An Examination of the Extent of and the Potential for Arab Economic Integration

Ph.D Thesis

By

Mohamed Elafif

A Thesis Submitted in Fulfilment of the Requirements for the Award of the Degree Doctor of Philosophy (Economics and Finance)

School of Economics and Finance
College of Business
University of Western Sydney
Sydney, Australia

University of Western Sydney
December 2008
Dedication

▷ To my Parents Ahmed and Aysha, who taught me what struggle means.

▷ To my brothers and sisters, who clarified for me what integration means.

▷ To my wife, who has shown me what giving and sacrifice really are.
Acknowledgements

My journey to completing this PhD thesis has been profoundly supported by a number of people. Firstly, I would like to express my sincere gratitude to my principal supervisor, Dr. John Ablett, for the expert guidance and continuously a great help he provided to me during my PhD candidature. I also express my gratefulness to my co-supervisors Mr. Neil Hart and Dr. Partha Gangopadhyay who kept his eye on the progress of my work and was available for help whenever I needed. They provided me with great help. I have enjoyed the maximum degree of intellectual freedom while working under their supervision.

I am especially thankful to Professor Anis Chowdhury, who was one of my supervisors at an early stage. My sincere thanks are also due to Dr. Kevin Daly, who provided me a great help during his tenure as research Chair. Special thanks are due to Professor John Lodewjiks who showed concern with my research progress all the time and provided me with significant help during my PhD candidature. Many helpful comments from some anonymous journal and conference reviewers have also played a critical role in shaping the thesis to its current form. I owe them lots of gratitude. I appreciate very much the Libyan Government who offered me a scholarship for my studies. I would also like to thank the University of Al-Mergheb, Libya for the study leave I have been given.

Finally, I would like to express my appreciation to my family which has proved to be the right and ultimate place of refuge, enabling me to keep the stress of research at bay. I remain heavily indebted to all my family members, especially my parents, my brothers and sisters, and my wife for their unfailing love and unwavering support and encouragement over the years.

Mohamed Elafif
Sydney, Australia, December 2008
Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

..............................................
(Mohamed Elafif)
December 2008
Contents

Dedication ...................................................................................................................... ii
Acknowledgements ...................................................................................................... iii
Statement of Authentication ......................................................................................... iv
Contents ......................................................................................................................... v
List of Tables ................................................................................................................ ix
List of Figures and Diagrams ........................................................................................ ix
Abstract .......................................................................................................................... 1

Chapter One.................................................................................................................. 3
Scope and Framework of the Study ............................................................................. 3
1.1 Introduction ......................................................................................................... 3
1.2 Historical Review ............................................................................................... 7
Table 1: Major Regional Economic Cooperation Agreements in the Arab Region .... 10
1.3 The Characteristics of Arab Countries ............................................................... 11
Table 2: Salient Features of Arab countries ................................................................. 12
Table 3: Economic (GDP) Growth (%) in Arab Countries (1980-2005) ..................... 15
Table 4: Inflation Rates (%) in Arab Countries (1980-2005) ...................................... 16
1.3 The Nature of Arab Economic Interdependence ............................................... 17
1.4.1 Intra-Arab Trade ......................................................................................... 17
Table 5: Intra-Arab Exports ......................................................................................... 18
Table 6: Significance of Intra-Arab Trade ................................................................... 19
1.4.2 Intra-Arab Investment................................................................................. 19
Table 7: Intra-Arab Investment Flows in Each Country ($ million) ........................... 20
Table 8: Stock of Intra-Arab Investment, 1997-2003 ($ million) ............................... 21
1.4.3 Intra-Arab Labour Flows ............................................................................ 21
Figure 1: Worker’s remittances (US$ million) 1975-2002 selected Arab countries ... 23
1.5 Research Problems ............................................................................................. 24
1.6 Objectives of the Thesis ..................................................................................... 25
1.7 Methodology and Sources of Data ..................................................................... 26
1.7.1 The Gravity Model ...................................................................................... 26
1.7.2 The Gravity Model in Arab Literature ........................................................ 30
1.7.2.1 Intra-Arab Trade .................................................................................. 30
1.7.2.2 Intra-Arab FDI ..................................................................................... 30
1.8 Outline of the Thesis .......................................................................................... 32

Chapter Two................................................................................................................. 35
The Nature and Theory of Economic Integration ...................................................... 35
2.1 THE NATURE OF ECONOMIC INTEGRATION .............................................. 35
2.1.1 Introduction ................................................................................................ 35
2.1.2 The Definition of Economic Integration ....................................................... 36
The First Direction ...................................................................................................... 37
Economic Integration as a Process ........................................................................... 37
Economic Integration as a Situation ........................................................................ 37
The Second Direction ............................................................................................... 38
Coercive Integration .................................................................................................. 40
Voluntary Integration ................................................................................................ 41
Horizontal Integration .............................................................................................. 42
Vertical Integration .................................................................................................... 43
2.1.3 Regional Integration .................................................................................... 44
2.1.4 Regional Integration Treatment Approaches .............................................. 57
  2.1.4.1 The Federalist Approach ........................................................................ 57
  2.1.4.2 The Transactionalist Approach .............................................................. 57
  2.1.4.3 The Modern Functional Approach ......................................................... 58

2.2 THE THEORY OF ECONOMIC INTEGRATION ........................................... 59
  2.2.1 The Production Approach to Economic Integration ...................................... 60
  2.2.2 The Commercial Approach to Economic Integration .................................... 61
  2.2.3 The Motives behind Economic Integration .................................................... 62
  2.2.4 The Benefits of Economic Integration .......................................................... 64
  2.2.5 Factors Influencing the Effects of Economic Integration .............................. 70
    2.2.5.1 The Level of Competition and Integration between Integrated Economies ........................................................................................................ 70
  2.2.5.2 Location and Transportation Costs ........................................................ 70
  2.2.6 The levels of economic integration .............................................................. 73

Table 9: The Economic Integration Types and the Removal of Discrimination ...... 73
  1. Free Trade Area (FTA) .................................................................................. 74
  2. Customs Union ............................................................................................. 74
  3. Common Market ............................................................................................ 75
  4. Economic Union ........................................................................................... 75
  5. Economic Unity (Total Economic Integration) ............................................. 75

2.2.6 Sub-Regional Integration in the Arab Region ............................................. 76

Figure 2: Institutions Responsible for Implementing the GAFTA Agreement .......... 77

Chapter Three ............................................................................................................ 80
Review of the Literature on Arab Economic Integration ...................................... 80
  3.1 Introduction ..................................................................................................... 80
  3.2 Intra-Arab Trade ............................................................................................ 81
  3.3 Intra-Arab Investment, FDI and Stock Markets ............................................. 93
    3.3.1 Intra-Arab Investment and FDI ................................................................... 93

Table 10: Intra-Arab Investments according to host countries 1995-2005(Millions US$) ........................................................................................................................................... 98

  3.3.2 The Intra-Arab Stock Market ..................................................................... 100
  3.4 Intra-Arab Labour Flows (Remittances) ...................................................... 103
  3.5 Convergence and Economic Union ............................................................. 107
  3.6 Conclusion .................................................................................................... 109

Chapter Four ............................................................................................................. 111
The Nature of Intra-Arab Trade .............................................................................. 111
  4.1 Introduction ................................................................................................... 111
  4.2 The Pattern of Intra-Arab Trade ................................................................... 112
  4.3 Sub-Regional Integration in the Arab Region .............................................. 114
    4.3.1 The Gulf Co-Operation Council (GCC) ................................................. 114
    4.3.2 The Arab Maghreb Union (AMU) ........................................................... 115
  4.4 Restrictions on Intra-Arab Trade ................................................................. 116
    4.4.1 Shortcomings of the Arab Region ......................................................... 116
    4.5.1 The Gravity Model ................................................................................. 117
    4.6.1 The Panel Approach .............................................................................. 123
    4.6.2 Panel Model Types ................................................................................ 124

The Constant Coefficient Model .............................................................................. 124
The Fixed Effects Model ................................................................. 124
4.7 Main Empirical Results on Intra-Arab Trade ........................................... 128
The following tables give the results form panel date estimation of equation (4.7). 128
Table 12: Regression Results (Panel Least Squares Fixed Effects) for the Gravity
Model of Intra-Arab Exports ($\ln T_{ij}$) ....................................................... 128
Table 12A: Regression Results (Panel Least Squares Fixed Effects) for the Gravity
Model of Intra-trade of Arab countries with GCC region. .............................. 128
Table 12B: Regression Results (Panel Least Squares Fixed Effects) for the Gravity
Model of Intra-trade of Arab countries with AMU region. ............................... 129
Table 12C: Regression Results (Panel Least Squares Fixed Effects) for the Gravity
Model of Intra-trade of Arab countries with Mashreq region ............................ 129
Table 12D: Regression Results (Panel Least Squares Fixed Effects) for the Gravity
Model of Intra-trade of Arab countries with region named Other in this study. ... 130
Figure 3: The Arab World ............................................................................. 131
4.8 Conclusion ............................................................................................... 133
Chapter Five ............................................................................................... 135
Intra-Arab Capital Flows, Foreign Direct Investment and the Foundations for
Economic Integration ..................................................................................... 135
5.1 Introduction .............................................................................................. 135
5.2 Characteristics of Capital Flows ............................................................... 137
5.3 Intra-Arab Capital Flows ........................................................................... 138
Table 13: Intra-Arab Investments According to Host Countries 1995-2005 (US$ Millions) .............................................................................................................. 144
Figure 4: Intra-Arab Investments Based on Host Countries 1995-2005 (US$ Millions) ....................................................................................................................... 145
5.4 The Features of FDI in the Arab Region ...................................................... 145
5.4.1 Arab and World FDI flows ...................................................................... 146
Table 14: FDI Flows, 1985-2003 (US$ million) ................................................. 147
5.4.2 Regional Disparities ..................................................................................... 147
5.4.3 Sector Concentration .............................................................................. 148
5.4.4 Intra-Arab Investment ............................................................................ 148
Table 15: Intra-Arab FDI Based on the Host Country 1985-2005 (US$ Million) .... 150
5.5 Specification of the Model and the Empirical Results ................................. 150
Table 16: The Regression Results of Intra-Arab FDI, Panel Least Squares ($FDI_{ij}$) 153
Table 17: The Results of Panel Least Squares ($FDI_{ij}$) Regression of Intra-Arab FDI ......................................................................................................................... 154
5.6 Conclusion ............................................................................................... 155
Chapter Six .................................................................................................. 156
The Role of Intra-Labour Flows in Arab Economic Integration .......................... 156
6.1 Introduction .............................................................................................. 156
6.2 Intra-Arab Labour Flows .......................................................................... 158
6.3 Model Specification and the Empirical Results ........................................... 161
6.4 Discussion ............................................................................................... 166
Table 18: The Regression Results of Intra-Arab Remittances, Panel Least Squares ($\ln R_{ij}$) ...................................................................................................................... 164
Table 19: The Intra-Arab Remittances Regression Results, Panel Least Squares
($\ln R_{ij}$) ........................................................................................................ 167
List of Tables

Table 1: Major Regional Economic Cooperation Agreements in the Arab Region ....10
Table 2: Salient Features of Arab countries.................................................................12
Table 3: Economic (GDP) Growth (%) in Arab Countries (1980-2005).......................15
Table 4: Inflation Rates (%) in Arab Countries (1980-2005)........................................16
Table 5: Intra-Arab Exports.........................................................................................18
Table 6: Significance of Intra-Arab Trade ....................................................................19
Table 7: Intra-Arab Investment Flows in Each Country ($ million) ............................20
Table 8: Stock of Intra-Arab Investment, 1997-2003 ($ million).................................21
Table 9: The Economic Integration Types and the Removal of Discrimination ........73
Table 10: Intra-Arab Investments according to host countries 1995-2005(Millions US$).................................................................................................................................98
Table 11: Aggregate Intra-Arab FDI Flows during 1985-2002 (Thousands US$)......99
Table 12: Regression Results (Panel Least Squares Fixed Effects) for the Gravity Model of Intra-Arab Exports ($Tij$).................................................................128
Table 13: Intra-Arab Investments According to Host Countries 1995-2005 (US$ Millions)..................................................................................................................144
Table 14: FDI Flows, 1985-2003 (US$ million) ............................................................147
Table 15: Intra-Arab FDI Based on the Host Country 1985-2005 (US$ Million)......150
Table 16: The Regression Results of Intra-Arab FDI, Panel Least Squares ($FDI_{ij}$) 153
Table 17: The Results of Panel Least Squares ($FDI_{ij}$) Regression of Intra-Arab FDI .................................................................................................................................154
Table 18: The Regression Results of Intra-Arab Remittances, Panel Least Squares ($LnR_j$) .........................................................................................................................164
Table 19: The Intra-Arab Remittances Regression Results, Panel Least Squares ($LnR_j$) .........................................................................................................................167
List of Figures and Diagrams

Figure 1: Worker’s remittances (US$ million) 1975-2002 selected Arab countries ...23
Figure 2: Institutions Responsible for Implementing the GAFTA Agreement. ........77
Figure 3: The Arab World.................................................................131
Figure 4: Intra-Arab Investments Based on Host Countries 1995-2005 (US$ Millions) .................................................................145
Diagram 6.1: Cyclical Fluctuation in Migration and TOT ........................191
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMF</td>
<td>Arab Monetary Fund</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>GCC</td>
<td>Gulf Co-operation Council</td>
</tr>
<tr>
<td>AMU</td>
<td>Arab Maghreb Union</td>
</tr>
<tr>
<td>GAFTA</td>
<td>Greater Arab Free Trade Area</td>
</tr>
<tr>
<td>MENA</td>
<td>Middle East and North Africa</td>
</tr>
<tr>
<td>UAE</td>
<td>United Arab Emirates</td>
</tr>
<tr>
<td>AFTA</td>
<td>Arab Free Trade Area</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>BTAs</td>
<td>bilateral trade agreements</td>
</tr>
<tr>
<td>FTA</td>
<td>Free Trade Area</td>
</tr>
<tr>
<td>IIT</td>
<td>intra-industry trade</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>AEU</td>
<td>Arab Economic Unity</td>
</tr>
<tr>
<td>LDCs</td>
<td>Less Developed Countries</td>
</tr>
<tr>
<td>TOT</td>
<td>Terms of Trade</td>
</tr>
</tbody>
</table>
Abstract

The main objective of this thesis is to examine the extent of and the potential for Arab economic integration. It adds to the growing literature on the issue of economic integration by throwing the spotlight on several issues hitherto little considered in the existing literature. The thesis especially blends various aspects of economic integration with models of spatial competition, economic geography, regionalisation and globalisation to explain the problems of and prospects for economic integration for the Arab countries. It is important to realise that economic integration has become an important aim for almost all countries in the world; in particular, less developed countries, which need more economic efforts to be able to deal with the current international milieu and the gale of globalisation. The Arab countries have engaged in a number of initiatives to advance economic integration, however despite this the degree of economic integration among them is still relatively insignificant. The thesis also attempts to offer theoretical models to explain the obstacles preventing economic integration in the Arab world.

This thesis is, to the best of the author’s knowledge and belief, the first rigorous study of the extent of and the potential for Arab economic integration through three vital economic perspectives: trade, investment and labour flows. In the first perspective, this study investigates the nature of intra-Arab trade and which particular countries/sub-group of countries may potentially become an integrated regional production system, or hub. This investigation is done within the scope of gravity models, which assume that intra-trade is a function of the GDPs of the involved countries and the distance between them. The thesis extends the literature by introducing spatial models and models of new economic geography to explain how
economic integration evolves in the current international milieu concomitantly driven by globalisation and regionalisation. In the second perspective, this study investigates intra-Arab FDI and capital mobility. The postulated model assumes that intra-Arab FDI is a function of a number of economic variables, such as GDP, GDP per capita, inflation and purchasing power parity. The thesis offers a comprehensive theoretical model to explain how successful economic integration can be carried out by FDI flows. In the third perspective, the study investigates intra-Arab labour flows. The proposed model utilises remittances as an indicator of labour flows. It assumes that remittances are a function of some economic variables, such as GDP per capita, the real price of oil, and the oil production of Saudi Arabia, which represents the main Arab host country of Arab labour flows. The proposed theoretical model offers insights into the dynamics of labour flows and oil price movements.

The econometric study in the thesis applies panel data for the period 1985-2005, and employs Ordinary Least Squares (OLS) fixed effects regression. The most important empirical finding of the study is that Arab economic integration has been significantly affected by intra-trade, intra-FDI and intra-labour flows among sub-unions of Arab countries.
Chapter One

Scope and Framework of the Study

“In spite of the major rethinking of the theory of international trade that has taken place over the past dozen years, few economists would disagree with the proposition that a world with free trade will be better off than under any other plausible set of trade policies. Yet preaching the virtues of global free trade somehow does not seem to get us there, and it often seems easier to negotiate free trade or at least trade liberalization on a more local basis. Indeed, in spite of the growing ease of international communication, the 1980s saw a shift of emphasis away from global trade negotiations toward regional deals.” (Krugman, 1999: 312).

1.1 Introduction

Over the last century, the world economy has encountered deep and rapid changes. Over the years these changes have internationally, regionally and locally been transforming our global economic and social systems. These changes are in political and economic spheres. Since the last few years of the previous century, a new phenomenon in international economic relations has been on the rise, which aims to increase free international trade and eliminate trade barriers and restrictions between countries. In addition, joint efforts are afoot to increase the economic cooperation among nations in all possible ways. Towards this end, since World War II, several international organizations have been established, such as the International Monetary Fund, Arab Monetary Fund, Arab League and the Arab Organization of Investment Guarantee. These organizations are involved, directly or indirectly, to promote and grow international trade by a gradual decrease of trade barriers. They have achieved

---

1 An earlier draft of this chapter was published in the conference proceedings of "The 11th World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI 2007)", July 8-11, 2007, Orlando-USA.
significant improvements in the field of international trade, investment and economic growth.

There are also some other movements and institutional changes targeting free international and regional trade; however, they were all built on a regional basis. This is due to a strong tendency during the past few years toward promoting economic integration as a policy carried out by nation states. In fact, countries followed this trend to enlarge areas of their external trade and also to increase levels of economic cooperation between themselves. It is remarkable that this tendency has been the same for both advanced and developing counties. With regards to advanced countries, several regional economic groups have been formed with the target of eliminating trade barriers in their regions only, while keeping these barriers against outside nations. Early examples include the BENELUX (1948) created between the Netherlands, Belgium and Luxemburg, and the European Coal and Steel Organization (1952) created between the Netherlands, Belgium, Luxemburg, France, Germany and Italy. Most importantly the European Market (1958), which originally consisted of the six European Coal and Steel Organization countries, was developed later to be a wide and comprehensive European economic union.

The movements toward economic integration have been occurring in the developing world as well. In Latin America for instance, several regional economic groups have been established. The most important economic group among them is the Latin American Free Trade Organization, which was created in 1956 among Argentina, Brazil, Chile, Columbia, Ecuador, Uruguay, Paraguay, Peru and Mexico. In Africa, several groups have been established as well, the most important being the Customs
and Economic Union for Central Africa (1962), which was established between the Congo, Gabon, Cameroon, the Republic of Central Africa and Chad. In addition, there is a Manu River Union, which was established in 1969 amongst Botswana, Lesotho, Swaziland and the Republic of South Africa. Therefore, the formation of economic groups, or clubs, continues steadily at the international level, making this era fertile for triggering a movement towards forming large economic groups and formulating an integrated global economy. It can be safely said that economic integration provides the potential to generate huge benefits in terms of enhancing economic and social advancement. In addition, it is important to note that such integration cannot be achieved unless some initial conditions are met, such as putting mechanisms in place to ensure the even spread of economic development.

Not only are advanced countries establishing economic groups by fostering economic integration among themselves, but the Arab countries have also been trying to find their way within a new international economic order that promotes economic integration in the form of large economic groups rather than small groups or a single country. The importance of less advanced countries globally, and the Arab countries in particular in the current international economic system will shrink when the gap between the advanced economies and the less developed economies decreases. However as the current international division of labour may not always be appropriate for the advancement of developing countries, it may lead to more dependency of these countries on the developed countries.

Economic integration among developing countries, which is built on a new and correct basis, could lead to a new international economic system that is compatible
and effective with respect to the economic advancement of these developing countries. Certainly, it is worth investigating if Arab countries could create an economic group that results in an appropriate form of economic integration. This might enable Arab countries to utilize their different economic capabilities, come to terms with the new international economic conditions, and be beneficiaries of the new international economic system, in ways other than through exports of raw materials.

Regional trade agreements as well as the promotion of regional integration have become a global phenomenon during the post World War II period. The trend began with the formation of the European Economic Community (EEC) in 1958. Since then there have been numerous free trade agreements leading to several regional economic communities, such as the Latin American Free Trade Association (1960), the Central American Common Market (1961), the Association of South East Asian Nations (ASEAN, 1967), the Caribbean Free Trade Association (CARIFTA, 1968), the Economic Community of West African States (ECOWAS, 1975), the Central African Economic Community (CAEC, 1983), and the African Economic Community (AEC, 1991). The EEC, which began with only three countries (France, Germany and Italy), later joined by Belgium, the Netherlands and Luxembourg (Benelux), expanded further and evolved into a political identity, the European Union (EU) with its central bank, parliament and a common currency (Euro), and is now in the process of adopting a constitution.\(^2\) The success of the EU and ASEAN continues to inspire other regional economies. One caveat that should be mentioned at this stage is that while regional trade liberalization is often seen as a vehicle for global trade liberalization, there are influential voices, such as Anne Krueger, that warn of

\(^2\) A few countries have not yet adopted the Euro.
inconsistencies between the creation of regional trading blocs and free multilateral global trade. This is an issue we will have to revisit.

