: 83-95.
- Sahnoun, H., Keefer, P., Schiffbauer, M., Sy, A., and Hussain, S. 2014. *Jobs or Privileges: unleashing the employment potential of the Middle East and North Africa*: World Bank Publications.
- Saif, I. 2009. *The Oil Boom in the GCC Countries, 2002-2008: Old Challenges, Changing Dynamics*: Carnegie Endowment for International Peace.
- Salamey, I. 2015. "Post-Arab Spring: changes and challenges." *Third World Quarterly* 36 no. 1: 111-29.
- Salti, N. 2008. "Oil greasing the wheels: when do natural resources become a blessing?" In *Economic Research Forum Working Papers* 439.
- Salvatore, D. 2012. *International economics*: Wiley Global Education.
- Santos, L. A., and Barrios, E. B. 2011. "Small sample estimation in dynamic panel data models: A simulation study." *American Open Journal of Statistics* 1 no. 02: 58.
- Sarkar, P. 2009. "Does Credit Expansion Matter for Growth? What the Data Show." In *Law Reform and Financial Markets: Institutions and Governance, Institute of Advanced Legal Studies*. London: W G Hart Legal Workshop 2009.
- Sarr, M. 2009. "Essays on resources and institutions." In: UCL (University College London).
- Saunders, M. N., Saunders, M., Lewis, P., and Thornhill, A. 2011. *Research methods for business students, 5/e*: Pearson Education India.
- Sayan, S. 2009. *Economic performance in the Middle East and North Africa: institutions, corruption and reform*: Routledge.
- Schlumberger, O. 2004. "Patrimonial capitalism: Economic reform and economic order in the Arab world." In: Universität Tübingen.
- Schneider, F., and Enste, D. H. 2000. "Shadow economies: size, causes, and consequences." *Journal of economic literature* 38 no. 1: 77-114.
- Schnellenbach, J. A. N. 2007. "Public entrepreneurship and the economics of reform." *Journal of Institutional Economics* 3 no. 2: 183-202.
- Schultz, T. W. 1961. "Investment in human capital." *The American economic review*: 1-17.
- Schumpeter, J. A. 1934a. "The theory of economic development. Cambridge." MA: Harvard.
- Schumpeter, J. A. 1934b. *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*: Transaction publishers.

- Schütt, F. 2003. *The importance of human capital for economic growth*: Inst. für Weltwirtschaft und Internationales Management.
- Schwab, K., and Sala-i-Martin, X. 2015. "The Global Competitiveness Report 2014-2015 " In. Geneva: World Economic Forum.
- Schwartz, W. G. 2004. "Arab Human Development Report 2004: Towards freedom in the Arab world." In. New York: United Nations Development Programme.
- Schwella, E. 2002. "Regulation and competition in South Africa." In *Working Paper no. 18*: Manchester: Centre on Regulation and Competition, University of Manchester.
- Seers, D. 1969. "The meaning of development." *International Development Review* 11 no. (4): 3-4.
- Seers, D. 1979. "The meaning of development." *Development theory: Four critical studies*: 9-30.
- Seethapalli, K., Bramati, M. C., and Veredas, D. 2008. "How relevant is infrastructure to growth in East Asia?"
- Seldadyo, H., Nugroho, E. P., and Haan, J. d. 2007. "Governance and Growth Revisited." *Kyklos* 60 no. 2: 279-90.
- Self, S., and Grabowski, R. 2004. "Does education at all levels cause growth? India, a case study." *Economics of Education Review* 23 no. 1: 47-55.
- Selim, H., and Zaki, C. 2016. "The Institutional Curse of Natural Resources in the Arab World." In *Understanding and Avoiding the Oil Curse in Resource-rich Arab Economies*.
- Sen, A. 1983. "Development: Which way now?" *The Economic Journal*: 745-62.
- Sen, A., and Clapp, J. 2000. "[Development as Freedom: Human Capability & Global Need]." *International Journal* 55 no. 1: 160.
- Sen, K., Pritchett, L., Kar, S., and Raihan, S. 2006. "Democracy versus dictatorship? The political determinants of growth episodes." *ESID Working Paper* 70.
- Serven, L. 2010. "Infrastructure and growth." *The World Bank, DECRG Research Brief*.
- Shaihani, M., Harisb, A., Ismaila, N., and Saida, R. 2011. "Long run and short run effects on education levels: Case in Malaysia." *International Journal of Economic Research* 2 no. 6: 77-87.
- Shapley, L. S. 1953. "A value for n-person games." *Contributions to the Theory of Games* 2 no. 28: 307-17.
- Sheahan, M., and Barrett, C. B. 2014. "Understanding the agricultural input landscape in sub-Saharan Africa: Recent plot, household, and community-level evidence."
- Shera, A., Dosti, B., and Grabova, P. 2014. "Corruption impact on Economic Growth: An empirical analysis." *Journal of Economic Development, Management, IT, Finance & Marketing* 6 no. 2: 57-77.
- Shorrocks, A. F. 2013. "Decomposition procedures for distributional analysis: a unified framework based on the Shapley value." *The Journal of Economic Inequality* 11 no. 1: 99-126.
- Siddiqui, D. A., and Ahmed, Q. M. 2013. "The effect of institutions on economic growth: A global analysis based on GMM dynamic panel estimation." *Structural Change and Economic Dynamics* 24 no. 0: 18-33.