1.2 Historical Review

Regional integration of the Arab countries has been a constant theme since their political independence at the end of WWII. It is instructive to note that the Arab countries were historically one political unit and one economic zone since the advent of Islam until the fall of the Ottoman Empire in 1918. They share the same language, culture, religion and political history. Thus, there is a deep passion for integration in the region. The first attempt at Arab integration was made more than a decade before the EEC with the formation of the Arab League in 1945. However, in contrast to the economic orientation of the EEC, the main driving force behind the formation of the Arab League was political. Although the Arab countries had centuries of common history, the short inter-War colonial experience left a permanent mark. The concept of a national state that grew during the colonial period, and led to the formation of separate Arab states, soon was found to be too difficult to ignore. Hence, the dream of a single Arab political identity has remained elusive. Nonetheless efforts toward a greater economic cooperation have been continuing. In 1957, the Council of Arab Economic Unity was formed, which envisioned the full exemption of tariff and non-tariff barriers amongst member countries. However, only seven member countries (Egypt, Libya, Jordan, Mauritania, Syria, Iraq and Yemen) joined the initiative, which fell short of its aim of establishing a community of trade without restrictions.

---

3 Seven states (Egypt, Syria, Iraq, Saudi Arabia, Yemen, Jordan and Lebanon) formed the Arab League on March 22, 1945. It defined its main goals as to: serve the common good of all Arab countries, ensure better conditions for all Arab countries, guarantee a prosperous future for all Arab countries and fulfill the hopes and expectations of all Arab countries. (Now all 22 Arab countries, with a population of 280 million, are members of the Arab League).
The movement toward Arab economic integration received a further boost with the rise in oil income in the 1970s. In 1970, the Agreement on Investment and Free Movement of Arab Capital among Arab countries was adopted by the members of the Arab Economic Unity, with the aim of promoting and protecting investment between capital-exporting Arab countries and capital-importing Arab countries. The members agreed to grant Arab capital a preferential treatment. National treatment was also granted to Arab investments. In 1971, the Arab League established the Inter-Arab Investment Guarantee Corporation to provide an insurance guarantee to capital flowing amongst their members. In 1975, an Arab institution for the guarantee of investments began operations, which has attempted initially to insure Arab investors against non-commercial risk\(^4\). Consequently, it is expected to encourage intra-Arab investments.

In 1980, the members of the Arab League adopted the Unified Agreement for the Investment of Arab Capital in the Arab region. In 1981, the members of the Arab League signed an agreement for the facilitation and promotion of intra-Arab trade. It was a declaration of intent on behalf of the participants to negotiate the full exemption of tariffs and non-tariff measures for both manufactured and semi-manufactured goods. In 1997, the Greater Arab Free Trade Area (GAFTA) agreement was signed. The objective of this agreement was to steadily reduce all customs duties within a period of 10 years. All the members, except Algeria, Djibouti, Mauritania and Somalia, agreed to accelerate this reduction in 2000 and abolish all tariffs in 2005.

The Arab League established the Arab Monetary Fund (AMF) in 1976 to provide a mechanism for promoting greater stability in exchange rates and to coordinate Arab economic and monetary policies. It operates mainly by regulating petrodollars within the Arab community to make member countries less dependent on the West for the handling of their surplus money. Parallel to the efforts to achieve free trade and investment among all Arab countries, there have also been efforts to form sub-regional trading blocs. They include the Gulf Co-operation Council (GCC) and the Arab Maghreb Union (AMU). In addition, there have been about 135 bilateral trade-related agreements. Table 1 provides a summary of various efforts at Arab economic integration. In spite of these regional economic cooperation agreements, the extent of intra-Arab trade is still very meagre, accounting for not more than 10 percent of the total trade of the Arab countries. The picture gets clearer once we compare this figure with similar figures in other regions such as 69.9 percent for the Asia Pacific Cooperation Council (APEC), 61.7 percent for the EU and over 21 percent for ASEAN.

Against this backdrop, the purpose of this research is to examine the extent of and potential for Arab economic integration. In particular, it will examine (1) intra-Arab trade, (2) intra-Arab investment, (3) intra-Arab labour mobility and (4) the intra-Arab macroeconomic convergence. The study will shed light on the possibility of a greater flow of goods, capital and labour.

---

5 The Gulf Co-operation Council was created on Feb 4th 1981. Six members comprise the council, namely Bahrain, Kuwait, Saudi Arabia, UAE, Oman and Qatar.
6 The Maghreb Arab Union was created on Feb 17th 1989. The Union covers five Arab members, namely Mauritania, Morocco, Algeria, Tunisia and Libya.
### Table 1: Major Regional Economic Cooperation Agreements in the Arab Region

<table>
<thead>
<tr>
<th>Agreement/Organization</th>
<th>The members</th>
<th>Date of establishment</th>
<th>The status of the Agreement/Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Convention for Facilitating Trade and Regulating Transit among Arab League members</td>
<td>Egypt, Iraq, Jordan, Lebanon, Saudi Arabia and Syria</td>
<td>1953</td>
<td>Non-operational</td>
</tr>
<tr>
<td>Council of Arab Economic Unity (CAEU)</td>
<td>Egypt, Iraq, Jordan, Somalia, Libya, Mauritania, Sudan, Syria and Yemen</td>
<td>1957</td>
<td>Active</td>
</tr>
<tr>
<td>Arab Monetary Fund (AMF)</td>
<td>Jordan, United Arab Emirates, Bahrain, Tunisia, Algeria, Djibouti, Saudi Arabia, Sudan, Syria, Somalia, Iraq, Oman, Palestine, Qatar, Kuwait, Lebanon, Libya, Egypt, Morocco, Mauritania, Yemen, Comoros.</td>
<td>It was established in 1976 and started operations in 1977.</td>
<td>Active</td>
</tr>
<tr>
<td>The Gulf Co-operation Council (GCC)</td>
<td>Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, UAE</td>
<td>1981</td>
<td>Active</td>
</tr>
<tr>
<td>The Agreement for Facilitation and Promotion of Intra-Arab Trade.</td>
<td>All members of the Arab League</td>
<td>1981</td>
<td>Active</td>
</tr>
<tr>
<td>The Arab Co-operation Council (ACC)</td>
<td>Egypt, Iraq, Jordan, Yemen</td>
<td>1989</td>
<td>Frozen</td>
</tr>
<tr>
<td>Arab Maghreb Union (AMU).</td>
<td>Algeria, Libyan Arab Jamahiriya, Mauritania, Morocco, Tunisia.</td>
<td>1989</td>
<td>Active</td>
</tr>
</tbody>
</table>
1.3 The Characteristics of Arab Countries

The Arab region stretches from the Atlantic coast of northern Africa in the west, to the Arabian Sea in the east, and from the Mediterranean Sea in the north to Central Africa in the south. The region covers an area of 8.45 million square kilometres approximately. By comparison, the USA comprises 5.79 million square kilometres. The Arab region has 72 per cent of its territory in Africa and 28 per cent in Asia; two continents are joined by the Arab world. Consequently, the Arab region enjoys some strategic advantages. For instance, the long coastlines give the region access to vital waterways to the Atlantic Ocean, the Mediterranean Sea, the Arabian Sea, the Red Sea, the Arabian Gulf, the Gulf of Aden and the Indian Ocean. The Arab region also contains substantial deposits of hydrocarbons and other minerals. However, Arab countries are also diverse in their resource endowments and level of development. As one author [Hershlag, 1979, p.13] notes:

“The Arab countries present a wide and diversified spectrum, both geographically and economically, apart from political, institutional and social aspects. They are not synonymous with the standard concept of the Middle East, in which a number of important economies are non-Arab; while on the other hand a substantial number of Arab countries are part of the African continent.”

Table 2 classifies Arab countries based on some salient economic and geographic features.
Table 2: Salient Features of Arab countries

<table>
<thead>
<tr>
<th>Feature</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil Economies</td>
<td>Saudi Arabia, Kuwait, Bahrain, Qatar, Oman, UAE, Algeria, Libya, and Iraq.*.</td>
</tr>
<tr>
<td>Diversified Economies</td>
<td>Syria, Morocco, Tunisia, Mauritania, Djibouti, Somalia and Sudan.</td>
</tr>
<tr>
<td>Labour Surplus Economies</td>
<td>Egypt, Algeria, Yemen, Tunisia, Sudan and Jordan.</td>
</tr>
<tr>
<td>Capital Surplus Economies</td>
<td>Kuwait, Saudi Arabia, UAE, Libya, Oman, and Qatar are considered as net creditor countries in the Arab region.</td>
</tr>
<tr>
<td>High Income (per capita)</td>
<td>Kuwait, United Arab Emirates and Qatar</td>
</tr>
<tr>
<td>Middle-Income Economies</td>
<td>Algeria, Bahrain, Djibouti, Iraq, Lebanon, Libya, Jordan, Morocco, Syria, Saudi Arabia, Tunisia and Oman</td>
</tr>
<tr>
<td>Low-Income Economies</td>
<td>Egypt, Sudan, Somalia, Mauritania and Yemen</td>
</tr>
<tr>
<td>Geographic Region</td>
<td>Geographically the Arab region is divided to three regions. (1) Maghreb (Western) region: Mauritania, Morocco, Algeria, Tunisia and Libya (2) Mashreq (Eastern) region: Egypt, Syria, Gaza and West Bank, Jordan, Lebanon and Iraq. (3) Gulf region: Saudi Arabia, Kuwait, UAE, Bahrain, Oman and Qatar.</td>
</tr>
</tbody>
</table>

Source: Computed by the author.

* Egypt, Yemen and Syria also export oil. However, their oil sector is less important than others.

Based on size, economic structure, and resource endowment, Karshenas (1997) has divided the Arab region into four broad groupings: (i) low absorption oil economies, (ii) high absorption oil economies, (iii) large non-oil economies, and (iv) small non-oil economies.
(i) **Low Absorption Oil Economies** form a group consisting of seven low population high income countries, namely Saudi Arabia, Libya, Kuwait, the United Arab Emirates, Bahrain, Oman and Qatar. Although these countries are close to high income industrialised countries in terms of income per capita, their economic structures are very different from the industrialised economies. The high income of these countries over the past three decades is mainly from oil exports rather than industrial or agricultural activities. At least up to the mid-1980s, these countries did not have absorptive capacity in terms of some critical factors, such as labour and agricultural land, to invest all of their oil income in their domestic economies. As a result, they accumulated large foreign exchange reserves and foreign assets over time. These countries account for 60-70 per cent of regional GDP.

(ii) **High Absorption Oil Economies** consist of two countries, namely Algeria and Iraq. In these countries, hydrocarbons account for nearly 90 per cent of total exports. However, these countries are large and have complementary land and labour resources. As a result, they have a more differentiated production structure. The percentage of combined share of agriculture and industry in GDP of this group is about 40-50 per cent. Additionally, they have a longer industrialisation experience. This group accounts for about 30 per cent of the regional income and regional population.

(iii) **Large Non-Oil Economies**: This group consists of four large non-oil economies, namely Egypt, Morocco, Sudan and Syria. While more than 50 per cent of the Arab population is in this group of countries, this group
accounts for about 25 per cent or less of Arab GDP. Thus, these countries have a lower per capita income than both groups discussed above. On the other hand, the economies in this group are more diversified in terms of both foreign trade and production structure.

(iv) **Small Non-Oil Economies:** This group consists of four countries, namely Lebanon, Jordan, Yemen and Tunisia. While the population of this group accounts for 10 per cent of the region's population, the economies of these countries represent less than 5 per cent of GDP in the Arab region. The economies of these countries are also distinct: they are small in size and open in nature. Consequently, they are highly dependent on economic activity in the region as a whole.

Tables 3 and 4 present the growth and inflation performance of Arab countries since 1980. As can be seen from Table 3, growth has returned in the Middle East and North Africa (MENA) region in the 1990s, and there is macroeconomic stability in terms of low inflation (Table 4) in most countries.
Table 3: Economic (GDP) Growth (%) in Arab Countries (1980-2005)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MASHRIQ</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>3.4</td>
<td>7.4</td>
<td>2.4</td>
<td>4.5</td>
<td>5.4</td>
<td>3.5</td>
<td>3.2</td>
<td>3.1</td>
<td>4.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Jordan</td>
<td>16.2</td>
<td>6.1</td>
<td>7.1</td>
<td>6.2</td>
<td>4.1</td>
<td>4.9</td>
<td>4.8</td>
<td>4.1</td>
<td>7.7</td>
<td>7.2</td>
</tr>
<tr>
<td>Syria</td>
<td>12.0</td>
<td>6.1</td>
<td>2.7</td>
<td>7.0</td>
<td>0.6</td>
<td>3.8</td>
<td>4.2</td>
<td>2.5</td>
<td>3.6</td>
<td>4.0</td>
</tr>
<tr>
<td>Lebanon</td>
<td>1.5</td>
<td>24.3</td>
<td>-13.4</td>
<td>6.5</td>
<td>-0.5</td>
<td>2.0</td>
<td>2.0</td>
<td>4.9</td>
<td>6.3</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>MAGHREB</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algeria</td>
<td>-5.4</td>
<td>5.6</td>
<td>0.8</td>
<td>3.8</td>
<td>2.1</td>
<td>2.6</td>
<td>4.0</td>
<td>6.8</td>
<td>5.2</td>
<td>5.5</td>
</tr>
<tr>
<td>Libya</td>
<td>-3.8</td>
<td>1.0</td>
<td>-20.2</td>
<td>0.7</td>
<td>2.4</td>
<td>3.7</td>
<td>9.1</td>
<td>9.3</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>Morocco</td>
<td>3.8</td>
<td>6.3</td>
<td>4.0</td>
<td>-6.6</td>
<td>1.0</td>
<td>6.3</td>
<td>3.2</td>
<td>5.5</td>
<td>4.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Tunisia</td>
<td>7.4</td>
<td>5.7</td>
<td>7.1</td>
<td>2.4</td>
<td>4.7</td>
<td>4.9</td>
<td>1.7</td>
<td>5.6</td>
<td>5.8</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>GULF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bahrain</td>
<td>7.5</td>
<td>-0.9</td>
<td>7.3</td>
<td>3.9</td>
<td>5.3</td>
<td>4.5</td>
<td>5.1</td>
<td>7.2</td>
<td>5.4</td>
<td>6.9</td>
</tr>
<tr>
<td>Kuwait</td>
<td>-20.4</td>
<td>-4.3</td>
<td>-26.2</td>
<td>1.4</td>
<td>1.9</td>
<td>0.7</td>
<td>-0.5</td>
<td>13.4</td>
<td>6.2</td>
<td>8.5</td>
</tr>
<tr>
<td>Oman</td>
<td>6.1</td>
<td>14.5</td>
<td>8.4</td>
<td>4.8</td>
<td>5.5</td>
<td>7.5</td>
<td>1.7</td>
<td>1.4</td>
<td>3.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Qatar</td>
<td>-1.0</td>
<td>-13.0</td>
<td>-14.6</td>
<td>5.5</td>
<td>9.1</td>
<td>4.5</td>
<td>7.3</td>
<td>5.9</td>
<td>9.9</td>
<td>8.8</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>7.9</td>
<td>-4.1</td>
<td>10.6</td>
<td>0.5</td>
<td>4.9</td>
<td>0.5</td>
<td>0.1</td>
<td>7.7</td>
<td>5.2</td>
<td>6.5</td>
</tr>
<tr>
<td>UAE</td>
<td>-1.8</td>
<td>-2.5</td>
<td>16.6</td>
<td>7.0</td>
<td>12.3</td>
<td>3.5</td>
<td>1.9</td>
<td>11.3</td>
<td>8.5</td>
<td>8.0</td>
</tr>
<tr>
<td><strong>LDC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudan</td>
<td>1.5</td>
<td>-6.3</td>
<td>-5.5</td>
<td>6.0</td>
<td>5.1</td>
<td>6.1</td>
<td>5.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Djibouti</td>
<td>3.4</td>
<td>-0.2</td>
<td>5.8</td>
<td>-3.5</td>
<td>0.7</td>
<td>1.9</td>
<td>2.6</td>
<td>3.2</td>
<td>3.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Yemen</td>
<td>4.4</td>
<td>3.4</td>
<td>1.3</td>
<td>12.5</td>
<td>4.4</td>
<td>4.6</td>
<td>3.9</td>
<td>3.1</td>
<td>2.6</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Sources: IMF, World Economic Outlook, 2005; World Bank, MENA Development Report, 2006

Note: Here and elsewhere missing data in columns indicates that the data is not currently available.
Because of the strong dependence of some other countries in the region on the low absorption oil economies as an important source of foreign exchange revenue, the fluctuation in investment and trade in these countries with low absorption oil economies has significantly affected the economies of the other countries in the Arab region. In addition, the developments in this group of countries are significantly important for growth and employment in other countries in the Arab region. Consequently, an examination of the role that many low absorption oil economies play in terms of development in the regional economy of the Arab countries is essential.
1.3 The Nature of Arab Economic Interdependence

Close to 90 per cent of merchandise exports of low absorption oil economies are destined for the non-Arab region. Also, about 90 per cent of their imports come from the rest of the world rather than the Arab region. Consequently, an asymmetric interrelation has developed between this group of countries vis-à-vis other countries of the region. For example, while the large non-oil economies have become increasingly more dependent on low absorption oil economies as a source of capital, the latter depend on the former as a source of labour.

The dependence of small non-oil economies on the rest of countries in the region has grown since the 1970s through both factor movements and non-factor services. In the case of Jordan, for example, remittances from migrant labour who worked in the rest of the Arab region fluctuated between 100 and 200 per cent of the value of Jordan's merchandise exports. On the other hand, Jordan also depends heavily on the oil exporting Arab countries in terms of transit trade revenues as well as direct capital aid. Yemen too is heavily dependent on the oil surplus economies in the Gulf region (mainly Saudi Arabia) in terms of labour remittances, which reached more than 100 per cent of its merchandise exports in 1990.

1.4.1 Intra-Arab Trade

The relative importance of intra-Arab exports for each country in recent years (1997-2003) is shown in Table 5. As can be seen, Saudi Arabia and the United Arab Emirates dominate intra-Arab trade, accounting on average for 35.93 and 18.96 per cent of such trade, respectively. The second part of Table 5 shows the ratio of intra-Arab exports to total exports of each country. Three countries – Lebanon (40.81%),
Jordan (31.64%), and Sudan (23.7%) are most dependent on intra-Arab exports. They are followed by Syria (20.54%) and Oman (13.94%). Jordan’s exports to other Arab countries have declined significantly. This could be due to Jordan signing free trade agreements with the US in 2001 and with the EU in 2002.

Table 5: Intra-Arab Exports

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>1.21</td>
<td>0.85</td>
<td>1.46</td>
<td>1077</td>
<td>3.23</td>
<td>2.51</td>
<td>2.73</td>
<td>1.97</td>
</tr>
<tr>
<td>Bahrain</td>
<td>3.03</td>
<td>3.84</td>
<td>3.6</td>
<td>3.24</td>
<td>3.16</td>
<td>3.26</td>
<td>3.24</td>
<td>3.34</td>
</tr>
<tr>
<td>Egypt</td>
<td>3.25</td>
<td>3.84</td>
<td>2.99</td>
<td>4.29</td>
<td>3.19</td>
<td>3.99</td>
<td>4.19</td>
<td>3.68</td>
</tr>
<tr>
<td>Jordan</td>
<td>3.98</td>
<td>3.67</td>
<td>3.42</td>
<td>2.84</td>
<td>3.33</td>
<td>3.57</td>
<td>3.36</td>
<td>3.45</td>
</tr>
<tr>
<td>Kuwait</td>
<td>2.14</td>
<td>2.21</td>
<td>2.99</td>
<td>2.63</td>
<td>2.88</td>
<td>2.79</td>
<td>2.81</td>
<td>2.64</td>
</tr>
<tr>
<td>Lebanon</td>
<td>2.34</td>
<td>2.51</td>
<td>2.03</td>
<td>1.92</td>
<td>2.19</td>
<td>2.15</td>
<td>2.13</td>
<td>2.18</td>
</tr>
<tr>
<td>Libya</td>
<td>2.43</td>
<td>3.41</td>
<td>2.5</td>
<td>2.9</td>
<td>3.11</td>
<td>2.75</td>
<td>2.78</td>
<td>2.84</td>
</tr>
<tr>
<td>Morocco</td>
<td>2.26</td>
<td>1.63</td>
<td>2.21</td>
<td>1.54</td>
<td>1.51</td>
<td>1.61</td>
<td>1.48</td>
<td>1.75</td>
</tr>
<tr>
<td>Oman</td>
<td>6.91</td>
<td>8.35</td>
<td>7.8</td>
<td>8.41</td>
<td>7.56</td>
<td>8.11</td>
<td>6.37</td>
<td>7.64</td>
</tr>
<tr>
<td>Kuwait</td>
<td>1.68</td>
<td>1.98</td>
<td>1.95</td>
<td>4.72</td>
<td>3.01</td>
<td>4.37</td>
<td>3.54</td>
<td>3.03</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>45.92</td>
<td>36.08</td>
<td>37.67</td>
<td>34.62</td>
<td>32.62</td>
<td>32.07</td>
<td>32.56</td>
<td>35.93</td>
</tr>
<tr>
<td>Sudan</td>
<td>1.19</td>
<td>1.55</td>
<td>1.65</td>
<td>1.25</td>
<td>1.26</td>
<td>1.22</td>
<td>1.36</td>
<td>1.69</td>
</tr>
<tr>
<td>Syria</td>
<td>4.81</td>
<td>6.07</td>
<td>5.42</td>
<td>4.93</td>
<td>8.98</td>
<td>7.66</td>
<td>7.57</td>
<td>6.49</td>
</tr>
<tr>
<td>Tunisia</td>
<td>2.83</td>
<td>2.69</td>
<td>3.11</td>
<td>3.21</td>
<td>3.34</td>
<td>3.51</td>
<td>3.42</td>
<td>3.16</td>
</tr>
<tr>
<td>UAE</td>
<td>15.51</td>
<td>20.3</td>
<td>20.08</td>
<td>20.5</td>
<td>19.5</td>
<td>18.53</td>
<td>18.28</td>
<td>18.96</td>
</tr>
<tr>
<td>Yemen</td>
<td>0.51</td>
<td>1.07</td>
<td>1.11</td>
<td>1.24</td>
<td>1.11</td>
<td>1.91</td>
<td>1.84</td>
<td>1.26</td>
</tr>
</tbody>
</table>

Part (ii) Ratio of Intra-Arab Exports to total Exports for each country (%)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>1.25</td>
<td>1.12</td>
<td>1.53</td>
<td>1.33</td>
<td>2.9</td>
<td>2.37</td>
<td>2.23</td>
<td>1.82</td>
</tr>
<tr>
<td>Bahrain</td>
<td>6.88</td>
<td>7.86</td>
<td>7.35</td>
<td>6.6</td>
<td>6.42</td>
<td>6.79</td>
<td>6.4</td>
<td>6.9</td>
</tr>
<tr>
<td>Egypt</td>
<td>11.77</td>
<td>15.9</td>
<td>11.29</td>
<td>10.53</td>
<td>12.66</td>
<td>9.97</td>
<td>10.38</td>
<td>11.79</td>
</tr>
<tr>
<td>Jordan</td>
<td>42.27</td>
<td>39.23</td>
<td>36.97</td>
<td>34.14</td>
<td>23.9</td>
<td>22.54</td>
<td>22.43</td>
<td>31.64</td>
</tr>
<tr>
<td>Kuwait</td>
<td>2.05</td>
<td>2.85</td>
<td>3.14</td>
<td>2.16</td>
<td>2.9</td>
<td>3.06</td>
<td>2.96</td>
<td>2.73</td>
</tr>
<tr>
<td>Lebanon</td>
<td>46.56</td>
<td>46.39</td>
<td>40.14</td>
<td>41.48</td>
<td>36.57</td>
<td>37.81</td>
<td>36.74</td>
<td>40.81</td>
</tr>
<tr>
<td>Libya</td>
<td>3.59</td>
<td>7.48</td>
<td>4.2</td>
<td>3.51</td>
<td>4.49</td>
<td>4.83</td>
<td>4.14</td>
<td>4.61</td>
</tr>
<tr>
<td>Morocco</td>
<td>6.24</td>
<td>4.64</td>
<td>3.62</td>
<td>3.19</td>
<td>3.5</td>
<td>3.4</td>
<td>3.22</td>
<td>3.97</td>
</tr>
<tr>
<td>Oman</td>
<td>13.06</td>
<td>20.52</td>
<td>14.69</td>
<td>12.16</td>
<td>11.64</td>
<td>12.75</td>
<td>12.65</td>
<td>13.93</td>
</tr>
<tr>
<td>Qatar</td>
<td>4.32</td>
<td>5.28</td>
<td>4.2</td>
<td>6.28</td>
<td>4.55</td>
<td>6.96</td>
<td>5.44</td>
<td>5.29</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>10.72</td>
<td>12.31</td>
<td>10.3</td>
<td>7.25</td>
<td>7.87</td>
<td>8.41</td>
<td>7.76</td>
<td>9.23</td>
</tr>
<tr>
<td>Sudan</td>
<td>33.1</td>
<td>37.81</td>
<td>31.34</td>
<td>12.53</td>
<td>11.26</td>
<td>10.81</td>
<td>29.04</td>
<td>23.7</td>
</tr>
<tr>
<td>Syria</td>
<td>9.36</td>
<td>27.74</td>
<td>20.93</td>
<td>16.03</td>
<td>24.11</td>
<td>20.76</td>
<td>24.87</td>
<td>20.54</td>
</tr>
<tr>
<td>Tunisia</td>
<td>6.95</td>
<td>6.18</td>
<td>5.72</td>
<td>7.52</td>
<td>6.91</td>
<td>7.62</td>
<td>7.35</td>
<td>6.89</td>
</tr>
<tr>
<td>UAE</td>
<td>7.02</td>
<td>10.39</td>
<td>9.55</td>
<td>7.79</td>
<td>8.1</td>
<td>8.36</td>
<td>7.57</td>
<td>8.4</td>
</tr>
<tr>
<td>Yemen</td>
<td>2.92</td>
<td>9.45</td>
<td>6.07</td>
<td>4.68</td>
<td>5.44</td>
<td>10.23</td>
<td>8.51</td>
<td>6.76</td>
</tr>
<tr>
<td>Total</td>
<td>8.03</td>
<td>10.33</td>
<td>8.47</td>
<td>6.74</td>
<td>7.57</td>
<td>7.98</td>
<td>7.52</td>
<td>8.09</td>
</tr>
</tbody>
</table>

Table 6 presents the ratio of total intra-Arab trade to total external trade during the period 1993-2003. It shows the significance of intra-Arab trade for each country. The importance of intra-Arab trade varied for different Arab countries. For example, the share of Oman’s intra-Arab trade in its total trade declined from 22.56 per cent in 1993 to 17.81 per cent in 2003. Lebanon’s share fluctuated, firstly decreasing from 16.39 per cent in 1993 to 10.16 per cent in 1995, and then increasing to around 17 per cent in 2002 and 2003.

Table 6: Significance of Intra-Arab Trade

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan</td>
<td>24.26</td>
<td>26.89</td>
<td>29.03</td>
<td>29.64</td>
<td>31.52</td>
<td>26.86</td>
<td>24.73</td>
<td>25.51</td>
<td>31.13</td>
<td>31.84</td>
<td>33.34</td>
</tr>
<tr>
<td>Emirates</td>
<td>7.20</td>
<td>7.20</td>
<td>7.30</td>
<td>6.93</td>
<td>4.85</td>
<td>6.41</td>
<td>7.52</td>
<td>5.44</td>
<td>6.73</td>
<td>6.32</td>
<td>6.80</td>
</tr>
<tr>
<td>Bahrain</td>
<td>29.67</td>
<td>26.80</td>
<td>27.54</td>
<td>28.06</td>
<td>29.28</td>
<td>19.86</td>
<td>17.30</td>
<td>15.87</td>
<td>18.42</td>
<td>19.10</td>
<td>22.02</td>
</tr>
<tr>
<td>Tunisia</td>
<td>6.69</td>
<td>6.53</td>
<td>7.18</td>
<td>7.56</td>
<td>6.22</td>
<td>5.92</td>
<td>7.08</td>
<td>7.98</td>
<td>7.42</td>
<td>6.84</td>
<td>6.82</td>
</tr>
<tr>
<td>Algeria</td>
<td>2.53</td>
<td>3.51</td>
<td>2.78</td>
<td>2.14</td>
<td>2.62</td>
<td>2.30</td>
<td>2.18</td>
<td>1.66</td>
<td>2.87</td>
<td>3.20</td>
<td>2.99</td>
</tr>
<tr>
<td>Saudi</td>
<td>7.31</td>
<td>7.85</td>
<td>8.36</td>
<td>8.86</td>
<td>9.28</td>
<td>8.45</td>
<td>9.21</td>
<td>6.52</td>
<td>7.52</td>
<td>7.61</td>
<td>7.69</td>
</tr>
<tr>
<td>Sudan</td>
<td>33.14</td>
<td>28.17</td>
<td>29.87</td>
<td>33.19</td>
<td>34.23</td>
<td>14.87</td>
<td>19.66</td>
<td>13.30</td>
<td>12.02</td>
<td>11.22</td>
<td>27.19</td>
</tr>
<tr>
<td>Somalia</td>
<td>39.28</td>
<td>35.03</td>
<td>44.43</td>
<td>38.83</td>
<td>33.59</td>
<td>34.44</td>
<td>33.67</td>
<td>25.15</td>
<td>22.81</td>
<td>26.94</td>
<td>28.08</td>
</tr>
<tr>
<td>Iraq</td>
<td>53.16</td>
<td>62.29</td>
<td>65.51</td>
<td>57.53</td>
<td>21.39</td>
<td>8.11</td>
<td>5.90</td>
<td>7.93</td>
<td>11.57</td>
<td>13.28</td>
<td>9.67</td>
</tr>
<tr>
<td>Qatar</td>
<td>10.21</td>
<td>10.62</td>
<td>10.19</td>
<td>7.91</td>
<td>7.47</td>
<td>10.06</td>
<td>8.62</td>
<td>8.55</td>
<td>6.85</td>
<td>10.94</td>
<td>8.03</td>
</tr>
<tr>
<td>Kuwait</td>
<td>5.00</td>
<td>6.08</td>
<td>6.10</td>
<td>5.74</td>
<td>5.99</td>
<td>7.16</td>
<td>6.98</td>
<td>6.70</td>
<td>7.21</td>
<td>7.33</td>
<td>6.44</td>
</tr>
<tr>
<td>Lebanon</td>
<td>16.39</td>
<td>15.41</td>
<td>10.16</td>
<td>14.86</td>
<td>12.64</td>
<td>12.08</td>
<td>12.34</td>
<td>15.79</td>
<td>14.38</td>
<td>17.04</td>
<td>17.23</td>
</tr>
<tr>
<td>Libya</td>
<td>5.55</td>
<td>5.81</td>
<td>6.67</td>
<td>5.66</td>
<td>7.21</td>
<td>8.08</td>
<td>7.62</td>
<td>6.21</td>
<td>7.32</td>
<td>7.62</td>
<td>6.59</td>
</tr>
<tr>
<td>Egypt</td>
<td>6.60</td>
<td>6.61</td>
<td>6.09</td>
<td>6.02</td>
<td>6.24</td>
<td>6.91</td>
<td>6.91</td>
<td>8.54</td>
<td>7.74</td>
<td>11.72</td>
<td>12.12</td>
</tr>
<tr>
<td>Morocco</td>
<td>10.45</td>
<td>9.17</td>
<td>7.92</td>
<td>8.04</td>
<td>8.68</td>
<td>5.03</td>
<td>4.29</td>
<td>8.91</td>
<td>8.89</td>
<td>8.68</td>
<td>7.16</td>
</tr>
<tr>
<td>Mauritania</td>
<td>4.45</td>
<td>2.98</td>
<td>3.01</td>
<td>1.74</td>
<td>6.55</td>
<td>4.09</td>
<td>2.80</td>
<td>3.35</td>
<td>4.01</td>
<td>3.87</td>
<td>4.44</td>
</tr>
<tr>
<td>Yemen</td>
<td>20.66</td>
<td>24.23</td>
<td>20.97</td>
<td>11.50</td>
<td>12.20</td>
<td>20.80</td>
<td>19.69</td>
<td>17.03</td>
<td>18.81</td>
<td>22.28</td>
<td>24.44</td>
</tr>
</tbody>
</table>

Source: Arab Monetary Fund (2004).

1.4.2 Intra-Arab Investment

Parallel to the movement of goods among Arab countries, there have been concomitant flows of intra-Arab investment, driven largely by oil-based surplus capital and remittances. It can be seen from Table 7 that intra-Arab investments are on an upward trend and their total reached about $16.8 billion during the 1997-2003
period, which equalled one third of aggregate foreign direct investment in the Arab region. Intra-Arab investment also is very stable, despite considerable geopolitical instability in the region. Intra-Arab investment averaged $2.4 billion annually during the period considered, and an estimated $26 billion of Arab capital flows out annually. This means less than one tenth of these outflows go to other Arab countries.\(^7\) Table 7 also reveals that Lebanon has the highest intra-Arab FDI as a percentage of GDP (2.8%), followed by Sudan (2.1%), Tunisia (1.3%) and Syria (0.9%).

Table 7: Intra-Arab Investment Flows in Each Country ($ million)

<table>
<thead>
<tr>
<th>Country</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>Total</th>
<th>Average</th>
<th>Intra-Arab FDI/GDP* (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan</td>
<td>6</td>
<td>3</td>
<td>14</td>
<td>14</td>
<td>9</td>
<td>12</td>
<td>8</td>
<td>66</td>
<td>9</td>
<td>0.11</td>
</tr>
<tr>
<td>UAE</td>
<td>0</td>
<td>380</td>
<td>176</td>
<td>196</td>
<td>215</td>
<td>218</td>
<td>650</td>
<td>1.835</td>
<td>262</td>
<td>0.40</td>
</tr>
<tr>
<td>Bahrain</td>
<td>0</td>
<td>16</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>160</td>
<td>192</td>
<td>381</td>
<td>54</td>
<td>0.64</td>
</tr>
<tr>
<td>Tunisia</td>
<td>135</td>
<td>290</td>
<td>506</td>
<td>669</td>
<td>56</td>
<td>75</td>
<td>39</td>
<td>1.771</td>
<td>253</td>
<td>1.27</td>
</tr>
<tr>
<td>Algeria</td>
<td>0</td>
<td>122</td>
<td>86</td>
<td>87</td>
<td>319</td>
<td>54</td>
<td>65</td>
<td>732</td>
<td>105</td>
<td>0.19</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>26</td>
<td>198</td>
<td>82</td>
<td>77</td>
<td>626</td>
<td>625</td>
<td>562</td>
<td>2.197</td>
<td>314</td>
<td>0.17</td>
</tr>
<tr>
<td>Sudan</td>
<td>143</td>
<td>70</td>
<td>152</td>
<td>331</td>
<td>538</td>
<td>542</td>
<td>391</td>
<td>2.166</td>
<td>309</td>
<td>2.13</td>
</tr>
<tr>
<td>Syria</td>
<td>328</td>
<td>212</td>
<td>224</td>
<td>191</td>
<td>44</td>
<td>47</td>
<td>39</td>
<td>1.084</td>
<td>155</td>
<td>0.90</td>
</tr>
<tr>
<td>Oman</td>
<td>19</td>
<td>42</td>
<td>46</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>107</td>
<td>15</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Qatar</td>
<td>0</td>
<td>0</td>
<td>58</td>
<td>61</td>
<td>66</td>
<td>69</td>
<td>10</td>
<td>263</td>
<td>38</td>
<td>0.23</td>
</tr>
<tr>
<td>Kuwait</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Lebanon</td>
<td>312</td>
<td>400</td>
<td>500</td>
<td>350</td>
<td>225</td>
<td>650</td>
<td>850</td>
<td>3.287</td>
<td>470</td>
<td>2.79</td>
</tr>
<tr>
<td>Libya</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>56</td>
<td>60</td>
<td>58</td>
<td>175</td>
<td>25</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>495</td>
<td>372</td>
<td>258</td>
<td>113</td>
<td>68</td>
<td>79</td>
<td>103</td>
<td>1.488</td>
<td>213</td>
<td>0.25</td>
</tr>
<tr>
<td>Morocco</td>
<td>48</td>
<td>39</td>
<td>22</td>
<td>22</td>
<td>9</td>
<td>13</td>
<td>672</td>
<td>825</td>
<td>118</td>
<td>0.28</td>
</tr>
<tr>
<td>Yemen</td>
<td>10</td>
<td>20</td>
<td>16</td>
<td>68</td>
<td>4</td>
<td>139</td>
<td>126</td>
<td>382</td>
<td>55</td>
<td>0.55</td>
</tr>
</tbody>
</table>

* Average for 1997-2003 period.

In value terms, the largest intra-Arab investment host countries are Lebanon, Saudi Arabia, Sudan, the United Arab Emirates and Egypt (see Table 8). The oil countries, particularly Kuwait, Saudi Arabia, and the UAE are expected to export investment. However, some non-oil countries, for example Jordan and Syria are also major exporters of investment.

Table 8: Stock of Intra-Arab Investment, 1997-2003 ($ million)

<table>
<thead>
<tr>
<th>Source countries</th>
<th>Jordan</th>
<th>UAE</th>
<th>Bahrain</th>
<th>Tunisia</th>
<th>Algeria</th>
<th>Sudan</th>
<th>Sudan</th>
<th>Syria</th>
<th>Oman</th>
<th>Qatar</th>
<th>Kuwait</th>
<th>Lebanon</th>
<th>Libya</th>
<th>Egypt</th>
<th>Morocco</th>
<th>Yemen</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan</td>
<td>0</td>
<td>15</td>
<td>98</td>
<td>102</td>
<td>433</td>
<td>398</td>
<td>70</td>
<td>12</td>
<td>8</td>
<td>47</td>
<td>0</td>
<td>75</td>
<td>0</td>
<td>50</td>
<td>1.309</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UAE</td>
<td>7</td>
<td>10</td>
<td>226</td>
<td>65</td>
<td>440</td>
<td>401</td>
<td>186</td>
<td>30</td>
<td>88</td>
<td>0</td>
<td>771</td>
<td>99</td>
<td>137</td>
<td>433</td>
<td>14</td>
<td>2.906</td>
<td></td>
</tr>
<tr>
<td>Bahrain</td>
<td>0</td>
<td>23</td>
<td>2</td>
<td>33</td>
<td>52</td>
<td>0</td>
<td>12</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>23</td>
<td>16</td>
<td>0</td>
<td>179</td>
<td></td>
</tr>
<tr>
<td>Tunisia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>24</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Algeria</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Saudia</td>
<td>26</td>
<td>343</td>
<td>48</td>
<td>518</td>
<td>20</td>
<td>648</td>
<td>363</td>
<td>15</td>
<td>55</td>
<td>0</td>
<td>1.60</td>
<td>64</td>
<td>607</td>
<td>327</td>
<td>276</td>
<td>5.312</td>
<td></td>
</tr>
<tr>
<td>Sudan</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>26</td>
<td>431</td>
<td>164</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>96</td>
<td>0</td>
<td>83</td>
<td>2</td>
<td>6</td>
<td>820</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oman</td>
<td>0</td>
<td>90</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>Qatar</td>
<td>4</td>
<td>239</td>
<td>1</td>
<td>15</td>
<td>25</td>
<td>65</td>
<td>279</td>
<td>16</td>
<td>3</td>
<td>0</td>
<td>150</td>
<td>0</td>
<td>96</td>
<td>2</td>
<td>5</td>
<td>901</td>
<td></td>
</tr>
<tr>
<td>Kuwait</td>
<td>2</td>
<td>740</td>
<td>293</td>
<td>438</td>
<td>26</td>
<td>142</td>
<td>50</td>
<td>290</td>
<td>1</td>
<td>107</td>
<td>613</td>
<td>0</td>
<td>387</td>
<td>30</td>
<td>9</td>
<td>3.127</td>
<td></td>
</tr>
<tr>
<td>Lebanon</td>
<td>7</td>
<td>14</td>
<td>1</td>
<td>20</td>
<td>263</td>
<td>75</td>
<td>140</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>1</td>
<td>9</td>
<td>556</td>
<td></td>
</tr>
<tr>
<td>Libya</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>380</td>
<td>262</td>
<td>0</td>
<td>47</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>44</td>
<td>0</td>
<td>1</td>
<td>738</td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>117</td>
<td>234</td>
<td>96</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>7</td>
<td>470</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morocco</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>72</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yemen</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>110</td>
<td>9</td>
<td>0</td>
<td>36</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>168</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


1.4.3 Intra-Arab Labour Flows

Intra-regional migration has played a dominant role in the MENA region. The consensus seems to be that intra-regional labour migration has had positive labour market outcomes for both receiving and sending countries and fostered closer economic linkages between the two. The oil price boom of the 1970s unleashed historically unprecedented labour movements within the region. The catalyst was an
‘open door’ labour market policy adopted by the oil-rich Gulf countries. Expatriates migrated in droves without visible restrictions, while the Gulf countries actually competed with each other to attract expatriate labour during the oil boom of the 1970s.

The open door labour market policy was underpinned by ambitious state-led programs of development that used burgeoning oil revenues to finance rapid expansion of free health care and education as well as massive investment in infrastructure projects to upgrade transport and communications. This inevitably created labour shortages across the entire skill spectrum and shaped immigration policies of the Gulf States. Geographic proximity as well as cultural and linguistic similarities reinforced the economic incentives unleashed by the labour shortages that erupted in the Gulf countries. The labour market responses were impressive. As one author [Yousef, 2005, pp.6-7] notes:

"In the mid-1980s, non-nationals represented close to 70 percent of the total work force and almost 26 percent of the population in the Gulf countries. Arab workers during this period outnumbered those from other regions by a ratio of 3:1. By some estimates, close to 10 percent of Egypt’s labour force and almost 15 percent of the Republic of Yemen’s were employed abroad in the region in the 1980s. From 1975 to 1985, the peak years of oil-led growth in the region, the Gulf countries experienced unprecedented labour force growth of 7.7 percent a year, with growth in Bahrain reaching 10.5 percent and growth in Saudi Arabia reaching 8.1 percent. During this period, the non-national labour force grew at an average annual rate of nearly 13 percent, reaching 15 percent in Bahrain and 17 percent in Saudi Arabia."

The oil price boom that drove intra-regional migration in MENA also triggered massive flows of remittance income to the labour-exporting countries. Such flows clearly had a salutary impact on the living standards of poor families. At the same
time, intraregional migration eased pressures on local labour markets, especially in urban areas, and helped in the alleviation of unemployment.

Figure 1: Worker’s remittances (US$ million) 1975-2002 selected Arab countries

While the oil price boom of the 1970s fed massive labour movements within the region with salutary consequences, the collapse of oil prices in the early 1980s and the first Gulf War led to a reversal of such movements and had adverse effects on the labour market. The reduced revenues from the decline in oil prices fed into reduced demand for expatriate labour. The share of expatriates in the Gulf state work-force fell from an average of 67 per cent in 1995 to an average of 64 per cent in 2000, with Saudi Arabia registering the sharpest decline, from 64 per cent to 55 per cent over the same period.
Geopolitical developments also ruptured the closer integration among Arab economies fostered by intra-regional migration of the 1970s and early 1980s. The 1991 Gulf War turned out to be a turning point. One study documents the dramatic impact of this geopolitical event:

"The repatriation of millions of expatriate workers from the Gulf countries …created huge pressures on the labour forces of the labour-exporting countries, thus causing sharp, temporary increases in unemployment in addition to the loss of remittance income. Among the repatriated workers were an estimated 150,000 Palestinians, 300,000 Jordanians, 500,000 Egyptians, and 800,000 Yemenis, who fled the conflict." (Yousef, 2005, p.11).

1.5 Research Problems

Following this introductory look at the landscape that encompasses Arab economies we are led to a number of research questions to which this thesis will attempt to provide answers:

1- Why is intra-Arab trade less than what it might be? And how can it be extended in order to achieve fuller economic integration among Arab countries?

2- How can Arab countries extend their capital flows in an effort to attain greater economic integration among themselves?

3- Are there potential flows of labour and remittances among Arab countries that may indicate the potential of achieving greater economic integration?

4- Is there an economic convergence occurring among Arab countries that may generate further economic integration in the Arab region?
1.6 Objectives of the Thesis

Although several studies have focused on various economic issues in the Arab region, the literature on regional economic integration among Arab countries points to a need for more research. During specific periods, and within specific Arab countries, some previous studies focused on trade to investigate Arab economic integration, and others focused on investment. As a result, some Arab countries have not been investigated and particular pertinent periods have not been involved, such as the periods after September 11, 2001, and the Gulf war. Accordingly, it seems that there is a gap that can be filled by other studies. The main objective of this study is to investigate several aspects related to regional Arab economic integration, including:

1- The nature of intra-Arab trade.