- Silberberger, M., and Königer, J. 2016. "Regulation, trade and economic growth." *Economic Systems* 40 no. 2: 308-22.
- SIWI. 2005. "Making Water a Part of Economic Development: The Economic Benefits of Improved Water Management and Services." In: Stockholm International Water Institute.
- Smilov, D., and Toplak, J. 2008. *Political Finance and Corruption in Eastern Europe the Transition Period*: Ashgate Publishing, Ltd.
- Sokoloff, K. L., and Engerman, S. L. 2000. "History lessons: Institutions, factors endowments, and paths of development in the new world." *The Journal of Economic Perspectives*: 217-32.
- Solow, R. M. 1956. "A contribution to the theory of economic growth." *The quarterly journal of economics*: 65-94.
- Soto, R., and Haouas, I. 2012. "Has the UAE escaped the oil curse." *Economic research forum* Working Paper 728.
- Soubbotina, T. P., and Sheram, K. 2000. *Beyond economic growth: Meeting the challenges of global development*: World Bank Publications.
- Spilimbergo, M. A., Prati, M. A., and Ostry, M. J. D. 2009. *Structural reforms and economic performance in advanced and developing countries*: International Monetary Fund.
- Srholec, M. 2007. "High-tech exports from developing countries: A symptom of technology spurts or statistical illusion?" *Review of world economics* 143 no. 2: 227-55.
- Stella, M. V., and Chikaza, Z. 2013. "An Empirical Investigation of the Applicability of the Debt Overhang Hypothesis in Zimbabwe." *IUP Journal of Applied Economics* 12 no. 4.
- Stewart, F. 2000. *War and Underdevelopment: Volume II: Country Experiences*: Queen Elizabeth House Series i.
- Stewart, J. 2010. "The UK National Infrastructure Plan 2010." *EIB Papers* 15 no. 2: 28-32.
- Stiglitz, J. E. 2002. "Participation and development: Perspectives from the comprehensive development paradigm." *Review of Development Economics* 6: 163-82.
- Stroup, M. D. 2007. "Economic Freedom, Democracy, and the Quality of Life." *World Development* 35 no. 1: 52-66.
- Stroup, M. D. 2008. "Separating the influence of capitalism and democracy on women's well-being." *Journal of Economic Behavior and Organization* 67 no. 3: 560-72.
- Suliman, K. M. 2012. "The determinants of inflation in Sudan." In *AERC Research Paper 243*. Nairobi: African Economic Research Consortium.
- Swan, T. 1956. "Economic growth and capital accumulation." *Economic Record* 32 no. November: 334—61.
- Swiston, A. J., and Barrot, L.-D. 2011. "The role of structural reforms in raising economic growth in Central America." *IMF Working Papers*: 1-20.
- Tabachnick, B. G. 2013. *Using multivariate statistics*. Boston :: Pearson Education.
- Tarran, B. 2019. "The crisis in Yemen: Short of food, short of data?" *Significance* 16 no. 1: 28-28.