2- The nature of intra-Arab capital flows.

3- Intra-Arab labour mobility.

4- The extent of macroeconomic convergence of Arab countries.

The research will mainly involve empirical tests to investigate intra-Arab trade, intra-Arab capital flows and intra-Arab labour flows. It will also examine the extent of macroeconomic convergence in the Arab region, for which there is a lack of existing empirical studies. The research will also offer necessary economic modelling to integrate effects of new economic geography, regionalisation, globalisation and spatial dynamics on economic integration in the Arab region.
1.7 Methodology and Sources of Data

1.7.1 The Gravity Model

Gravity models afford many useful applications; they provide econometric explanations of bilateral import demand with a variety of explanatory variables, such as the GDPs of both exporting and importing countries, the populations of both exporting and importing countries, and the distance between exporting and importing countries.\(^8\)

The gravity model emerged in the early 1960s. It is considered one of the most successful empirical models explaining economic interaction between countries in terms of bilateral trade flows. The gravity model can be applied to international trade flows from origin \(i\) to destination \(j\) (Tinbergen, 1962). The model has also been justified by Linnemann (1966); he stated that usually the specification of a poor location goes together with high multilateral residuals. As multilateral residuals are obtained from the bilateral ones, countries with a poor economic situation should have many higher bilateral residuals.

The gravity model analytical framework is the most commonly used analytical tool to examine bilateral trade. Although the theoretical foundations of the model were not available until the late 1970s, the gravity framework has been used extensively and has turned out to be reasonably successful in explaining aspects of international trade. Several steps have been made towards formalization and improvement of the model. Anderson (1979) showed that the gravity model can be derived from expenditure share equations which assume that commodities are distinguished by place of production. He also believed that the gravity equation was a useful tool in analyzing empirical trade

data. He developed a theoretical explanation for the gravity equation applied to commodities and stated three distinct interpretations of the gravity models which:

(i) Explained the multiplicative form of the equation.

(ii) Permitted an interpretation of distance in the equation, and showed how it could be used for estimating the effect of instrument changes.

(iii) Showed how the ambiguous assumption of similar structure across regions or countries directly explained identical expenditure functions.

Anderson (1979) demonstrated the areas for theoretical development that may be possible. A further development of the model is required for using cross-section and time series data. Anderson (1979) also stated the following two requirements:

1- A theory of how short-run responses to changes in price (revealed over time) are related to long-run responses (revealed over the cross-section).

2- A theory of how short-run responses to changes in income are related to long-run responses.

Anderson (1979) explained that the simplest possible gravity-type model stems from a rearrangement of a Cobb-Douglas expenditure system that assumes each country completely specializes in its own good production. Such a model implies there is one good for each country if there are no existing tariffs or transport costs. Anderson showed that the properties of expenditure systems could be used to derive the gravity equation. In this regard, the gravity model is an alternative method of doing cross-sectional budget studies.
In 1984, Helpman demonstrated that the gravity model can be derived from the models of trade in differentiated products. Bergstrand (1985) confirmed the demonstration of Helpman. Deardorff (1984, 1995) explained that the gravity model can be derived from about any credible model of trade, and can be used for representing empirical regularities and patterns of trade that are not easily predictable by available trade theories. Another contribution by Frankel et al (1995) used the gravity model to show the significance of intra-trade in the Asia Pacific Economic Co-operation region. Their findings showed that intra-trade in the region is higher than the pattern predicted by likely determinants of the volume of trade. Accordingly, they provided evidence for the desirability of a trading-bloc in the Pacific region.

Biased estimation of economic integration can be attributed to incorrect specification of the distance variable in the standard gravity model. Although Polak (1996) suggested a solution for the problem related to biasing of the distance variable in the gravity model, his suggestion did not eliminate the bias. Polak (1996) derived a gravity model with a relative distance variable in addition to the variable of absolute distance. Feenstra et al (1998) argued that the theoretical foundations for the gravity equation are general, while the empirical performance of the gravity equation is specific to the type of goods examined. Most of the existing theories for the gravity equation depend on the assumption of differentiated goods. Feenstra et al (1998) showed that the gravity equation can also be derived from a model of reciprocal trade in homogeneous goods.

Theoretically, the gravity equation should have lower domestic income elasticity in the case of homogeneous goods exports than in the case of differentiated goods. This occurs due to the effect of the home market, which depends on impediments to entry.
By using cross-sectional gravity models, Feenstra et al (1998) quantified the home market effect and found that domestic income export elasticities are indeed substantially higher for differentiated goods than for homogeneous goods. Feenstra, Markusen, and Rose (2001) emphasized that despite the gravity equation’s empirical success there are some theoretical disputes because of a lack of understanding of the theoretical foundations of the gravity model. While the model's form basically consists of a factor that is more related to geographic and spatiality factors, it estimates the pattern of international trade. The model has also been used to test several hypotheses that relate to purer economic theories of trade as well, such as how relative factor abundances affect trade.

Beers (2000) considered the gravity model and analysed its specification problem. He studied the model with regard to the distance variable and its implications for estimating an economic integration dummy, which is related to a modified version of the gravity model derived by Deardorff (1998). The incorrectly specified bilateral distance variable in the standard gravity model caused a problem related to the economic integration dummy. To solve this problem, Beers (2000) discussed two approaches: (i) A model introduced by Polak (1996) including a relative distance variable; (ii) An extension of the model suggested by Polak (1996) which seemed closely connected to the model of Deardorff (1998). The gravity model derived by Polak and Deardorff (1996, 1998, respectively) has been extended by Beers (2000). The gravity model is considered a successful empirical performance model, and it is also commonly invoked to assess trade patterns between countries as well as within preferential trade areas (Poncet, 2006). This successful empirical performance indicates
the model may be a useful instrument for analysing the evolution of regional integration.

1.7.2 The Gravity Model in Arab Literature

1.7.2.1 Intra-Arab Trade

Limam and Abdalla (1989) applied the gravity model to evaluate the potential success of various Arab Free Trade Area (AFTA) agreements. They used the model to explore intra-Arab trade flows and their exports and imports with industrial countries as well as with developing countries. Bolbol and Fatheldin (2005) used an extended gravity model for analysing intra-Arab exports. Their model was estimated with two types of data: data on intra-Arab trade and data on Arab trade with their major world partners. However, in spite of extensive use of gravity models to measure bilateral trade among countries, they were not used to measure intra-Arab trade before Al-Atrash and Yousef (2000). In this thesis, a gravity model is estimated to address the issue of whether the extent of intra-Arab trade has been appropriate.

1.7.2.2 Intra-Arab FDI

Over the last decade, there has been a concomitant increase in global exports and FDI, with both increasing at a rate of 6 per cent annually. Both global exports and FDI have been largely affected by the same forces, such as capital account liberalization, income growth, vertical production methods and more intensity of trade and capital flows between countries with similarly high levels of income. Given this common development, it could be said that the gravity equation may be useful in modelling intra-Arab FDI flows. As for intra-Arab FDI, it can also be explained by the fundamentals of a gravity model.
Although there is no formal theory that can derive the basic gravity model for FDI, it could be assumed that there is a positive correlation with home country income due to greater available investable capital being a generator of higher income. Additionally, there is also a positive correlation with host country income due to the motivation to serve the market. The correlation with distance is positive when FDI substitutes for exports due to higher costs of transport, and it is negative when longer distances are associated with unfamiliarity with local cultures and as a result higher operational costs.

The gravity model that will be applied in this study predicts the value of trade between country $i$ and country $j$ based on several economic variables, such as their GDPs and the distance between them. This model is as follows:

$$T_{ij} = \alpha_0 Y_i^{\alpha_1} Y_j^{\alpha_2} D_{ij}^{\alpha_3}$$  \hspace{1cm} (1.a)

Where $T_{ij}$ is the value of trade between country $i$ and country $j$, $\alpha_0$ is a constant, $Y_i$ and $Y_j$ are the real GDPs of country $i$ and country $j$ respectively, and $D_{ij}$ is the geographic distance between the capital cities of countries $i$ and $j$.

The expectation is that trade will be positively affected by GDP ($\alpha_1, \alpha_2 \geq 0$) and negatively affected by distance ($\alpha_3 \leq 0$).
By taking logarithms, the gravity model equation can be converted to a linear form for econometric analysis. The basic model then takes the form of the following equation:

\[ \text{Ln (Bilateral Trade Flow)} = \alpha_0 + \alpha_1 \text{Ln (GDP Country } i) + \alpha_2 \text{Ln (GDP Country } j) + \alpha_3 \text{Ln (Distance)} + \varepsilon \]  

(1.b)

(Where \( \varepsilon \) is a random disturbance term)

An important part of this aspect of the research extends the above model by including additional independent variables based on theoretical considerations. The model also includes variables that capture effects such as a shared border, oil-exports, sub-regional trade agreements, political instability, opportunity cost asymmetry, and technological differences.

1.8 Outline of the Thesis

The chapter sequence of this thesis is as follows.

Chapter 2

Chapter 2 discusses economic integration in terms of theory, phases and effects. This chapter is divided into two parts. Part one covers the concept and the theory of economic integration. The difference between horizontal integration and vertical integration is clarified in this part. The production method for economic integration as well as the commercial approach to economic integration and regional integration is also included in this part. Part two of this chapter considers economic integration phases and effects. It also considers economic integration effects in the short term and the long term.
Chapter 3

Chapter 3 comprises a review of most of the literature related to Arab economic integration and regional economic integration. In this chapter, numerous previous studies related to economic integration in general and to the Arab region in particular are reviewed.

Chapter 4

Chapter 4 investigates the nature of intra-Arab trade. The gravity model is applied in this chapter. The data used in this chapter have been obtained from the IMF, AMF and World Development Indicators CD, 2004. Econometric analysis is applied to examine the intra-Arab trade in order to find out the extent to which intra-Arab trade is possible.

Chapter 5

Chapter 5 investigates intra-Arab capital flows. A model of Arab capital movements based on the idea of the gravity model is applied. This should indicate the potential for Arab economic integration. The data applied in this chapter is collected from several sources, such as the AMF, the Inter-Arab Investment Guarantee Corporation, and the World Development Indicators CD, 2004. Econometric analysis is applied to examine intra-Arab FDI.

Chapter 6

Chapter 6 investigates intra-Arab labour mobility. In this Chapter, a model is applied to investigate the flows of remittances from Arab countries to the other Arab countries in order to determine the extent of Arab economic integration, and then which countries
are more likely to extend their economic integration through labour flows. Data pertaining to remittances of expatriate workers among Arab countries has been obtained from the World Development Indicators CD, 2004. The contribution of such remittances to economic integration of the expatriate workers' country is explained in this chapter. In this chapter, the relationship between oil-exporting countries and labour flows within the Arab sub-regions is explained.

Chapter 7

Chapter 7 will summarise the major conclusions derived throughout the research. Suggestions for future research will be provided at the end of this chapter.
Chapter Two

The Nature and Theory of Economic Integration

“… formal integration of the area, though demanding new responses by economic agents in this era of globalization, entailed a redistribution of economic activity in this new global regional market. The effective construction of this market was achieved not only by the elimination of formal impediments to factor movements but also through the creation of physical infrastructures and the implementation of policies designed to facilitate these movements.” (Dias, 2004: 295)

2.1 THE NATURE OF ECONOMIC INTEGRATION

2.1.1 Introduction

Economic integration has been considered as being one of the most important topics in the field of economic trade and development. The theory of economic integration refers to removal of trade obstacles only amongst countries that amalgamate their commercial policies and their economies. The formation of economic integration amongst certain countries involves some types of integration phases, such as a free trade area, customs unions and a common market. It removes trade obstacles such as tariffs between member countries, whilst partner countries discriminate their prices with respect to non-partner countries.

This chapter provides an overview of the traditional economic analysis of economic integration. It is divided into three main sections. Section 1 provides a discussion of some general aspects of economic integration, including a summary of the various forms integration may take. An overview of the economic theory of integration is

---

presented in Section 2. Aspects of this discussion will be related to sub-regional integration in the Arab region in Section 3. While discussion in this chapter concentrates on the traditional economic analysis of integration, social and political aspects are also important, and these will be referred to at various stages in the discussion.

2.1.2 The Definition of Economic Integration

In traditional parlance, economic integration occurs when two or more countries join together to form a larger economic space (Root 1994, 252). Economic integration involves commercial relations between independent countries; it also has important implications for social and political relationships as well. Economic integration can be defined as a process that includes procedures that aim to eliminate or reduce economic barriers between countries. These may involve the flow of goods and services, factors of production such as labour and capital, and also financial transactions between countries.

The definition of economic integration has created some issues in terms of the relationship between this concept and other concepts, such as unification, coordination and regional cooperation. The concept of economic integration includes social integration as well as international cooperation. In general, it is possible to distinguish between two main directions in regards to the concept of economic integration. These are discussed below.

---

11 The exact wording of this definition varies across different texts.
The First Direction

The first direction is a general direction that defines integration as a type of coordination between different countries without touching the sovereignty of all sectors of their economies. However, in the economic literature integration is not only limited in meaning to economic aspects, as social aspects may be included in the integration. It could be said that once there are commercial relations between independent countries, it is a sign of economic integration between them. Therefore, Balassa (1969) suggested two bases of economic integration in terms of a process or situation, respectively.

Economic Integration as a Process

Economic integration as a process includes the procedures that aim to eliminate economic discrimination between different countries. In addition, economic integration as a process means that it is being done through several stages, which all come under the title of integration. In line with this description, one of the characteristics of economic integration is to generate a sequence of unbalanced stages in several economic fields. This is due to the changes introduced by the procedures and policies that are applied to achieve the integration. It reveals the importance of the linkage between these stages and the need to clarify the pattern of change. It is also important to determine the factors generating each stage and the resulting benefits and burdens for every involved country.

Economic Integration as a Situation

Economic integration as a situation is distinguished by economic balance among the involved countries, with all types of economic discrimination between the involved countries disappearing. It is important to differentiate between integration and
cooperation. While cooperation is represented in all transactions that aim to reduce the discrimination between products and economic units, economic integration involves all procedures that force termination of some types of discrimination. For example, eliminating the commercial barriers between countries is considered economic integration, since integration requires eliminating discrimination between economies and products or services in a specific region without referring to transactions incurred in the course of international cooperation. In order to attain economic integration, some adjustments must be made to the economies of the involved countries. Consequently, economic integration is considered more deep than economic cooperation.

The Second Direction

The second direction is more specific than the first direction; it considers integration as a process of developing the economic relations between countries. The creation of new forms of joint establishments and interactions that affect state sovereignty is also considered economic integration in this direction. Hence, the issue of the relationship between integration and state sovereignty is raised. This direction can emphasize the importance of the link between the integration process and voluntary economic concessions of a country, especially in the areas where a country is interested in promoting economic integration.

The main differences between economic integration and cooperation are in terms of quantity and quality. The objective of economic cooperation is confined to reducing the effects of obstacles in international economic relationships in order to facilitate the international trade and exchange process. Economic integration goes further by including elimination of all trade barriers and obstructions to capital and labour flows.
Economic integration also concerns finding the optimal solutions to these problems in order to increase the efficiency and strength of the economic relation between countries. Consequently, international trade agreements that include objectives of activation of international trade come under the concept of international economic cooperation, while the process of eliminating the existing barriers in the way of international trade movement (both goods and factor mobility) between the countries comes under the heading of economic integration.

Economic integration is not a spontaneous process, since it does not occur between countries without a plan or regardless of existing economic and social conditions and countries’ production patterns. In addition, economic integration commonly involves countries with similar and close social and economic conditions and production styles. Countries become involved in economic integration based on their free decision. Members of an economic integration block establish a common market in addition to a minimum level of coordination in their economic policies, and agree to eliminate all inconsistencies in the commercial relations between them. Moreover, they do not bring in new restrictions on their intra-trade. Consequently, economic integration becomes an intentional action done by two or more countries, which eliminates all restrictions on the commercial transactions and production factor flows between them. In order to increase productivity and provide equal production opportunities for all members, economic integration necessarily involves economic policy coordination and arrangement of the production operations between members. It is important to have an honest desire for the integration policy. It is also important that all members accept to give away some of their state sovereignty.

---

Members of an economic integration agreement must follow procedures and policies required to create the needed changes and improvements in their economic structures that ensure the success and continuation of economic integration between them. These policies and procedures generally take two broad forms: (i) the policies and procedures needed to establish a united market, which include actions that lead to the elimination of all customs barriers between members and create a common external tariff against the foreign world and a system of indirect taxes; (ii) the policies and procedures needed to coordinate and harmonize the current economic policies for every member in the integration agreement. These policies include several procedures related to internal and external economic policies, especially those that are related to monetary, financial and external trade policies and economic stability.

Hence, it can be said that economic integration among countries means that these countries are in a position that reveals interdependence amongst them in terms of one or more characteristics or activities. In addition, integration means that every player should further the aim of interdependence. In addition, in terms of creation of integration, we can differentiate between two types of integration as discussed below.

**Coercive Integration**

Coercive integration is integration that has been forced on specific units involved in the integration. Typically, the integrating units force the others to become integrated units. Coercive integration can result from military occupation when the occupier country forces the occupied country to become an integrated country. Therefore, the main
feature of this type of integration is exploitation of a weaker country for the benefit of an occupier country.

**Voluntary Integration**

In this type of integration, the countries join the group voluntarily based on their interests to do so. This type can reach a union block in which each individual country's characteristics vanish and are replaced by common characteristics. Therefore, it can be said that such economic integration changes the independence levels of the involved countries. It is different from the situation of agreements that do not lead to establishing an independent or permanent block. This type of integration usually happens between countries geography close to each other, or that have similar characteristics such as religion, culture, history and habits. They also may have similar regional and national relations or similar political, social and economic systems. They may also share common benefits.

Economic integration can occur in a specific field of production in one or several sectors located in a specific region that could include a number of countries. The countries involved could all have a common characteristic, for example the non-aligned countries and the third world countries. Once specific economic activities and their potential for integration are identified, the integration can be based, for example, on different sectors, such as agricultural activities, industrial activities and service activities. For every activity, there can be a specific strategy to be followed to achieve the best from the integration. Accordingly, members should consider the capabilities of each individual country and needed activities, and define the requirements of each country’s products and services.
Because successful economic integration may imply a decrease in production of a certain product in a member country, it is important that there is compensation for a country that suffers from the integration (in a Hicks-Kaldor sense). This compensation can be made by the release of some support from other country members and also in the form of benefits from increasing efficiency levels in various economic fields and activities. In addition, an aim can be to eliminate disparities within the economies of member countries. In this regard, it should be mentioned that some sectors or activities complement each other. For example, an agricultural activity may produce raw materials that are used in manufactures. Therefore, it is possible to establish integration between one agricultural sector and another industrial sector between two or more countries. However, this presupposes strength in their relationships, their economic polices, and coordination of their sector plans. Since reaching the optimal volume of production is possible through merging some sectors, economic integration in this case will be in two forms, as described below.

**Horizontal Integration**

Horizontal integration is related to geographical expansion through combining production projects having similar economic activities and producing similar products or services, in order to increase levels of production efficiency and improve the level of service in different locations. This type of integration aims to reduce the negative effects of competition, but may result in the creation of monopoly if the integrated combination processes lead to one firm capturing the major market share in a way such that the consumer does not benefit from the cost reduction. It appeared in the aftermath of World War II in the context of two important underlying circumstances (Al-Kanaani,
2002): (i) the technical and scientific revolution; and (ii) ideological changes at the time. While many countries attempted to achieve their independence after World War II, they also undertook the creation of equitable relationships with countries characterized by similar social and economic systems.

**Vertical Integration**

Vertical integration appeared in the context of military occupation, where the occupier combined the production sectors of the occupied country with its own sectors. Therefore, vertical integration is related to the appearance of economic dependency, which later on became a symbol of the backwardness of the developing countries in their relations with the industrial countries. This type of integration has two forms, backward and forward. Backward integration happens when the production sector merges with the sector that supplies the production requirements to it, while forward integration happens when a production sector merges with a sector that depends on its products.

For a long time in economic science, vertical integration has been viewed as being associated with reduced efficiency and increased costs, based on the idea that the management of a specific sector is not capable of efficiently managing different production processes. However, an improvement in management styles and the ability to obtain support in decision making mean efficiency gains from vertical integration are possible. Some big companies have used vertical integration in order to achieve an international geographical spread to attain some production diversification. Hence, it is possible to combine vertical integration with regional integration.
2.1.3 Regional Integration

Regional integration involves integration between a specific group of countries based on special relationships that may create a kind of bond between them. Some regional integration attempts are based on natural factors or some other human made factors. Some factors represent the use of force through occupation while others arise as a result of technological changes. Viner (1950) distinguished between the trade creation and trade diverting effects of regional integration agreement formation. If partner country production displaced higher cost domestic production then there would be gains through trade creation. However, it would be possible that partner country production displaced lower cost imports from the rest of the world, and this would reduce welfare through trade diversion. He developed the trade-creation and trade-diversion approach to regional trade agreements to help clarify the ambiguity that existed in customs union theory. Viner’s (1950) work showed that trade created by regional agreements was viewed positively; trade-diverting regional agreements were perceived negatively.

Meade (1955) concluded that if trade barriers to non-members took the form of fixed quantitative restrictions, then a regional integration agreement would raise the total welfare of member countries since there would be no possibility that imports from the rest of the world would be displaced. Meade (1955) also explained that welfare increased when the initial tariff weighted change in trade volume was positive. Lipsey (1957) argued that joining with countries that already had a large trade relationship was unlikely to lead to diversion. In reality, countries that were originally major trading partners were commonly the lowest cost source of supply. Lipsey (1957) indicated that relative prices in the domestic markets of member countries would be affected. This would be due to the elimination of tariffs on some imports as a result of the creation of
customs unions. He also explained that there were potentially two primary effects of these prices changes. The first likely effect of these price changes was on the location of production. The second expected effect of these prices changes was the parallel effect on the location of world consumption.

Lipsey (1957) emphasized that even if world production was fixed, the formation of customs unions would cause some changes in consumption patterns due to the changes in relative prices in domestic markets of member countries. Therefore, the consumption effect would exist even if there was no existence of production influences. He also mentioned that it was difficult to measure changes in global welfare. However, it was not impossible to show that global welfare increased with the formation of a trade-diverting customs union. Lipsey and Lancaster (1958) concluded that welfare does not necessarily increase as a result of removing some distortions such as tariffs. Therefore, there was no guarantee that customs unions would increase economic prosperity.

Ohyama (1972), and Kemp and Wan (1976) suggested that it is possible to prevent trade diversion from occurring if external trade barriers take the form of tariffs. They expanded the results obtained by Meade (1955). Kemp and Wan (1976) showed that a sufficiently complicated change in the customs union’s external tariffs can cause external trade to stagnate. Ethier and Horn (1984) considered total welfare of the free trade area members. Fundamentally, the proposition of Ethier and Horn was that zero intra-regional tariffs permitted one to treat members of a custom union as a single nation. Ethier and Horn explained that if internal tariffs were close to zero, then reducing them to zero would raise welfare if it increased tariff revenues obtained on external trade.
Uzuh (1988) investigated the regional economic integration among West Africa countries (ECOWAS)\(^{13}\), stating that increased trade integration among member countries of a regional economic community can enhance the economic performance of member countries. He explained that the process of regional economic integration has been consistent with the development needs of West Africa. He also employed OLS regression in a time series model and demonstrated that ECOWAS countries, both individually and regionally experienced increasing trade levels and this led to increases in economic performance. However, economic performance was enhanced more by trading with the rest of the world than by intra-ECOWAS exchange.

Uzuh (1988) presented three research questions regarding the creation of ECOWAS.

(i) What is the relationship between trade integration and the trading relationships of member countries in the economic community of West African states (ECOWAS)?

(ii) To what extent is the economic performance of the member countries in ECOWAS associated with their changing performance in both intra-and inter-regional trade?

(iii) To what extent has the process of regional economic integration been consistent with the development needs of West Africa?

Uzuh (1988) identified three different periods of international trade theory, these being mercantilist, classical or traditional, and neoclassical or modern. He also referred to

\(^{13}\) ECOWAS comprised Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.
Berry et al (1987)\textsuperscript{14} who noted that during the mercantilist era nations were urged to export and favoured a surplus balance of trade. He also explained that mercantilism encouraged foreign trade rather than domestic trade. In addition, there was a preference for the manufacturing sector rather than the agricultural sector.

The classical or traditional theory of trade is based on the principle of comparative advantage with labour as the variable factor. As a result of this principle, countries will specialize in the export of products with the lowest production opportunity costs. Differences in comparative advantages render trade profitable, even among the most unequal trading country partners. The traditional theory of trade justifies free trade. The supporters of this theory, such as Adam Smith and David Ricardo, argued that free trade is beneficial because it brings about increases in international specialization of production, and increases international division of labour and dexterity.

The neoclassical or modern theory of trade incorporating the Heckscher-Ohlin factor endowments model has played a vital role in the development literature of the less developed countries. The model assumes that the countries which are relatively capital-abundant should concentrate on producing goods that are more capital-intensive. Countries that are relatively labor-abundant should concentrate on products that are more labor-intensive. These results were based on three major assumptions:

\begin{enumerate}
  \item Different products require productive factors in different proportions.
  \item There exists a common worldwide stock of knowledge.
  \item There are country-specific resources or factor endowments.
\end{enumerate}

\textsuperscript{14} Berry, Brian J. L. et al. (1987), pp. 121-127.
Berry, *et al* (1987) pointed out that the weakness of this model is related to these suppositions, particularly that of a common worldwide stock of knowledge. For example, they observed that technology is not easily transferable and is jealously guarded by its owners as a source of competitive advantage, and it is also known that the difference among countries is not only in technology but also in the capacity to alter their resource endowments. Therefore, the assumption of a common worldwide stock of knowledge that would allow the pursuit of the same method of production in an industry in the same manner everywhere lacks credibility.

Uzuh (1988) argued that if there is no economic integration among developing countries, their domestic markets will be limited and may not accommodate an increase of production resulting from economies of scale in their industries. He also stated that the weak purchasing power of a population that actually participates in the commercial economy makes the problem of market limitation more complicated. Accordingly, economic integration has apparently offered a solution to the combined problems of scale and market size. This is one reason for economic integration being important for developing countries. Therefore, many of these countries are entering into integration schemes to create specialization, trade, economic growth and development.

Two main hypotheses are presented in this research. The first hypothesis is that a regional economic community enables its members to specialize more, and thus to improve their export performance. The second hypothesis is that an increase in intra- and inter-regional trade will produce increases in the gross domestic product of members in a regional economic community. Note that from the previous literature review it was pointed out that there could also be pitfalls associated with integration.
efforts. So it is not clear that GDP will increase overall. This is a proposition that we seek to test in this thesis. Moreover, even if regional GDP rises, this does not necessarily imply that this is globally welfare-enhancing. These issues, while very important, are beyond the scope of this thesis.

The first hypothesis is based on the argument that elimination of both qualitative and the quantitative trade restrictions among countries encourages intra-regional trade and supports increased regional specialization.

The second hypothesis assumes that the magnitude of exports of a member country in intra-regional and inter-regional trade as well as changes in these exports over time are the main factors that may commonly be used as quantitative indicators of economic interdependency. Therefore, Uzuh (1988) examined whether these changes affected the economic performance of regional economic integration member countries.

Krugman (1993) stated that if tariffs were set to improve the terms of trade of member countries, then the tariffs would be lowest and accordingly world income highest under two opposite states: (i) the first state exists when there is only one world trade bloc comprising all countries; (ii) the second state exists when trade policy is set by many independent jurisdictions. If these jurisdictions are sufficiently small, they do not have market supremacy or any motivation to deviate from free trade.

Regional economic integration is created when two or more countries form a free trade area or a customs union. Venables (2000) reviewed the economic effects of free trade areas and customs union agreements on member countries and on the world trading

---

15 Robson, Peter. (1983), 107-117.
system. The effects of such agreements comprised both benefits and costs due to trade creation and trade diversion. Gains included increased scale and competition. There was not sufficient evidence to indicate that regionalism retarded multilateral liberalization. Venables (2000) stated that there were many forms and income levels of regional integration agreements, as well as various differences in their degree of openness to trade. He also clarified the difference between free trade areas and customs unions.

Venables (2000) explained that in free trade areas internal tariff and non-tariff barriers are removed among members; however, independent external tariff policies can remain. However, in a customs union, in addition to creation of a free trade area, external trade policies of member countries are coordinated. He discussed three issues: (i) the effects of regional integration agreements among member countries; (ii) wider policy choices faced in regional integration agreement formation; and (iii) implications of regional integration agreements for the world trading system as a whole. With regards to the first issue, he referred to the modern analysis of regional integration agreements begun by Viner (1950).

Venables (2000) demonstrated that members of a regional integration agreement with a comparative advantage raised the potential for losses from trade diversion. He stated that empirical work on trade creation and trade diversion took two main forms: (i) econometric studies of changes in trade flows; and (ii) computer simulation studies of the full general equilibrium effects of regional integration agreement membership. In the former, changes in trade flows as a result of membership of regional integration agreements were quantified, and only then trade creation and trade diversion were
identified. Several econometric models were developed and most of them were based on gravity models. Venables (2000) also referred to two important consequent effects of trade creation and trade diversion. The first effect of trade is that changed world prices as a result of changes in trade flows are likely to lead to an improvement in the terms of trade for member countries, even though this gain occurs at the expense of other countries. The second effect of trade is that, due to changes in tariffs and the quantity of trade, governments lose tariff revenues. This loss of tariff revenues is a direct result of tariff elimination amongst member countries of a regional integration agreement, and also as a consequence of trade diversion.

Venables (2000) posed some questions related to the distribution of the benefits and costs of regional integration amongst member countries: Do central regions acquire benefits at the expense of countries outside the agreement, and do poor countries tend to catch up or are they simply left behind? He stated that the general evidence supported the claim that regional integration agreements created by developed countries lead to no particular differences or dissimilarities between the countries in terms of benefits. On the other hand, the situation was more mixed for developing countries in regional integration agreements. The analytical literature stated that diversion of trade was more likely to be experienced by countries that had great comparative advantages, signifying that in regional integration agreements countries with the lowest income experienced diversion.

Venables (2000) noted that the effect of regionalism on the global trading system had been the object of extensive discussion in recent times. The main question is whether growth in regionalism is a step towards global free trade or a substitute for it. This is an
issue that Anne Krueger has examined, and she concluded that these regional agreements are not consistent with global free trade. Venables (2000) posed two essential questions. Firstly, does a given structure of regional integration agreement encourage an open-policy of external trade? Secondly, is there evidence that the existence of regional integration agreements supports or impedes progress in the multilateral trade system? Venables (2000) concluded that joining a regional integration agreement affected all aspects of an economy, such as the prices of goods, the structure of production, and income flows. He also suggested that future research should attempt to concentrate more on strategies for developing countries, and the significant role that regional integration agreements could play to render these countries more effective in world trade systems.

Baldwin and Venables (2004) geographically distinguished trade policy as the defining characteristic of a regional integration agreement. They also indicated that there were three phases in forming a regional integration agreement. The first phase is a free trade area. As stated above, this type of integration involves member countries agreeing on cancelling all customs barriers between them while keeping tariffs on goods and services from other countries not part of the integration or the free trade area. To cancel the customs barriers on products produced in the free trade area, a means of proving the source and origin of goods is required. The second phase is a customs union. Under a customs union, customs tariffs would be unified vis-à-vis the external world in addition to the cancellation of the customs tariffs and other restrictions on product movements between member countries. In a customs union, there are no national customs tariffs for each member country, but rather tariffs are synchronized towards non-members of the customs union. The third phase is a common market. In this phase, the economic
integration is more advanced than in free trade area and customs union. Not only are barriers and trade restrictions eliminated, but the common market goes further to reach cancellation of all barriers that affect movement of factors of production and products. Hence, in this phase of integration, the free movement of goods and factors of production between countries is achieved within a common market. In addition to this, other goals may be achieved through common markets, such as movement of capital and workers, and the exercise of different economic activities and professions in any member country of the common market.

Baldwin and Venables (2004) clarified the effects on welfare as well as location and allocation effects associated with economic integration. They referred to the point made by Meade (1955) that the tariff weighted change in the quantity of a nation’s trade is an adequate statistic for the total effect on welfare. For a large country, Meade (1955) also explained that if all barriers were fixed with constant quantitative limitations, then a customs union would increase the total of the economic welfare of member countries.

Abrego, Riezman, and Whalley (2005) supported the claim made by Viner (1950) that the elimination of some tariffs amongst member countries of a customs union would not necessarily guarantee gains to these nations. They noted that Lipsey (1970), Kemp (1969) and Riezman (1979) were unhappy with the trade creation-trade diversion dichotomy, and they tried to develop another approach that would generate a clearer proposition. The new approach was known as the terms of trade-volume approach, since under regional trade agreements influences are on both the terms of trade and trade volumes. General equilibrium analysis was used in the terms of trade-volume approach instead of partial equilibrium analysis as used by Viner (1950). The general
equilibrium approach emphasized the influences of a customs union on each country as integration happened, rather than on global welfare.

Following a general equilibrium approach, Abrego, Riezman and Whalley (2005) used numerical simulation methods in order to investigate the frequency with which a variety of propositions held. Miller and Spencer (1971), Shoven and Whalley (1974) and Whalley (1985) used numerical equilibrium models to simulate the influences of regional trade agreements, and also addressed the extent of policy questions. Abrego, Riezman, and Whalley (2005) attempted to synchronize theory and numerical simulation with the aim of concluding whether trade integration propositions held only seldomly or most of the time. To compute equilibrium outcomes for a large number of model parameters, they used numerical simulation techniques. Sample frequencies were computed to assess the probability of a given proposition.

Abrego, Riezman, and Whalley (2005) unravelled the importance of deciding which model approach must be followed to investigate customs union theory, i.e. the trade creation-trade diversion approach of Viner (1950) or the terms of trade-volume of trade approach initially developed by Meade (1955), Jones (1969) and Ohyama (1972).

Recently it has been observed that many countries with different levels of development tend to eliminate barriers to the flow of economic factors, which may lead to a reduction in the importance of the integration arrangements being made on regional levels. However, such a policy does not go as far as being a replacement for integration. The problem facing developing countries in general is that they were at one time occupied by industrial countries. The industrial countries established by force some sort
of integration with the developing countries, in which case the occupiers monopolized both the advanced industrial and service activities, whereas the specialty of developing countries is generally in producing raw materials. Since primary sectors such as agriculture do not procure industrial integration, the developing countries are not capable of strengthening their regional integration without industrial locations. Raw materials are usually similar. Consequently, they represent a competitive factor, unless other arrangements are made and actions taken to reduce the negative effects, such as what happened with the establishment of OPEC, the International Cotton Committee and other cooperation systems amongst countries having similar patterns of production. This reflects the fact that sectors or countries having similar factors of production cannot be a base for vertical integration. Thus, industries can be complementary to each other or with raw material sectors to form a base for the regional integration, but this possibility is not available for the raw material sectors of most of the developing countries in general, and the Arab countries in particular. Since the benefits of raw material production are relatively less than the benefits gained from manufacturing, the economies of developed countries have commonly experienced more growth than developing countries. Consequently, the gap between advanced and developing countries has increased (Al-Kanaani, 2002).

Regional economic integration includes some level of economic amalgamation of the concerned countries. However, the process of merging economies faces some difficulties that may stop its progress. In particular, political obstacles may prevent regional economic integration from being established. Differences in economic systems and economic growth levels can also represent impediments to creating regional economic integration.
Several factors support and motivate a successful economic integration at the regional level. Firstly, countries within the same region are usually more homogeneous in terms of their economic and social circumstances. This makes them more capable of working jointly with each other. In addition, in many cases countries in the same region share a similar culture or social habits, and perhaps the same religious and common history, all of which strengthen the arguments for economic integration. Furthermore, belonging to the same region makes the economic sacrifices more acceptable for all members in order to achieve the economic integration.

Although economic integration is commonly regionally based, it is not mandatory that economic integration should be regional. Thus it is possible that a country can enter into an integration agreement with another that is not in the same region, or we may observe two geographically adjacent countries each belonging to a different integration block. Balassa (1969) pointed out that it is not necessary for the regional integration to be in terms of geographic location, since the core of the integration is eliminating discrimination between integrating economies. This process can be established between any nations in similar or different geographic regions. Nevertheless, Balassa (1969) accorded some importance to geographical adjacency or propinquity in economic integration, pointing out that the integration of adjacent countries is often a result of eliminating some artificial barriers.
2.1.4 Regional Integration Treatment Approaches

Three approaches to regional economic integration can be usefully distinguished. These are:

1. The federalist approach
2. The transactionalist approach
3. The modern functional approach

2.1.4.1 The Federalist Approach

According to the federalist approach, regional integration is transferred directly and with no intermediate phases to a union, with the union’s affairs managed by a single authority replacing the regional authorities of the members. The federal authority determines and manages both the internal and external political and economic issues associated with the union in order to ensure success in carrying out the plans and strategies of the group, such as plans related to industrial growth and industry location between the member countries.

2.1.4.2 The Transactionalist Approach

This approach is based on strengthening exchange between countries. This exchange can occur through multiple forms of communication. Since the integration process has accumulation characteristics, with increases in the economic, political and social bonds between societies, it leads to the creation of a single secure society in one of two forms: (i) a unified society, where all members merge to create one giant block; or (ii) a multiple society, where governments maintain their legal independency, whilst at the same time creating some organizations for various forms of cooperation between them.
2.1.4.3 The Modern Functional Approach

Proponents of the modern functional approach first arose in the period between the First and Second World Wars. According to this approach, countries interested in integration move towards union in phases or stages by firstly seeking integration in some fields that are technical in nature to ensure no conflicts between members. Subsequently, the countries move to integration in more complicated fields covering deeper economic and social cooperation, i.e. provided the initial steps of the integration are accepted by the countries concerned. In this way, the integration process is achieved in phases and some international organizations are created. Success of the created organizations will reduce the narrow nationalist focus of individuals in member countries. In addition, this encourages the countries to establish more organizations that cover other fields that boost integration.

Creation of organizations in a sequential way is required for integration in multiple domains in member countries. The movement from one phase to another, and management of integration across different fields by such organizations is called the spill-over, which is considered the major axis for the modern functional approach. The modern functional approach has as an initial phase sectoral economic integration before moving on to achieve total economic integration.

From the above analysis of the regional integration approaches, it can be concluded that the federalist approach considers integration as a situation and as a strategy. However, it does not reach the level of theory in a strict sense. The transactionalist approach is based on promoting enthusiasm to achieve integration by ensuring success of integration in different fields one by one, which encourages further deepening of
integration of different fields between the involved countries. Finally, the modern functional approach, even though it looks to integration as a process, adds to this process a specific phasing pattern in which the success of the first stage is secured before moving on to the next positive phase of integration.

2.2 THE THEORY OF ECONOMIC INTEGRATION

Every society has its own economic and social circumstances that determine the available strategies and mechanisms that can achieve the needed goals from economic integration. If the countries involved in the economic integration process are capable of responding to these circumstances, then the integration is more likely to achieve its aims. If the countries view economic integration between them as a situation, then they should adopt the economic integration approach that best fits their particular circumstances or situations. However, if economic integration is considered a process, then they can define the phases of this process and link them, clarify the characteristics of each phase and what is leading to their sequence pattern, and identify the burdens on every member country.

In addition, for all the involved nations in an economic integration process, there must be compatibility between their situations and the adopted integration theory and the method followed. For example, if the benefits of integration are based on division of labour and distribution of production specialities, the ultimate objective is affected by the level of the development of the productive system in these nations as well as the diversity of production bases. Therefore, the objectives and the ways and mechanisms to achieve them are formalized in a suitable theory for these nations and their
circumstances. As described below, we can identify both production and commercial methods of integration.

2.2.1 The Production Approach to Economic Integration

The production approach to economic integration is based on economic growth theory, what integration can create in terms of growth benefits for the involved parties, and what is needed in terms of increasing and developing the production basis of the involved countries. The growth process in any country depends on available production elements and their productivity, for example available natural resources, capital, the work force, and the adaptation of modern production process styles and technological development. These factors determine each country’s production capabilities, and shortages of any of them can lead to inefficient use of the other elements and weakening of the production base. Therefore, the production base should be able to respond to the structural changes in the future production pattern and adjust to changing production needs.

Economic integration according to the production method is summarized as a type of structural development, which can lead to interactions in production processes between the economies of the involved countries, following growth planning for these economies. Such structural development is expected to both increase the production of goods and services and broaden the production base, leading to further mutually beneficial exchange. In this regard, it is believed that this method is more suitable for growing countries, in particular the Arab countries at the start of an integration process where it is necessary firstly to strengthen the production structure.
2.2.2 The Commercial Approach to Economic Integration

According to the commercial approach, the involved countries achieve integration between them through the free international commercial exchange of products and services according to the principles of international trade theory in terms of the relative benefits of products in addition to markets and their mechanisms. International trade has a major role in economic integration theory and its application. It is considered the axis of the integration process in advanced capitalist economies because it represents a normal expansion of the market range from a nation to a regional group. It is also as important for growing countries, since it forces them to direct more of their external trade to the integration region they belong to. In addition to the focuses of the commercial method on economic integration in the movement of products and services, it also considers the movement of the different factors of production between the countries involved in economic integration. This takes into consideration the phasing of the movement and transfer process, since this process starts with the integration of trade in products and services, gradually moves to production factors transfer, and finally involves integration of policies.

The tools for achieving economic integration through the commercial approach are limited to depending on the free interaction of market forces by eliminating all obstacles and barriers to product and factor movements between involved countries. This makes clear the connection between economic integration theory and international trade theory. Historically we can point to the pre-World War I period of expansion of free trade together with developments in transportation and different forms of communication and the associated improvements in economic prosperity. At that time
some geographically close countries created a network of international economic relations to achieve prosperity.

2.2.3 The Motives behind Economic Integration

There are several motives for countries to enter an economic integration process. The first and most obvious one is to enhance trade and consequently to achieve higher levels of economic growth and welfare. Over the past few years, there has been an important increase in efforts among developing countries to achieve regional economic integration. Countries participating in bilateral trade agreements (BTAs) often seek to secure access to large markets such as the United States or the European Union (EU). However, developing countries often already enjoy considerable access to these markets because trade barriers on industrial products are typically low, or they may benefit from unilateral measures, such as the Generalized System of Preferences. At the same time, agricultural products, for which developing countries could reap major benefits, are usually excluded from regional agreements. Nevertheless, the motive for increased market access, however partial, remains powerful for many, especially Arab countries.

The second reason for entering into regional economic integration may be to give a small country an advantage over other similar countries in attracting foreign direct investment (FDI). Raising the level of FDI, or domestic investment for that matter, requires making a country attractive in comparison with other countries. Increasing market size helps in this regard. Ensuring market access to a major market by entering a BTA may be one way of achieving this.
The third reason for participating in regional economic integration is that it can also help in dealing with region-specific issues, such as border controls, transit, migration, or movement of labour. Countries recognize that other more opaque barriers than tariffs can hinder trade. These include border controls, sanitary restrictions, weak transport systems and regulatory differences. Economic integration aspects therefore increasingly cover some of these issues, which are more suitably addressed at the regional level. Some aspects of integration have also included dispute resolution mechanisms, which in the implementation phase of the arrangement have proven to be extremely useful.

There are impacts of regional economic integration on member and non-member countries. It can lead to improved trade among members, but can also reduce trade with non-members. In addition to pure trade effects, regional economic integration can also strengthen investment and growth of member countries, and may create pressures and opportunities for further and deeper integration, particularly in the financial area. Regional economic integration among developing countries can be considered part of a wider strategy to promote equitable economic growth. Effective regional economic integration will increase competition, reduce private transaction costs, and enable firms to exploit economies of scale. It also encourages inward foreign investment and facilitates macroeconomic policy coordination.

Regional groupings should be open towards the world market in the sense of keeping tariffs at a level that does not encourage trade diversion. They should not attempt a form of regional autarky that has led to past failures. Open regionalism complements unilateral liberalization. Without regional coherence, unilateral liberalization may imply negative spill-over effects. A regionally coherent liberalization strategy will
reduce and smooth the cost of adjustment to an economy in the face of globalization, both for the private and public sector. The high adjustment cost of unilateral liberalization has been a cause of policy reversal in a number of developing economies.