Taylor, L., and Rosensweig, J. A. 1984. *Devaluation, Capital Flows and Crowding Out: A Computable General Equilibrium Model with Portfolio Choice for Thailand*: Massachusetts Institute of Technology.

Tebaldi, E., and Elmslie, B. 2013. "Does institutional quality impact innovation? Evidence from cross-country patent grant data." *Applied Economics* 45 no. 7: 887-900.

Tekin-Koru, A. 2009. "Unexplained differences in the FDI receipts of MENA." *Economic Performance in the Middle East and North Africa: Institutions, Corruption and Reform* 6: 120.

The Economist. 2012. "Whispered dissent in UAE- No sheikh-up here: Tiny shoots from the Arab Spring get crushed." In *The Economist*.

Tiwari, A. K., and Kalita, M. 2011. "Governance and Foreign Aid in ASIAN Countries." *Economics Bulletin*, Vol. 31 no. no.1: pp. 453-65.

Todaro, M. P., and Smith, S. C. 2011. *Economic Development*: Prentice Hall; 11 edition (March 26, 2011).

Touati, K. 2014. "Determinants of Economic Corruption in the Arab Countries: Dangers and Remedies." *Journal of Economics Studies and Research* 2014: 1-15.

Transparency International. 2002. *Fighting corruption: issues and perspectives*: Ed. Karthala.

Transparency International. 2011. "Corruption perceptions index." In, ed. Beddow, R.: Transparency International.

Transparency International. 2015. "Corruption Perceptions Index 2015." In: Transparency International.

Transparency International. 2016. "Corruption Perceptions Index 2016." In: Transparency International.

Trebilcock, M. J., and Prado, M. M. 2011. *What makes poor countries poor?: institutional determinants of development*: Edward Elgar Publishing.

Tuna, K., Kayacan, E., and Bektaş, H. 2015. "The Relationship Between Research & Development Expenditures and Economic Growth: The Case of Turkey." *Procedia-Social and Behavioral Sciences* 195: 501-07.

Uddin, M. A., Ali, M. H., and Masih, M. 2017. "Political stability and growth: An application of dynamic GMM and quantile regression." *Economic Modelling*.

Ugaz, C. 2002. *Consumer participation and pro-poor regulation in Latin America*: WIDER Discussion Papers//World Institute for Development Economics (UNU-WIDER).

Ulku, H. 2004. "R&D, Innovation, and Economic Growth: An Empirical Analysis " In: International Monetary Fund.

Ulvedal, P. B. 2013. "Macroeconomic stability and economic growth in developing countries." In *Department of economics*: University of Oslo.

UNCTAD. 2009. "Information Economy Report 2009. Trends and Outlook in Turbulent Times." In. Geneva: United Nations Conference on Trade and Development (UNCTAD).