In partial equilibrium trade analysis, one can model each sector individually with a common sector-specific price elasticity across the economies of integration members. For each intra-regional sector, three markets can be modelled: (i) the intra-regional imports market; (ii) the intra-regional exports market; and (iii) the market for the good or service that substitutes for imports from the rest of the world.

Due to trade restrictions among Arab countries, misallocation of resources occurs with the creation of a wedge between the import price and the world price of affected goods. As a consequence of misallocation, resources are moved from sectors that could use them more efficiently towards other sectors in an effort to obtain production of the import substitute. Accordingly, the beneficial influence of the integration of capital, production and trade among Arab countries will depend directly on the degree of economic integration and the degree of movement of productive factors between them.

### 2.2.4 The Benefits of Economic Integration

For a variety of reasons, it often makes sense for countries to coordinate their economic policies. Coordination of policies can create benefits that are not possible otherwise. In regards to regional economic integration, it could be said that increased regional interaction, particularly in carefully oriented development strategies, can lead to improved economic welfare through specialization and rationalization of consumption and activities of production. The collective political bargaining power in extra-regional
forums of the region can be enhanced, and security can also be improved. These considerations go a long way to explaining the renewed worldwide interest in regional arrangements.

Viner (1950) differentiates between the two types of economic integration effects (creation and diversion). However, he limits his analysis to positive results only and states that economic integration leads to increases in countries' welfare if the construction effect is more than the transformation effect. He surmised that, due to the customs union, the potential world welfare might be reduced. The welfare of any arbitrarily chosen country cannot increase if there are no changes in the welfare of all other countries through assumed international transfers. Further, Viner stated that the potential deterioration of world welfare may occur even if there is no trade diversion. He inspired the theory of customs unions when he drew the fundamental distinction between trade-creating and trade-diverting effects of a customs union. He emphasized the production effects of customs unions when he turned his attention to the changes in the location and then the cost of world production.

The distinction between trade-creating and the trade-diverting effects of a customs union must be a fundamental distinction of any customs union theory (Lipsey, 1957). Trade creation is considered a good thing, while trade diversion is considered a bad thing. Due to the elimination of tariffs on some import goods, relative prices are changed in the domestic markets of member countries of a customs union. There are likely to be two important initial effects as a result of these price changes: they may affect the world location of production in several ways; and they will have a parallel effect on the location of world consumption. The country members of the union
increase their consumption of each other’s products, and at the same time they reduce their imports from the rest of the world.

Lipsey (1957) indicated that relative prices in the domestic markets of member countries would be affected. This would be due to the elimination of tariffs on some imports as a result of the creation of a customs union. He also explained that there were potentially two primary effects of these price changes. The first likely effect of these price changes was on the location of production. The second expected effect of these prices changes was the parallel effect on the location of world consumption. He also emphasized that even if world production was fixed, the formation of customs unions would cause some changes in consumption patterns as a result of the changes in relative prices in domestic markets of member countries. Therefore, the consumption effect would exist even if there was no existence of production influences. He also mentioned that it is difficult to measure changes in global welfare. However, it was not impossible to show that global welfare can increase after the formation of a trade-diverting customs union.

Lipsey (1960) emphasized the necessity of a definition of customs-union theory. In this regard, he stated that the theory of customs unions might be defined as that branch of tariff theory which deals with the effects of geographically discriminatory changes in trade barriers. He explained that the tariff system of any country may discriminate between commodities when different rates of duty are levied on different commodities. The tariff system of any country may also discriminate between countries. This occurs when the same commodity is subject to different rates of duty depending on the country of origin.
Lipsey (1960) also noted that theory had been restricted mainly to a study of the effects of customs unions on welfare, rather than on some other aspects, such as the level of economic activity, the rate of inflation, and the balance of payments. He explained that there may be several sources of gains and losses from a customs union. These sources are: (i) the specialization of production according to comparative advantage, which is the foundation of the classical case for the gains from trade; (ii) economies of scale; (iii) changes of the terms of trade; (iv) forced changes in efficiency due to increased foreign competition; and (v) a change in the rate of economic growth.

It is remarkable that the theory of customs unions has been almost completely confined to an investigation of (i) mentioned above and slight attention to both (ii) and (iii); (iv) is ruled out of traditional theory by assumption, and (v) is not dealt with at all. Economists tend to believe that, depending on the specific circumstances present, a customs union may have any conceivable effect on welfare.

A customs union affects welfare as well as the domestic markets of trading countries through changes in the prices of bundles of goods (Lipsey, 1970). At the customs union phase, there are no national customs tariffs for each member country. However, tariffs are unified for all members vis-à-vis the rest of the world. Lipsey (1970) refers to the analysis of Viner (1950), which leads to the following classification of possibilities that may arise as a result of a customs union between country A and country B:

1- Neither A nor B may be producing a given commodity. Accordingly, both of them will import this kind of commodity from another country that may
not be a member of the customs union. Consequently, this will not change the pattern of trade in this commodity as a result of elimination of tariffs between country A and country B. Therefore, both countries A and B will continue to import this commodity from the cheapest source outside of the union.

2- One of the two countries may produce the commodity inefficiently under tariff protection, while the second country may not produce that commodity. The protection tariff imposed on the commodity is sufficient to prevent competition from the cheapest possible source. Therefore, if country A imposed tariff on its commodity Z, for example, and this tariff is adopted by the union, the tariff will be high enough for A’s inefficient industry to be able to export to country B.

3- The third case occurs when both countries produce the commodity inefficiently under tariff protection. Due to the customs union, elimination of the tariffs between countries A and B guarantees that the country with less inefficient production will capture the union market.

From the three cases listed above, it can be noted that in case 2, any change must be trade diverting, and in case 3 any change must be trade-creating. It also could be stated that to predict the welfare effects of a customs union it is necessary to predict the relative strengths of the forces causing trade creation and trade diversion. Consequently, it could be concluded that customs unions probably induce losses when the member countries are complementary in a range of commodities that are protected by tariffs.
There were two main approaches considered in investigating customs unions theory: the trade-creation/trade-diversion approach by Viner (1950); and the terms of trade-volume of trade approach developed by Meade (1995), Jones (1969) and Ohyama (1972). Viner (1950) emphasized that eliminating the internal trade barriers in an integrated group may lead to more trade between partners and a consequent welfare increase. However, the consumption effects of integration could be either positive or negative. Therefore, it is hard to predict the ultimate net effect of integration. Viner (1950) also pointed out that, despite elimination of some tariffs among countries in regional trade agreements, gains to members will not necessarily be a consequence.

Customs union theory suggests that in the short term positive and negative effects of integration are felt by nations within the integration. However, other nations who are not part of the integration can only share the negative effects of higher production costs. Over a long period, all countries can suffer from the integration if the negative production effects are more than the positive effects for the world in general.

In general, it could be said that economic integration leads to trade creation if it includes production growth at the efficient and lesser cost centre, and becomes trade diversion if it leads to production movement to less efficient centres. Where multiple centres differing in terms of production efficiency produce a product and the most efficient centre is located in a country belonging to the integration group, the integration becomes a trade originator. In addition to the above, there are several other factors involved in identifying the final net effects of any economic integration experiment. These factors are discussed below.
2.2.5 Factors Influencing the Effects of Economic Integration

2.2.5.1 The Level of Competition and Integration between Integrated Economies

According to economic integration theory, competition means availability of goods and services from more than one of the involved countries in the integration. In general, it could be said that an economy is competing with another if the products produced by both of them are similar. In contrast, an economy is considered to be integrated with another if the products produced by both countries are different. In this regard, it could be suggested that one should study the level of differences in marginal costs of products in member countries when determining the degree of integration and competition. The economies concerned are said to be competing if the marginal costs between them are close to each other, especially if production lists of the economies are the same and vie with each other.

2.2.5.2 Location and Transportation Costs

Transportation cost is an important factor in the integration of countries, i.e. it allows the smooth flow of products between countries. High costs of transportation reduce the marginal production cost relativities between countries. If transportation costs are high, it may not be worthwhile to move production from one country to another even if the production cost in the first country is less than the production cost in the other country. For example, suppose the production cost of one product in country Z is $50, the production cost of the same product in country Y is $75, whilst the transportation cost of this product from Z to Y is $40. In this case, it will be better to produce this product in Y and not incur the extra cost of $15 resulting from transportation of the product from Z, even though the production cost is $25 less in Z. Thus, it is clear that an
increase or decrease in transportation costs plays a major role in product movement between the countries looking for integration.

Lipsey (1970) believed that consumption effects of integration in general could be positive or negative, as can be the production effects, meaning it is possible for economic welfare to decrease or increase as a result of integration. The factors that determine the consumption effects of an economic integration are considered the same factors that determine the earlier mentioned production effects. Clearly, there is an interaction between both types of effects of integration, since any change in the production pattern will lead to a change in the consumption pattern. Conversely, any change in the consumption pattern will lead to a change in the production pattern. Therefore, it is hoped that integration, particularly for growing countries, will achieve positive consumption effects in the long term, leading to improved production with dynamic factors improving the effects of the economic integration.

The essential argument for free trade is that it will help to optimize world trade and maximize world production, hence maximizing world economic efficiency (Meade, 1955). One of the most important considerations that may help to determine whether free trade alone is sufficient to maximize economic welfare or not is the idea that the movement of factors of production is not needed. Free trade leads to the complete specialization of production in the trading countries. Meade initially developed the terms of trade/volume of trade approach. Under this approach, its effects on both the terms of trade and trade volume can summarize the impact of a regional trade agreement. General equilibrium analysis can be used in this approach instead of Viner’s partial equilibrium analysis. It can allow consideration of the influences of the union on
each member country as integration occurs, instead of on world welfare. Meade (1955) suggested that trade diversion effects should not be measured by the volume of trade diversion only, but rather in terms of increase in cost.

It can be argued that the analysis of the effects of integration should not be limited to creation and diversion effects, but should go further to include other advantages and disadvantages that may result from integration. In general, it could be said that integration could be preferred by both the countries seeking integration and the overall world. Thus, the more the positive production effects than negative ones, or the more integration leads to diversion from less efficient centres of production to ones with higher efficiency, the greater are the possibilities of greater welfare for all. Meade was one of the economists who participated heavily in developing Viner's insights related to economic integration effects.

Whilst Viner (1950) focused on removing customs barriers and increasing welfare between the customs union countries, Meade focused on the effects that may result from economic integration between some countries. Therefore, the writings and thoughts of both Viner (1950) and Meade (1955) represented what is called the traditional theory of economic integration. This theory concentrated on:

(i) Studying the economic integration effects between advanced countries, especially Western Europe in the 1950s, rather than those between developing countries;

(ii) Looking at world welfare in general and not only the welfare of members of an economic integration;

(iii) Studying the static rather than the dynamic effects of integration; and
(iv) Viewing economic integration theory as a branch of the classical international trade theory, with its classical tenets of trade freedom, competition and full utilization of economic resources. According to the classical theory, economic integration is based on the idea of freedom of trade exchange, managed by market mechanisms, which leads to the best distribution of productive factors between the member countries.

2.2.6 The Levels of Economic Integration

The different forms of economic integration can be viewed as different phases or levels of non-discrimination between nations with respect to their economic transactions. Table (9) summarizes the various levels of integration commonly identified.

Table 9: The Economic Integration Types and the Removal of Discrimination

<table>
<thead>
<tr>
<th>Types</th>
<th>No tariff or quotas</th>
<th>Common external tariff</th>
<th>Free flow of factors</th>
<th>Harmonization of economic policies</th>
<th>Unification of policies and political institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free trade area</td>
<td>X</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>Customs union</td>
<td>X</td>
<td>X</td>
<td>_</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>Common market</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>Economic union</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>_</td>
</tr>
<tr>
<td>Total economic integration</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

The diverse forms of integration can be distinguished as starting with a free trade area, and then tending to customs unions, followed by common markets and reaching economic union at the end\textsuperscript{16}. The phases of the economic integration can be summarized as follows:

1. **Free Trade Area (FTA)**

At this phase of integration, the involved countries agree on cancelling all customs barriers between them, while keeping a customs tariff with respect to other non-members of the free trade area. The source and origin of goods must then be verified in order to determine whether they are exempt from a tariff or not. Because of the different external tariffs, FTAs generally develop elaborate rules of origin. These rules are designed with the aim of preventing goods from being imported into an FTA member country with the lowest tariff and then transferred to a country with higher tariffs.

2. **Customs Union**

At this phase, customs tariffs are unified with respect to the external world, on top of the cancellation of the customs tariffs and other restrictions on product movements between the country members. With a customs union, all member countries must be able to agree on tariff rates across many different import industries. Accordingly, at the customs union phase, there are no individual national customs tariffs for every member country. The most famous customs union is the European Union (EU).

3. Common Market
At common market phase, economic integration reaches a yet more advanced level. Not only are trade barriers and restrictions cancelled, but the coordination among economies of members goes further to reach cancellation of all barriers that affect the movement of factors of production as well as products. Thus in a common market there is free movement of capital and labour between member countries. It is noticed that this phase is positioned as a middle level of economic integration. The European Union (EU) achieved common market status is early 1993.

4. Economic Union
At the economic union phase, in addition to all the earlier mentioned measures, country members in the economic integration coordinate their monetary, financial, industrial, agricultural and political policies, as well as other policies to eliminate any remaining discriminatory dealings between them. At this phase, besides allowing the free mobility of capital and labour, some fiscal spending responsibilities are given to a supra-national agency. An example of economic union was Benelux formed after WWII, which consisted of Belgium, the Netherlands and Luxembourg.\(^\text{17}\)

5. Economic Unity (Total Economic Integration)
Economic unity is the highest form of economic integration, since the involved countries not only achieve economic union, but also go further to reach common economic, financial and monetary policies, effectively creating one economic entity, with a supra-national authority making binding decisions for all involved countries.

2.2.6 Sub-Regional Integration in the Arab Region

The Great Arab Free Trade Area (GAFTA) was established in 1998, with the objective to stimulate intra-Arab trade. Several institutions are responsible for implementing the GAFTA agreement (see figure 2) below. The agreement tried to encourage both Arab and foreign investments as well as increase competition in domestic markets. Therefore, further opportunities for job creation and more growth in Arab economies were expected. Accordingly, elimination of tariffs on all imported products of Arab origin was expected. Exemptions or at least reduced trade barriers were also expected otherwise Intra-Arab trade expansion would be very little. Moreover, the share of non-oil intra-regional trade was expected to be boosted by GAFTA. However, regional economic integration in the Arab region in general, and on a pan-Arab level in particular, remains weak as a result of the impasse between oil-rich and oil-poor countries. Consequently, sub-regional integrations have emerged in the Arab region, such as GCC and MAU.
Figure 2: Institutions Responsible for Implementing the GAFTA Agreement.

Institutions responsible for implementing GAFTA agreement

- Enforcing and Monitoring Committee
  - Functions:
    * Shall consider laws and customs measures required for enforcing the custom duties reductions within Arab countries.
    * Hold four meetings annually to examine the reports.
    * Submit periodical reports on progress in implementing the task of settling disputes arising from implementation of the program.

- Trade Negotiations Committee
  - Functions:
    * Liquidation of non-tariff restrictions imposed on Arab goods.
    * Monitor the implementation of the liquidation of restrictions in the Arab member countries.
    * Determination of lists of banned imports that shall be dealt with in the framework of the program.

- Arab Rules of Origin Committee
  - Functions:
    * Shall draft rules of origin for Arab goods for the purpose of enforcing the Agreement to facilitate and develop Inter-Arab trade and implement the executive program.

- Technical Secretariat
  - Functions:
    * Work out draft agendas for the program committee.
    * Prepare a report on progress of trade among members.
    * Cooperate with Arab private sector federations in preparing the annual report.
    * Develop the exchange of information and data among members.
    * Shall seek the assistance of specialized Arab organizations in the areas of origin, specification and measurements and other areas covered by the GAFTA program.
In this chapter, we reviewed the notion of economic integration. This chapter presented a thorough discussion of the nature and theory of economic integration, including several types, aspects and perspectives of economic integration. We found that, since economic integration contains a variety of concepts, such as social, economic and political, it could not be defined in a narrow domain. Economic integration can be considered from different perspectives, including a general perspective which exposes economic integration as type of coordination between different economies. This perspective of economic integration includes two main types: (i) economic integration as a process and (ii) economic integration as a situation. Another perspective of economic integration occurs when integrated countries perform some procedures that eliminate all obstacles to trade and capital flows. The chapter also reviewed the concept of regional economic integration. We provided a comprehensive overview regarding various approaches related to this concept, such as the Federalist Approach, Transactionalist Approach and the modern Functional Approach.

In this chapter, we also provided a review of the theory of economic integration, including the production and commercial approaches to economic integration. In addition, the motives for economic integration have been presented. This chapter suggested that, since regional economic integration can enhance investment, improve economic growth, boost trade between member countries, and can reduce their trade with non-member countries, the regional economic integration affects both member and non-member countries.

The chapter also discussed the benefits of economic integration and the factors that influence the effects of economic integration, such as the level of competition between
countries and location and transportation costs. We showed that transportation cost represents a vital factor in integration between countries. Moreover, this chapter provided an analytical review of economic integration levels.
Chapter Three

Review of the Literature on Arab Economic Integration

3.1 Introduction

In the literature on the effects of economic expansion, two principle problems have been of concern with regard to international trade: (i) the impact of the expansion on the terms of trade; and (ii) the resultant change in the welfare of the trading countries. Although some solutions have been offered to these problems, they are not considered satisfactory\textsuperscript{18}. Since World War II, the main aim of most of the developing countries has been concentrated on continual economic development and obtaining higher degrees of economic progress. Most Arab countries do not meet the criteria required; only some reach the employment target that is set much below the existing level in developed economies. In addition, the criterion of mainly factory-derived output does not apply to some sectors of the Arab countries, which in spite of the much disputed inclination to mammoth industries consists predominantly of small enterprises, particularly in densely populated areas (Hershlag, Z. in: Aliboni, R.1979, 26).

Despite a long history of attempts at Arab integration, there have been limited academic studies on the issue. In this review of the literature, we survey the studies that have considered attempts at achieving economic integration. The studies can be reviewed under four different categories – (a) studies of intra-Arab trade, (b) studies of intra-Arab investment, (c) studies of intra-Arab labour flows, and (d) studies of Arab economic integration or Arab economic union.

3.2 Intra-Arab Trade

Havrylyshyn (1997) identified location as a constraint for intra-Arab trade. It is a very large region; the Arab region extends from the Atlantic coast in the West to the Red Sea in the East. For some Arab countries, their European neighbours are closer than their Arab neighbours – Morocco is closer to Spain than Libya; likewise Libya is closer to Italy than Mauritania. This means the transportation cost for intra-Arab trade could be quite high compared to trade with Europe.

Havrylyshyn and Kunzel (1997) analysed the specialisation of Arab economies and their relative position vis-à-vis industrial countries. In particular, they examined the level of specialisation of Arab countries and their competitiveness. Havrylyshyn and Kunzel used the Grubel-Lloyd intra-industry trade (IIT) index as an indicator of the degree of industrial specialisation, and the Arab countries’ ability to compete in a more open trade setting. The results of this study suggest that the Arab region overall does not have a highly advanced industrial base relative to other industrial countries, particularly the EU region. Therefore intra-industry trade levels of the Arab countries are likely to be low. Nevertheless, the study shows a positive trend of rapid growth of intra-industry trade (IIT).

Testas (1997) estimated the import expansion effects of the Arab Maghreb Union (AMU) from the perspective of one member country (Algeria). He used a supply-demand approach to describe the benefits obtained from a customs union. This model

19 The Grubel-Lloyd index (1975) measures the share of imports or exports, whichever is largest, that is covered by exports or imports of similar types of goods or services. The Grubel-Lloyd index is the most frequently used measure of intra-industry trade. The index ranges from zero to one where a higher value means there is a greater overlap between exports and imports. The Grubel-Lloyd index can be used to measure intra-industry trade between a country and individual partners, a region, or the world.
was developed by a number of researchers, such as Verdoon (1960), Janssen (1961), and Clague (1971). The model distinguishes between three main elasticities: (i) import price elasticity; (ii) export supply elasticity; and (iii) substitution elasticity. Testas (1997) estimated the trade expansion effects by calculating trade creation plus trade diversion effects. Trade creation equalled the change in total imports of Algeria, and trade diversion equalled the change in their imports from non-AMU countries (rest of the world excluding AMU members).

The main finding of Testas was that, while the effects of trade expansion could be demonstrated, their impact on Algeria’s economy was quite insignificant. This minimal impact indicates that the Arab countries co-integrate more with other countries than they do with themselves. The findings of Testas's study are consistent with the findings of earlier researchers on integration among Arab countries.

In a follow up study, Testas (1998) examined output effects of the Arab Maghreb Union (AMU), again judged from the perspective of Algeria. He used an input-output model to derive the sectoral output effects of export expansion (final demand) through AMU. Testas (1997) found the AMU expanded Algeria’s exports. Since Algeria’s main export is oil (primary product), the expansion of oil exports may cause Dutch Disease, whereby heavy dependence on the revenues of hydrocarbon exports leads to an illusory increase in the real exchange rate, and also a decrease in output and exports of non-oil sectors. Testas (1998) also examined intra-industry trade and its importance for

---

20 Dutch Disease is an economic phenomenon involving the exploitation of natural resources and a decline in the manufacturing sector. The theory is that an increase in revenues from natural resources will de-industrialize a nation's economy by raising the exchange rate; as a result the manufacturing sector will be less competitive. However, it is extremely difficult to definitively say that Dutch disease is the cause of a decreasing manufacturing sector, since there are many other factors at play in the economy. Dutch Disease indications were detected in the Algerian economy.
manufacturing and hence economic growth. Testas compared Algeria’s sectoral output effects of the AMU with the UK’s sectoral output effects of the EU. The main findings of Testas’ study can be summarised as follows: (i) Based on the multi-sector model of Corden and Neary (1982), Dutch Disease indications were detected in the economy of Algeria; (ii) Based on supply-demand analysis as well as Dutch Disease literature, there is a direct relationship between stability in oil export revenues and stability in income of the specific country.

Testas (1998) found that there is a causal relationship between the total output level and the vector of final demand categories such as consumption, investment, stock formation and exports. Accordingly, any change in any element of these final demand categories will necessarily lead to a corresponding change in the total output level. Based on this underlying relationship, Testas concluded that integration increases the intra-union exports of a member country, which in turn leads to a change in the sectoral output of this country. In other words, the output composition of a union-member country is affected by integration, which in turn leads to a change in the volume of exports. According to the results of Testas (1998), the AMU could expand the total production of Algeria by about 0.4 per cent over actual levels.

The final results of Testas’ analysis also show that the contribution of the hydrocarbons sector (oil and gas) to the increase in total production was nearly 2 per cent, with the hydrocarbons service sector registering an increase of 0.45 per cent, the transport and communications sector an increase of 0.32 per cent, the services including commerce sector an increase of 0.29 per cent, and the chemicals, rubber and plastics sector an increase of about 0.2 per cent.
From the results of Testas (1998) revealed in the percentages above, it can be seen that Algeria's economic development is heavily dependent on the primary product sector, which is demonstrated in the contribution of the hydrocarbons sector to total production. Consequently, Dutch disease probably occurs, and an illusion of economic development and improved welfare arises due to the reliance mainly on revenues of one sector (hydrocarbons) rather than revenues obtained from varied goods exports. Based on supply-demand analysis and Dutch disease literature, a direct relationship has been established between the export oil revenues and the income of a particular country.

Due to the instability in Algeria's income, investment will be affected because the investment depends significantly on importing capital goods, which in turn depends on the availability of export earnings. This relationship between revenues and investment suggests the existence of a strong relationship between fluctuations in exports and fluctuations in capital goods imports. Testas (1998) reported that the correlation coefficients between these variables (exports, imports, investment, GDP) were found to be very high and positive, reaching an average of 0.95 in the period 1970-1991.

To assess the contribution of the manufacturing sector to the process of economic growth in Algeria, Testas (1998) used two concepts. These concepts are: (i) constant market share (CMS); and (ii) intra-industry trade (IIT). Based on CMS analysis, he suggested that internal factors, such as product composition and the competitiveness effect, have made a negative contribution to the export growth of Algeria. Based on IIT methodology, most of Algeria’s trade with AMU members was intra-industry or trade in commodities characterized by standardized features.
To emphasize the insignificance of the output composition effects of the AMU on the economy of Algeria, and the requirement of diversification within this economy, an I/O model was run on data from the UK as a member of the EU. The I/O methodology was used to predict and compare the production effects of the membership of Algeria in the AMU with that of the UK in the EU. Testas’ (1998) results for the UK using the I/O production model showed that the total output of the UK had expanded by about 13 per cent as a result of joining the EU.

The results also showed that membership of the EU had a significant influence on several sectors in the UK, such as the aircraft industry (an increase of about 57 per cent) and professional goods (an increase of 30.1 per cent). On the other hand, there were a number of industries which had experienced an insignificant impact, such as wood and furniture products (6 per cent), wholesale and retail trade (4 per cent), and the construction sector, which registered an increase of about 1 per cent. In contrast, these results are different compared with Algeria’s experience, where integration spurred the primary production sector rather than manufacturing industry sectors.

Finally, Testas (1998) suggested that moving away from a heavy dependence on the primary sector, such as the hydrocarbons sector in case of Algeria, is important to prevent detrimental economic phenomena such as Dutch Disease. Accordingly, diversification is particularly important in order to attain economic stability as well as increase the intra-AMU industry trade.

Limam and Abdalla (1998) evaluated the potential success of various Arab Free Trade Area (AFTA) agreements, based on the gravity model for intra-Arab trade flows. They
found that the exports of Arab countries to industrial countries had decreased steadily during the 1990s from 54.5 per cent to 48 per cent of their exports. However, the share of their exports to developing countries has increased marginally from 40 per cent to 46 per cent. The import sources of Arab countries, which include both industrial and developing countries, are quite similar to other developing countries.

On average, the dependence of Arab countries on the European Union is much higher than their dependence on developing countries as well as the Middle East. Moreover, the authors claim that countries such as Saudi Arabia, Libya and Algeria, which are heavily oil-dependent, have limits on capacity to engage in mutually beneficial bilateral trade in the region.

Several of the existing empirical studies have shortcomings as demonstrated by Limam and Abdalla (1998). In contrast, the gravity model is considered one of the most successful empirical models in the international trade field. The gravity model has been augmented by several variables, some of them as facilitation variables and some as hampering ones. These variables include development level, agreements on preferential trade or customs union, commodity composition of trade, vicinity, and population size. Limam and Abdalla (1998) have classified the variables added to the gravity model into categories as follows:

(i) Variables describing the potential supply of the exporting country, such as the level of GNP, GNP per capita, population size (economies of scale effect), and resource supply of the exporting country (factor endowment effect).
(ii) Variables describing the potential demand of an importing country, such as the level of GNP, GNP per capita, vicinity, and membership of trade-blocs. The correspondence between exports and imports of partner countries as well as the difference between their GNP per capita are also considered indicator variables of potential demand.

(iii) Friction variables: variables describing the resistance to trade. This kind of variable pertains to the cost of transportation, including mode and speed of transport, distance between trading countries, and the characteristics of the commodity such as its bulk, value, and its weight. It is noteworthy that the distance between trade-partner countries has often been applied as a variable to capture transport cost effects.

(iv) Artificial variables, which comprise trade impediments such as tariffs, non-tariff barriers and foreign exchange restrictions. Institutional and political variables have also been considered as artificial variables.

Several variables were used in the gravity equation of Limam and Abdalla (1998); some of these variables were expected to have a positive effect on Intra-Arab trade, for instance the GNP variable. Other variables were expected to have a negative effect, such as border closing and political boycott variables. The difference in the per capita income\textsuperscript{21} between trade-partner countries, as well as the degree of correspondence between the export structure and import structure of these countries were also added in

\textsuperscript{21} According to theory of Hecksher-Ohlin, the impact of the differences between per capita incomes of trade-partner countries will lead to an increase in their intra-trade (positive coefficient). In contrast, this difference should have a negative coefficient according to Linder theory.
the gravity equation of Limam and Abdalla (1998). The empirical results attained in the Limam and Abdalla (1998) study showed that the Arab countries, especially Maghreb countries, depend heavily on imports from the EU, whereas their exports are divided equally between industrial and developing countries. This result may support the results provided by Testas (1998) that the non-diversification of products in the AMU region causes restrictions in their intra-trade in particular commodities. Consequently, their trade with the EU is more than their trade among themselves.

Over the period 1984-1995, the average share of intra-Arab trade in their total trade was about 8.6 per cent. The compositions of imports and exports of Arab countries indicate that the exports of Arab countries are predominantly minerals and fuels, while their imports are mainly machinery, chemicals, manufactured goods, and transport equipment.

The estimation results of the Limam and Abdalla (1998) study showed that the size of the trading countries positively affects intra-Arab trade, whether they are members of either the GCC or AMU. In addition, trade among Arab countries is not systematically based on differences in resource endowments. Moreover, the estimation results demonstrated that the trade potential among Arab countries has not been converted into an effective one, with the exception of a few commodities. Pooled data on Arab bilateral trade was used by Limam and Abdalla (1998) to estimate a gravity model, and the period was 1984-1995. The model was estimated at three levels: (i) total commodity trade; (ii) non-oil commodity trade; and (iii) commodity trade classified according to
the (SITC)\textsuperscript{22} one-digit level. Using this kind of data, gravity estimation helps to assess the potential of expanding intra-Arab trade.

Although some achievements have been attained in terms of economic openness, the Arab countries as a group still operate at less than their potential. They do not sufficiently benefit from the opportunities that the global economy has to offer. In addition, Arab countries have not sufficiently utilized their endowments. Consequently, since 1989 the real GDP growth of the Arab region has not matched growth in developing countries as a group. Due to rapid population growth and slower GDP growth in the Arab countries, per capita income has almost stagnated in these countries. At the same time, very little private investment capital has been attracted by the Arab countries as a group. Private investment capital going to developing countries has however surged in recent years.

Ruffin (1999) referred to Ricardo’s theory and the factor endowment approaches to trade to highlight the contribution of intra-industry trade theory. He also explained the significance of intra-industry trade for economies and mentioned that according to Ricardo's theory, goods are more mobile across international boundaries than resources. He also explained that, based on the Heckscher-Ohlin model, economies export the services of their relatively abundant factors of production and import the services of their relatively scarce factors. On the other hand, Ruffin (1999) stated that according to Trefler (1995) the empirical investigation of the Heckscher-Ohlin model has not had

\textsuperscript{22} The Standard International Trade Classification (SITC) has been used since 1950. It has been revised several times; SITC3 (1986) is the most recent revision.
much success, with estimated trade in factor services being less than the actual factor endowments around the world would predict. The Heckscher-Ohlin model suggests that returns to labour in US should be less due to international trade, while returns to capital should be higher due to trade.

Ruffin (1999) explained that a country has less intra-industry trade when its factor endowment is considerably dissimilar from those of other trading countries. Further, with more raw materials, there are fewer differentiated manufactured commodities, and less intra-industry trade is associated with international trade within industries rather than between industries. As a result, trade is more beneficial than inter-industry trade due to a motivation to innovate and exploit economies of scale.

Al-Atrash and Yousef (2000) found that the proportion of intra-Arab trade is low. They indicated several reasons for this, such as a high level of tariffs, other kinds of trade impediments in some Arab countries, and political disputes. The gravity model was used in this study to measure the expected level of trade in the Arab region. The study found that most of the intra-Arab trade is within sub-groups of Arab countries. For example, trade among Maghreb countries accounts for 67 per cent of their trade with other Arab countries. Likewise, trade among Mashreq countries accounts for 33 per cent of their trade with other Arab countries. In the case of GCC countries, 75 per cent of their total intra-Arab trade is among themselves.

Al-Atrash and Yousef (2000), in their gravity equation, were concerned with regional trade agreements such as the GCC and AMU. Language was also one of the variables included in the equation. Border and openness were the other variables included.
Border indicates the geographical vicinity and culture similarity between trade-partner countries, while trade restrictiveness was indicated by the openness variable. The gravity equation of Al-Atrash and Yousef (2000) is different compared to that of Limam and Abdalla (1998), who included more variables in their gravity equation, such as a variable that reveals the correspondence between imports and exports of trade-partner countries.

The sample concerned in the Al-Atrash and Yousef (2000) study consisted of Arab countries as well as other non-Arab countries. These non-Arab countries have trade transactions with Arab countries. Limam and Abdalla (1998) did not include non-Arab countries. The time period of the study of Al-Atrash and Yousef (2000) was 1995-1997.

The main empirical result found by Al-Atrash and Yousef (2000) is that the border variable significantly affects intra-trade, so that trade between countries with a common border is more likely to be high. In addition, Al-Atrash and Yousef (2000) found that intra-trade within subgroups (GCC, AMU) is more than intra-Arab trade in general. According to the results of gravity model estimation, exports of Arab countries predicted by the gravity model are higher than their exports to the rest of the world. Also, the gravity model predicts that intra-Arab trade, whether amongst a sub-Arab group (GCC, AMU) or otherwise, should be higher than that observed. Both imports and exports of oil-exporting Arab countries are less than what is predicted by the gravity model.

Al-Atrash and Yousef (2000) re-examined intra-Arab trade after they divided the Arab countries into three subgroups: (i) the GCC consisting of Bahrain, Kuwait, Qatar,
Oman, Saudi Arabia and the United Arab Emirates; (ii) the Maghreb group comprising Algeria, Libya, Mauritania, Morocco and Tunisia; and (iii) the Mashreq group comprising Egypt, Jordan, Lebanon, Sudan, and Syria. The empirical results of this re-examination indicated that both GCC and Maghreb subgroups had less trade than predicted by the model, both in terms of their trade with the rest of world and intra-group trade. Accordingly, with the exception of the Mashreq countries, the weakness of intra-Arab trade is linked to the limitation of intra-trade of GCC and Maghreb subgroups rather than the Mashreq Arab countries subgroup.

Bolbol and Fatheldin (2005) analysed the determinants of intra-Arab exports and FDI during the 1997-2003 period. According to them, the low level of intra-Arab trade is due to the lack of product complementarity among the Arab countries, which is a different reason from those provided by Al-Atrash and Yousef (2000). Bolbol and Fatheldin (2005) used the trade intensity index (TII) to assess the extent of trade between any two Arab countries. If the TII between two countries is more than one, the degree of trade intensity between them is higher than their trade with Arab countries as a whole.

Bolbol and Fatheldin (2005) also used an extended gravity model for analysing intra-Arab exports. They estimated the model with two sets of data, one for intra-Arab trade, and one for their trade with major world partners. The results show that the income elasticity of trade is less than one, implying that Arab exports are of limited product differentiation. The results also show that the intra-exports of Maghreb (MAU) with both Mashreq and the GCC are more than expected within the Arab region. However, it is less than expected within the world. The study shows that trade is relatively intense
among AMU members, more intense among GCC members and Yemen, and most intense among Mashreq members and Sudan. Furthermore, the study pointed out that the low level of intra-Arab exports is mostly due to the limited exports between GCC-Maghreb and Maghreb-Mashreq countries.

3.3 Intra-Arab Investment, FDI and Stock Markets

3.3.1 Intra-Arab Investment and FDI

In the Arab region, more than 280 bilateral agreements were signed in the 1990s with the purpose of encouraging and guaranteeing investments; 61 of these agreements were among Arab countries, and half of these 61 agreements comprised Egypt, Libya, Morocco and Tunisia. However, several multinational agreements were signed by many Arab countries, for example with the International Centre for the Settlement of Investment Disputes and the Arab Investment Guarantee. Since the Arab region does not receive sufficient FDI from outside the region, and most of the investment of the Arab countries tends to go to outside the Arab region, Arab countries should send their investment to the Arab region rather than to other regions in order to enhance intra-Arab FDI.

Intra-Arab investment flows are estimated to have significantly increased by $2.4 billion in 2001, which is more than half of the total FDI inflows to the Arab region in 2000 (Eid and Paua, 2002). Intra-Arab investment is cumulatively estimated to have been $17 billion during the period of 1985-2001. This represents a small portion of total foreign Arab investment and thus implies a significant potential for expansion. It is also noteworthy that of the significant amounts of outward FDI flows and stock in the Arab region, at least four countries have more than $1 billion in outward FDI stock. These
countries are Bahrain, Libya, Kuwait and Saudi Arabia, which reveals the importance of FDI on the growth and economies of Arab countries. It is notable that Kuwait registered a higher outward FDI stock ($1.98 billion) than an inward FDI stock ($527 million).

Krogstrup and Matar (2005) emphasised the idea of Eid and Paua (2002) that growth and development can be affected by foreign direct investment (FDI) through its contribution to gross fixed capital formation. FDI has been highly unstable in some Arab countries, such as members of the Gulf Cooperation Council (GCC), compared to FDI flows to the other Arab countries characterized by more diversification, such as Morocco, Egypt, Tunisia and Jordan. Krogstrup and Matar (2005) emphasized that Tunisia, Jordan and Morocco are the only Arab countries that have been able to attract more of world FDI inflows.

Although since 1990 foreign direct investment (FDI) inflow to developing countries has increased significantly, FDI has only been weakly attracted to the Arab countries. After the global economic slowdown of 2001, FDI became the most important source of foreign financing in most of the developing countries. Krogstrup and Matar (2005) evaluated whether the Arab countries should expect to gain from increased FDI inflows. Their evaluation of the Arab countries was dependent on the selected measures of absorptive capacity for these countries, and also on the particular Arab country evaluated.

Krogstrup and Matar (2005) concluded that both in absolute terms and relative to GDP, Arab countries receive a small portion of total FDI relative to other developing
countries. Of the Arab countries, only Jordan and recently both Tunisia and Morocco were seen to have performed well in terms of attracting FDI flows. A further conclusion of this study was that FDI inflows to the Arab region did not improve during the 1990s. Consequently, Arab countries have significantly lagged behind in attracting FDI during the period of high world wide FDI.

Changes in goods flows and intra-Arab FDI flows have been largely driven by several factors such as oil-based surplus capital and remittances (Bolbol and Fatheldin, 2005). Although some minor fluctuations in intra-Arab investment of some Arab countries have been observed, Intra-Arab investments have been increasing, in particular during the early 2000s period (see Table 10). Accordingly, the relative stability and reliability of intra-Arab investment can be assessed. Over the 1990s decade, global exports increased by 6 per cent annually with a parallel increase in FDI at an approximately equivalent rate. Bolbol and Fatheldin (2005) stated that both exports and FDI were almost driven by the same factors, such as proximity, investment environment and economic openness. Some common features were also shared by exports and FDI, such as income growth and vertical production methods.

Bolbol and Fatheldin (2005) explained that there is no formal theory that can be used to derive the basic gravity model for FDI. However, they also stated that the gravity equation may be useful for modelling intra-Arab FDI flows. It can be presumed that there is a positive relationship between FDI and the national income of the home country, such that greater availability of capital causes more income. Likewise, FDI also has a positive relationship with the income of the host country because of the motivation to serve the affluent overseas market.
The relationship between FDI and distance can be positive if FDI substitutes for exports due to higher transport costs, and the relationship can be negative if a longer distance is associated with unfamiliarity with local cultures and also gives rise to higher operational costs. Panel data for the Arab countries with fixed-year effects were used by Bolbol and Fatheldin (2005). According to their estimation of a gravity equation, they concluded the main results were:

(i) Income elasticity is positive for both countries (home and host).
(ii) The coefficient of the distance variable is negative, revealing that vicinity and familiarity with the investment environment are important.
(iii) Positive and significant dummies only involve the GCC with Maghreb and Mashreq, which may result from the relationships between Maghreb and Mashreq regions and GCC investors; and
(iv) Sudan-Arab FDI has a large positive coefficient that is more than six times what it should be.

An important point made by Bolbol and Fatheldin (2005) is that intra-Arab exports did not increase as a response to a higher predicted level of intra-Arab investment. The main reason for this unresponsiveness was that most of the intra-Arab investments were made in non-tradable sectors. The weakness of trade between the GCC-Maghreb and Maghreb-Mashreq countries is the main reason for the intra-Arab exports deficiency. Bolbol and Fatheldin (2005) concluded that intra-Arab FDI can be explained by the fundamentals of the gravity model.
Table 10 represents intra-Arab investment based on host countries during the period 1995-2005. Intra-Arab investment registered approximately US$3,801 million during 2005 compared with US$5,958 million during 2004, revealing that intra-Arab investment increased by US$2,104.9 million. From table 10 it can be seen that intra-Arab investment has increased since 2000. In every year from 2000 to 2005, intra-Arab investment increased, and for some of these years the increase was significant. It can also be seen from the table that Saudi Arabia has received the highest total Arab investments (US$31,837.2 million) during the 1995-2005 period, followed by Lebanon (US$6,524.6 million), Sudan (US$6,102.2 million), Egypt (US$4,045.4 million), Syria (US$3,641.4 million), Morocco (US$3,215.8 million), UAE (US$2,359.7 million), Tunisia (US$1,623.8 million), and Algeria (US$1,568 million). It is noteworthy that the first five countries (Saudi Arabia, Lebanon, Sudan, Egypt, and Syria) accounted for about 80.5 per cent of total intra-Arab investment during 1995-2005.
Table 10: Intra-Arab Investments according to host countries 1995-2005 (Millions US$)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan</td>
<td>35.7</td>
<td>13.5</td>
<td>10.6</td>
<td>12.7</td>
<td>24.2</td>
<td>26.2</td>
<td>27.6</td>
<td>21.0</td>
<td>17.6</td>
<td>27.0</td>
<td>302.2</td>
<td>518.3</td>
</tr>
<tr>
<td>UAE</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>380.0</td>
<td>176.0</td>
<td>196.0</td>
<td>215.0</td>
<td>217.5</td>
<td>650.2</td>
<td>525.0</td>
<td>..</td>
<td>2,359.7</td>
</tr>
<tr>
<td>Bahrain</td>
<td>13.0</td>
<td>..</td>
<td>..</td>
<td>16.0</td>
<td>14.0</td>
<td>..</td>
<td>217.4</td>
<td>159.6</td>
<td>191.7</td>
<td>274.2</td>
<td>..</td>
<td>885.9</td>
</tr>
<tr>
<td>Tunisia</td>
<td>54.7</td>
<td>70.2</td>
<td>135.0</td>
<td>290.0</td>
<td>506.0</td>
<td>49.1</td>
<td>69.1</td>
<td>75.0</td>
<td>67.4</td>
<td>107.3</td>
<td>200.0</td>
<td>1,623.8</td>
</tr>
<tr>
<td>Algeria</td>
<td>3.5</td>
<td>..</td>
<td>..</td>
<td>122.0</td>
<td>85.8</td>
<td>347.5</td>
<td>350.0</td>
<td>54.6</td>
<td>80.4</td>
<td>263.3</td>
<td>260.6</td>
<td>1,567.6</td>
</tr>
<tr>
<td>Saudia</td>
<td>12.2</td>
<td>20.6</td>
<td>27.0</td>
<td>198.0</td>
<td>82.0</td>
<td>76.8</td>
<td>651.4</td>
<td>716.9</td>
<td>297.3</td>
<td>958.0</td>
<td>28,797</td>
<td>31,837.2</td>
</tr>
<tr>
<td>Sudan</td>
<td>38.8</td>
<td>554.0</td>
<td>142.5</td>
<td>70.3</td>
<td>151.7</td>
<td>414.6</td>
<td>554.9</td>
<td>567.4</td>
<td>610.0</td>
<td>657.0</td>
<td>2,341</td>
<td>6,102.2</td>
</tr>
<tr>
<td>Syria</td>
<td>333.5</td>
<td>303.0</td>
<td>328.0</td>
<td>212.0</td>
<td>224.0</td>
<td>8.7</td>
<td>43.5</td>
<td>46.5</td>
<td>42.4</td>
<td>427.2</td>
<td>1,673</td>
<td>3,641.4</td>
</tr>
<tr>
<td>Oman</td>
<td>4.2</td>
<td>24.0</td>
<td>18.7</td>
<td>42.0</td>
<td>45.8</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>62.6</td>
<td>..</td>
<td>197.3</td>
<td></td>
</tr>
<tr>
<td>Qatar</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>54.4</td>
<td>58.0</td>
<td>61.8</td>
<td>65.5</td>
<td>68.5</td>
<td>10.0</td>
<td>..</td>
<td>..</td>
<td>318.2</td>
</tr>
<tr>
<td>Lebanon</td>
<td>157.8</td>
<td>250.0</td>
<td>312.0</td>
<td>400.0</td>
<td>500.0</td>
<td>350.0</td>
<td>225.0</td>
<td>650.0</td>
<td>850.0</td>
<td>1,050</td>
<td>1,780</td>
<td>6,524.6</td>
</tr>
<tr>
<td>Libya*</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>80.4</td>
<td>85.0</td>
<td>82.0</td>
<td>102.0</td>
<td>23.0</td>
<td>500</td>
<td>875.1</td>
</tr>
<tr>
<td>Egypt</td>
<td>455.0</td>
<td>711.0</td>
<td>532.0</td>
<td>390.0</td>
<td>277.0</td>
<td>113.0</td>
<td>96.5</td>
<td>100.4</td>
<td>125.5</td>
<td>418.0</td>
<td>827</td>
<td>4,045.4</td>
</tr>
<tr>
<td>Morocco</td>
<td>59.8</td>
<td>61.2</td>
<td>48.0</td>
<td>48.6</td>
<td>22.2</td>
<td>24.8</td>
<td>39.5</td>
<td>12.8</td>
<td>672.1</td>
<td>1,105</td>
<td>1,121</td>
<td>3,215.8</td>
</tr>
<tr>
<td>Yemen</td>
<td>11.9</td>
<td>86.0</td>
<td>11.0</td>
<td>22.2</td>
<td>16.7</td>
<td>68.5</td>
<td>6.5</td>
<td>139.4</td>
<td>126.4</td>
<td>58.8</td>
<td>204</td>
<td>751.3</td>
</tr>
<tr>
<td>Total</td>
<td>1,430</td>
<td>2,094</td>
<td>1,590</td>
<td>2,314</td>
<td>2,183</td>
<td>1,817</td>
<td>2,647</td>
<td>2,912</td>
<td>3,844</td>
<td>5,958</td>
<td>38,01</td>
<td>64,795</td>
</tr>
</tbody>
</table>

*Data are not available for the period of 1995-1999 due to the Siege sanction.
Source: The Inter-Arab Investment Guarantee Corporation, 2006.