- UNCTAD. 2013. "Information Economy Report 2013: The Cloud Economy and Developing Countries." In. Geneva: United Nations Conference on Trade and Development (UNCTAD).
- UNDP. 2011. "Arab Development Challenges: toward the developmental state in the Arab region." In. Cairo, Egypt: United Nations Development Programme, Regional Centre for Arab States, Cairo.
- UNDP. 2013. "Water Governance in the Arab Region: Managing Scarcity and Securing the future." In: United Nations Development Programme.
- UNDP. 2016. "Chapter 6 : The effects on youth of war and violent conflict." In *Arab Human Development Report 2016 : Youth and the Prospects for Human Development in a Changing Reality*: United Nations Development Programme.
- UNESCO. 2009. "The global literacy challenge: A profile of youth and adult literacy at the mid-point of the United Nations Literacy Decade 2003-2012." In: UNESCO.
- UNESCO. 2013. "EFA Global Monitoring Report 2013/14: Teaching and Learning: Achieving Quality for All." In *The EFA Global Monitoring Report*. Paris: UNESCO: UNESCO, GEMR.
- UNESCO. 2015. "Global Monitoring Report 2015: Education for all 2000–2015: Achievements and Challenges." In. Paris, France: UNESCO, EFA.
- Ungar, M. 2002. *Elusive reform: Democracy and the rule of law in Latin America*: Lynne Rienner Publishers.
- United Nations. 1954. *Report on International Definition and Measurement of Standards and Levels of Living*. : Report of a Committee of Experts Convened by the Secretary-General of the United Nations Jointly with the International Labour Office and the United Nations Educational, Scientific and Cultural Organization.
- Utz, A., and Aubert, J.-E. 2013. "Transforming Arab Economies: The Knowledge and Innovation Road." In: The World Bank.
- Van Pottelsberghe, B., Denis, H., and Guellec, D. 2001. "Using patent counts for cross-country comparisons of technology output." In: ULB--Universite Libre de Bruxelles.
- Vega-Gordillo, M., and Alvarez-Arce, J. L. 2003. "Economic Growth and Freedom: A Causality Study." *Cato Journal* 23 no. 2: 199-215.
- Véganzonès-Varoudakis, M.-A., and Nabli, M. K. 2004. "Reforms and Growth in MENA Countries: New Empirical Evidence." In. Washington, D.C.: Centre National de la Recherche Scientifique (CNRS), Centre d'Etudes et de Recherches sur le Développement International (CERDI), Clermont Ferrand, France and World Bank.
- Venables, A. J., Maloney, W., Kokko, A., Bravo Ortega, C., Lederman, D., Rigobón, R., De Gregorio, J., Czelusta, J., Jayasuriya, S. A., and Blomström, M. 2007. "Natural resources: neither curse nor destiny." In *Latin American Development Forum Series*: Inter-American Development Bank.
- Verner, D. 2012. *Adaptation to a Changing Climate in the Arab Countries : A Case for Adaptation Governance and Leadership in Building Climate Resilience*: World Bank.
- Villa, S. 2005. "Determinants of growth in Italy. A time series analysis." *Dipartimento di*.
- Vitalis, R., and Heydemann, S. 2000. "War, Keynesianism, and Colonialism: Explaining State-Market Relations in the Postwar Middle East." In: Berkeley, Calif.: University of California Press.

- Vivien, F., and Briceño-Garmendia, C. 2010. "Africa's Infrastructure: A Time for Transformation." In. Washington DC: World Bank.
- Wahba, J., and Assaad, R. 2017. "Flexible labor regulations and informality in Egypt." *Review of Development Economics* 21 no. 4: 962-84.
- Walter, B. F. 2015. "Why bad governance leads to repeat civil war." *Journal of Conflict Resolution* 59 no. 7: 1242-72.
- Wan, X. 2010. "A literature review on the relationship between foreign direct investment and economic growth." *International Business Research* 3 no. 1: 52.
- Weber, M. 1930. "The Protestant ethic and the spirit of capitalism, translated by T. Parsons." *New York: Scribner*.
- Weber, M. 1994. *Weber: political writings*: Cambridge University Press.
- Weyland, K. G. 1998. "The politics of corruption in Latin America." *Journal of Democracy* 9 no. 2: 108-21.
- WHO. 2014. *The world health report : research for universal health coverage*: World Health Organization.
- WHO. 2015. "World health statistics 2015." In: World Health Organization.
- Wiig, A., and Kolstad, I. 2012. "If diversification is good, why don't countries diversify more? The political economy of diversification in resource-rich countries." *Energy Policy* 40: 196-203.
- Williams, A., and Siddique, A. 2008. "The use (and abuse) of governance indicators in economics: a review." *Economics of Governance* 9 no. 2: 131-75.
- Williamson, J. 1990. "What Washington means by policy reform." *Latin American adjustment: How much has happened* 7: 7-20.
- Williamson, J. 1994. "The Political Economy of Policy Reforms." In. Washington, DC: Institute of International Economics.
- Williamson, J. 2004. "The Years of Emerging Market Crises: A Review of Feldstein." *Journal of economic literature* 42 no. 3: 822-37.
- Williamson, O. E. 2000. "The new institutional economics: taking stock, looking ahead." *Journal of economic literature*: 595-613.
- Winthrop, R., Bulloch, G., Bhatt, P., and Wood, A. 2015. "Development Goals in an Era of Demographic Change." *Global Monitoring Report* 2016.
- Wisniewski, T. P., and Pathan, S. K. 2014. "Political environment and foreign direct investment: Evidence from OECD countries." *European Journal of Political Economy* 36: 13-23.
- Wobst, P., and Seebens, H. 2005. "The impact of increased school enrollment on economic growth in Tanzania." *African Development Review* 17 no. 2: 274-301.
- Woodberry, R. D. 2012. "The missionary roots of liberal democracy." *American political science review* 106 no. 2: 244-74.

- Wooldridge, J. M. 2010. *Econometric analysis of cross section and panel data*. Cambridge, Mass.: MIT Press.
- Wooldridge, J. M. 2013. *Introductory econometrics : a modern approach*. Mason, OH ,USA: South-Western Cengage Learning.
- World Bank. 1991. *World Development Report 1991: The Challenge of Development*. Washington, DC: ERIC Clearinghouse.
- World Bank. 1992. "Governance and development." In. Washington, D.C.: World Bank.
- World Bank. 2000. "World development report 1999/2000." In. Washington, DC: World Bank.
- World Bank. 2002. "World development report 2002: building institutions for markets." In: World Bank Group.
- World Bank. 2004a. *Unlocking the employment potential in the Middle East and North Africa: Toward a new social contract*: World bank.
- World Bank. 2004b. "World Development Report 2004: Making services work for the poor." In. New York: Oxford University Press.
- World Bank. 2006. "Economic Developments and Prospects 2006 :Middle East and North Africa " In.
- World Bank. 2008. "Economic Developments and Prospects: Job Creation in an Era of High Growth." In: Washington, DC, Banque mondiale.
- World Bank. 2010a. "Global Economic Prospects : Crisis, Finance, and Growth." In. Washington, DC The World Bank.
- World Bank. 2010b. "Global Economic Prospects : Fiscal headwinds and recovery." In. Washington, DC The World Bank.
- World Bank. 2017a. "Doing Business 2017 : Equal Opportunities for All." In. Washington: International Bank for Reconstruction and Development/The World Bank.
- World Bank. 2017b. "World Development Indicators." In. Washington, D.C.
- World Bank. 2017c. "The Worldwide Governance Indicators (WGI) " In. Washington, D.C.
- Yamani, M. 2013. "Why a king's ransom is not enough for Saudi Arabia's protesters." In *The Guardian*.
- Yeyati, E. L. 2008. "The cost of reserves." *Economics Letters* 100 no. 1: 39-42.
- Yom, S. 2005. "Civil society and democratization in the Arab world." *Middle East Review of International Affairs* 9 no. 4: 15-32.
- Yom, S. L., and Gause III, F. G. 2012. "Resilient royals: How Arab monarchies hang on." *Journal of Democracy* 23 no. 4: 74-88.
- Yousef, T. M. 2004. "Development, Growth and Policy Reform in the Middle East and North Africa since 1950." *The Journal of Economic Perspectives* 18 no. 3: 91-115.
- Zaid, A., Sherry, H., El-Badrawi, M., and Haber, J. 2014. *Arab Uprisings & Social Justice: Implications of IMF Subsidy Reform Policies*: New America Foundation.

Zaman, A. 2005. "Towards a new paradigm for economics." *Journal of Islamic Economics* 18 no. 2: 49-59.