Cumulative intra-Arab investment from 1985 until the end of 2005 was about US$73.9 million, and the annual flow of intra-Arab investment was about US$3.5 million over the same period.

It is remarkable that the service sector has continuously accounted for the greatest proportion of intra-Arab investment. In 2005, it accounted for about 84.5 per cent of these investments. This is attributable to large infrastructure investments. In addition, some intra-Arab investments have been made in communications, financial services, and the tourism sector. In contrast, the industrial sector accounted for only 6.1 per cent of total investment in 2005, followed by the agricultural sector at less than 1 per cent, and other sectors at about 9.4 per cent.
Table 11 shows aggregate intra-Arab FDI flows during the 1985-2002 period. Although the table shows that intra-Arab FDI among some Arab countries is weak, it can be said that there were significant FDI flows among other Arab countries during the 1985-2002 period, especially for the case of Saudi Arabia. From the table, it can be seen that during the 1985-2002 period, US$6,535,549 thousand is the highest value of aggregate intra-Arab FDI flows. It was registered by Saudi Arabia as the host country and the AUE as the source country, followed by US$1,579,560 thousand which was registered by Saudi Arabia as the host country and Egypt as the source country, and then US$1,205,470 thousand which was registered by Saudi Arabia as the host country and Lebanon as the source country.

Table 11: Aggregate Intra-Arab FDI Flows during 1985-2002 (Thousands US$)

<table>
<thead>
<tr>
<th>Source Country</th>
<th>Host Country</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jordan</td>
</tr>
<tr>
<td>Jordan</td>
<td>11,815</td>
</tr>
<tr>
<td>UAE</td>
<td>29,277</td>
</tr>
<tr>
<td>Bahrain</td>
<td>4,359</td>
</tr>
<tr>
<td>Tunisia</td>
<td>135,844</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>319,636</td>
</tr>
<tr>
<td>Syria</td>
<td>12,021</td>
</tr>
<tr>
<td>Oman</td>
<td>12,111</td>
</tr>
<tr>
<td>Qatar</td>
<td>8,624</td>
</tr>
<tr>
<td>Kuwait</td>
<td>27,801</td>
</tr>
<tr>
<td>Lebanon</td>
<td>1,173</td>
</tr>
<tr>
<td>Egypt</td>
<td>134,992</td>
</tr>
<tr>
<td>Morocco</td>
<td>2,445</td>
</tr>
</tbody>
</table>

( ..) Means unavailable Data
Source: AMF, various issues.
The interesting thing is that the FDI flow between two GCC members, i.e. Oman as the host country and Qatar as the source country, represents the lowest aggregate intra-Arab FDI flow during 1985-2002. This may be because both Oman and Qatar are small oil-exporting countries. For the case of Jordan, the highest FDI flow during the period was received from Saudi Arabia (US$319,636 thousand) and then from Tunisia (US$135,844 thousand) and Egypt (US$134,992 thousand). For the case of UAE, the highest FDI was received from Lebanon (US$804,405 thousand) and then Syria (US$375,386 thousand).

While Bahrain received the highest FDI from Saudi Arabia (US$149,665 thousand), Saudi Arabia received the highest FDI from UAE as mentioned above. Syria as a host country of intra-Arab FDI registered its highest value inflow from Saudi Arabia (US$539,722 thousand). The highest receiving FDI values of both Oman and Qatar were from UAE and Egypt respectively.

3.3.2 The Intra-Arab Stock Market

Darrat et al (2000) examined stock market integration among three Arab countries. They investigated the linkages between the stock markets of Egypt, Morocco and Jordan, and their linkage with the US stock market. They used co-integration techniques and an error correction model. Time-series cross-sectional estimation was used for the three emerging markets and the US during the period from October 1996 to August 1999.

Darrat et al (2000) found a long-run relationship between the indices of the three Arab markets considered. This may be due to these countries’ similar socio-economic or
political factors. They also found that these Arab markets are segmented from the international market (represented by the US market in this study). No significant co-integration was found between these Arab markets and the US market. Egypt plays an important role in the financial stability of the region. Based on the Granger-causality test, the study found that short-run causality primary runs from Jordan’s market and Egypt's market to Morocco's market, without feedback.

Neaime (2002) used the Johansen (1991, 1995) efficient maximum likelihood test to examine the existence of a long-term relationship between the stock markets of a group of MENA countries (Egypt, Saudi Arabia, Kuwait, Bahrain, Jordan, Morocco and Turkey) and the world markets represented by the US, UK and French markets. Weekly data were used in this study, covering periods in the 1990s, depending on the availability of data. The markets were divided into two groups of countries. The first group comprised three oil producing countries, namely Saudi Arabia, Kuwait and Bahrain. The second group comprised the rest of the Arab countries studies. The main findings of Neaime’s (2000) study were:

(i) The stock markets of GCC are segmented from the rest of the world, but they are integrated with each other.

(ii) There is a significant level of co-integration between the stock markets of Egypt, Morocco, Jordan and Turkey and the financial markets of the world.

Maghyereh (2003) examined financial integration among four MENA emerging markets, namely Jordan, Egypt, Morocco and Turkey. He found that stock market
integration was influenced by geographic factors, and that stock market integration among countries located in the same region provides evidence concerning the degree of intra-regional trade and macroeconomic coordination. This study used daily data for the national stock indices of the four markets during the period 28 November 1997 to 12 December 2002. Its main finding was that the linkages between the four markets were weak. Also, Maghyereh (2003) also found that the stock market of Turkey is relatively bigger than the other stock markets; as a result it affected them. The implication of this study is that weak integration among these stock markets gave both international and regional investors numerous opportunities for portfolio diversification by investing in this region.

Abu-Sharia (2005) studied the relationship between the stock markets of selected Arab countries and their economic growth. He examined the effect of stock market development and economic reform on economic growth. The importance of stock market development and economic reform as determinants of economic growth were empirically examined for the selected Arab countries in this study. Abu-Sharia (2005) also compared the role of stock markets in economic growth in the Arab region with the East Asia-Pacific and G-7 economies. The period concerned in this study was 1980-2002 and, due to the limitation of data availability, the study concentrated on the averages of the data available on the stock markets of the Arab countries.

Due to the lack of data, Abu-Sharia (2005) limited his empirical analysis to use of the co-integration method and Granger-Causality tests. He used dynamic growth estimation

23 Bahrain, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, and United Arab Emirates.
24 Australia, China, Hong Kong, Indonesia, South Korea, Malaysia, New Zealand, the Philippines, Singapore and Thailand.
25 Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.
techniques with cross-country and time series analysis on annual observations of 28 countries and an unbalanced panel data set over the period concerned in order to examine two main hypotheses that:

(i) A well functioning stock market may affect economic activity in an economy through growth of savings, efficient allocation of resources, and better utilization of the existing resources;

(ii) The stock market is a “casino” that has little positive impact and perhaps even a negative impact on economic growth.

The most important finding of Abu-Sharia (2005) was that, due to the lack of transparency and illiquidity problems that limit the effectiveness of Arab markets in the economy, the Arab stock markets had an insignificant effect on economic growth. In contrast, the results for East Asia-Pacific and G-7 economies suggested that stock market development had a significant effect on economic growth and it was positively correlated with economic growth.

3.4 Intra-Arab Labour Flows (Remittances)

Fischer (1992) investigated the GCC region in terms of trade and labour flows. Due to the characteristics of products that are demanded in this region, which can only be found in products from advanced countries, the trade flows of this region are more significant with developed countries than with Arab countries. However, only labour-intensive and skill-specific services are demanded in the GCC region, and this demand can be met partly by labour flows from Arab countries with abundant labour and low labour incomes. Consequently, intra-Arab goods trade is very limited, and intra-Arab
labour flows are very large. It would be useful to extend the Fischer (1992) study to investigate more Arab countries during significant international events, such as the Gulf War or the attacks of September 11, 2001 on the World Trade Centre in the US.

Based on size, economic structure, and resource endowment, Karshenas (1997) divided the Arab region into four broad groupings:

(i) Low absorption oil economies with low populations and high income, namely Saudi Arabia, Libya, Kuwait, the United Arab Emirates, Bahrain, Oman and Qatar. Although these countries are close to high income industrialized countries in terms of income per capita, their economic structures are very different from the industrialized economies.

(ii) The high absorption oil economies of Algeria and Iraq. In this group of countries, the percentage of hydrocarbons in exports has reached more than 90 per cent. However, the sizes of these countries are large; as a result, they have a more differentiated production structure. Relatively this group of countries has a longer industrialization experience; additionally it has huge complementary land and labour resources. In the 1970s and the 1980s, the percentage of the combined share of agriculture and industry in GDP of this group was 40-50 per cent.

(iii) Large non-oil economies, namely Egypt, Morocco, Sudan and Syria. While, more than 50 per cent of the Arab world's population is in this group of countries, this group of countries produces about
25 per cent or less of total Arab GNP. Moreover, these countries have a lower per capita income than both groups mentioned above. On the other hand, the economies of countries in this group are characterized by a higher degree of diversification, both in terms of foreign trade and structure of production.

(iv) Small non-oil economies, namely Lebanon, Jordan, Yemen and Tunisia. While the population of this group of countries forms 10 per cent of the region, the economies of these countries account for less than 5 per cent of the national income in the Arab region. The economies of these countries are also distinct because of their small size and open nature. Consequently, they are highly dependent on economic activity in the region as a whole.

Karshenas (1997) concluded that the developments in the labour markets in the countries of the Arab region have been closely entangled with the growth and structural change processes during two distinct phases: (i) the pre-1980s period, which was characterized by rapid inward-oriented industrialization fostered by fast growth of primary commodity export volumes and prices; and (ii) the phase since 1980, which has witnessed a sharp decline in primary commodity export volumes and prices (this has been a period of economic adjustment and restructuring).

Awad (2004) identified inter-related labour mobility as a preference given to workers from country parties to respond to demand originating from economic growth. Due to the increasing flows and stocks of migrant workers between countries, and due to preferential treatment and elimination of impediments, economies can grow. Due to a
lack of integrated economic policies and an absence of common markets, such as in the Arab region, economic growth is restricted only to the demand for labour of receiving countries. Intra-Arab migrant workers are not given any preference; as a result they are left to face competition from workers that have migrated from non-Arab countries.

Ibrahim (2005) investigated the labour market of the GCC and demonstrated that in spite of the elimination of barriers of intra-employment policy among GCC countries, intra-employment among their nationals is still limited due to the division and unavailability of information in terms of both supply and demand, and the lack of interest of both GCC employers and employees. The limited qualifications of most of the Arab job seekers can be considered one of the reasons for limited intra-Arab labour. Ibrahim (2005) adopted a methodology that involved descriptive and analytical analysis of GCC labour market matters relating to intra-GCC employment, such as labour market policies, productivity and flexibility.

The main finding of Ibrahim (2005) study was that intra-GCC labour mobility does not represent a major component of employment in the GCC region compared to expatriates. The study also suggested that the opening up of the GCC labour market is the most important requirement for achieving flexibility of this market. To improve the economic integration process, the establishment of a common currency for the region may be a vital factor, especially with regard to forcing member countries to remove any impediments that limit labour flexibility and mobility.
3.5 Convergence and Economic Union

Darrat and Pennathur (2002) examined the existence of co-integrating relationships among the Arab Maghreb countries, and the role the AMU plays in regional integration. This is different from Testas's studies (1997, 1998) which assessed the significance of the (AMU) and its import expansion effects judged from the perspective of only one member of the union (Algeria). Darrat and Pennathur (2002) performed their study by testing for co-integration before and after 1989 (the year when the AMU was established). To assess the degree of economic integration among country members of the AMU they examined the fundamental long-run equilibrium relationship among their respective gross domestic products. With regard to financial linkages, they focused on the co-integrating relationship among money stocks of the countries concerned and monetary bases.

Interrelationships among money stocks may provisionally measure the degree of linkages of the financial sectors in the region, particularly in those developing countries which have relatively rudimentary and inadequate financial markets outside the banking system. Consequently, data on financial markets (financial assets) and banks (money stocks) have been used in research into developing countries. Accordingly, Darrat and Pennathur (2002) began their empirical analysis by testing for unit roots in GDP and monetary bases in the case of AMU countries. In spite of the widespread use of co-integration methodology for testing economic and financial integration, there are still insufficient studies that use the co-integration approach to examine the degree of integration among Arab countries.
The main result of the research by Darrat and Pennathur (2002) was that the efficient test of co-integration could not reject the existence of long-run economic and financial relations connecting the three AMU countries concerned (Algeria, Morocco and Tunisia). Therefore, it could be said that the failure of the Maghreb countries to achieve a real integration in the region is due to another reason rather than economic or financial incompatibility.

Laabas and Limam (2002) concentrated on the question as to whether the GCC possesses the characteristics of a most favourable currency area or not. They applied a generalized purchasing power parity test, showing that the real exchange rates of GCC were closely related and share the same tendency. Laabas and Limam (2002) argued that as soon as the GCC was established it could expand intra-industry trade in spite of the existing lack of diversification. Finally, they concluded that the GCC would lead to more convergence in terms of economic structures, economic policies and coordinated business cycles.

A properly implemented currency union may contribute to improve economic efficiency in the GCC region (Jadresic, 2002), intensify regional integration and develop its non-oil economy. However, a currency union should be seen as only one factor of a much broader integration effort. Abed, Erbas, and Guerami (2003) investigated the appropriate exchange rate regime and the possibility for the GCC countries to create a common currency. They argued that the more diversified GCC economies can initially be more flexible in terms of exchange rate, and then a basket of currencies would be required for transition. They concluded that stabilizing currencies vis-à-vis the dollar leads to a similar impact on economic stability.
The macroeconomic cost of a monetary union depends on the frequency and severity of asymmetric shocks. A monetary union can mitigate the impacts of these shocks by exposing the member countries to the available adjustment mechanism, given that the national monetary and exchange rate adjustment mechanisms are not individually bestowed on any member country. The exchange rate between currencies of the participating countries will be irrevocably fixed in relation to the new currency.

According to the theory of an optimum currency area, trade patterns and cyclical correlations are important criteria in determining whether a country should join a monetary area. Recently, there has been a proposal for the creation of a single currency for several regions in the world, such as was achieved in the European region after the implementation of the Euro, and in the US with its dollar currency. Arab countries have also aspired to create a common currency area. For example, GCC countries formally declared this aim through a unified economic agreement in 1982, which specified that the members would seek to coordinate their financial, monetary and banking policies. These countries still have to enhance cooperation between their monetary agencies and central banks. The attempts to establish a common currency should be further promoted in order to further their preferred economic integration.

**3.6 Conclusion**

This chapter presented a review of the most important studies that address the relationships between trade, investment and labour. The survey of studies of Arab economic integration through intra-trade using the gravity model reveals that intra-Arab trade is insufficient. The important point is that, although many international events
occurred such as the war in Iraq, the last war in Lebanon, and the changing desire of Libya from Arab integration to African integration, there is no study of the Arab region that has investigated the period since 2000. This thesis analyzes the period of 1985-2005.

Although the importance of intra-investment to support economic integration is clear, there are insufficient studies of intra-Arab investment and Arab economic integration. Some studies of intra-Arab FDI, such as that of Krogstrup and Matar (2005), point out that relative to other developing regions the Arab region has received a small portion of FDI, and that the Arab countries have to increase their intra-FDI in order to decrease the gap between themselves. Bolbol and Fatheldin (2005) stated that the gravity model can be applied to investigate intra-FDI, but no such study has yet been done. The current study tries to investigate intra-Arab FDI and the potential of extending Arab economic integration through intra-FDI.

It can be said that the field of intra-Arab labour flows and Arab economic integration has not been deeply investigated. Only a few studies have tried to explore the GCC region in terms of labour flows. Most of these studies stated that GCC countries significantly depended on specific skilled labour. Due to welfare conditions in the GCC region, most of the intra-Arab expatriates tend to go to GCC countries. Consequently, most of the Arab countries depend on GCC countries with regard to job opportunities and remittances. Nevertheless, no study has empirically investigated the intra-Arab labour flows and the potential of extending Arab economic integration through intra-labour flows. This study is an attempt to fill this gap in existing research.
Chapter Four

The Nature of Intra-Arab Trade

“Initially, studies on bilateral trade refer little to the mainstream trade theory. This is largely because the traditional trade theory has focused on the size and pattern of a country’s total trade in the two-country framework. Hence, there is no room to make allowance for bilateral and regional trade flows in a multi-country real world. Nevertheless, one can draw implications from the theory to understand the determinants of bilateral trade flows, since bilateral trade between a particular pair of trading countries evolves as an aspect of their global trade.” (Park, 2004: 341).

4.1 Introduction

Although regional economic integration initiatives among Arab countries started many years ago, intra-Arab trade has been a relatively small portion of total Arab trade, both in absolute terms as well as compared with other regions in the world. The history of regional economic integration in the Arab region dates back to the establishment of the Arab League in 1945. This chapter provides an evaluation of intra-Arab trade in order to predict whether intra-Arab trade can be extended. The literature of economic integration demonstrates that intra-trade among nations can be considered as a vital path to achieve economic integration and subsequently economic development. Applying the gravity model, this chapter examines intra-Arab trade as one of the essential avenues for economic integration in the Arab region. The period considered in this chapter is 1985-2005.

This chapter is divided into eight parts: Part 2 represents the pattern of intra-Arab trade, Part 3 considers sub-regional integration in the Arab region, Part 4 covers restrictions on intra-Arab trade, Part 5 considers the appropriate specification of a gravity model and its modification for intra-Arab exports, Part 6 covers the panel data approach, Part 7 represents the empirical results and Part 8 gives concluding comments.

4.2 The Pattern of Intra-Arab Trade

Since the benefits of the traditional free trade paradigm have failed to manifest themselves in all developing countries, regional economic integration is considered in the literature as a possible development strategy for some countries. Many countries have dismantled their restrictions on trade as well as on capital flows during the 1980s and 1990s. Moreover, they liberalized restrictions on foreign direct investment and deregulated their domestic financial markets. Consequently, the drive for regional economic integration has increased, particularly for developing countries that see more integration as an avenue to achieve economic growth. Economic integration as a goal has been enunciated by MENA countries, and Arab countries generally, since the 1950s.

Although Arab countries share many similarities such as culture, religion and language, they also have some major differences in terms of natural resources, size and standards of living. In addition, some Arab countries have mainly agricultural economies, such as Sudan and Mauritania, while others are mainly energy producers, such as Libya, Algeria and members of the GCC. Others have a rising industrial base, for example, Egypt and Morocco. The interesting thing is that both intra-regional trade among
countries with similar features such as EU members, and among countries with different features, such as NAFTA members, is higher than trade among Arab countries.

In this chapter, Arab countries have been divided into four subgroups based mostly on geographical location and production base, namely the Maghreb countries\textsuperscript{27}, the Gulf countries\textsuperscript{28}, the Mashreq countries\textsuperscript{29}, and other countries\textsuperscript{30}. The trade of each country with its subgroup countries is more prevalent than its trade with other Arab countries that are not members in its subgroup. The percentage of trade among Maghreb country members is around 67\% of their total trade with Arab countries. The percentage of trade among Mashreq members is about 33\% of their total trade with other Arab countries, whilst the percentage of trade among GCC members is about 75\% of their total trade with other Arab countries. This means most intra-Arab trade occurs within these sub-regions.

There are some constraints on intra-Arab trade, such as policies that induce barriers to trade. El-Naggar (1992), Fischer (1993), El-Erian and Fischer (1996) and Al-Atrash and Yousef (2000) have indicated how these policies produce barriers to intra-Arab trade. While some Arab countries, particularly the GCC countries, adopt a relatively open trade policy, others have imposed considerable trade barriers.

The location of some Arab countries has been considered as an obstacle to intra-Arab trade; some of the Arab countries have geographical difficulties that make intra-trade

\textsuperscript{27} Algeria, Libya, Mauritania, Morocco, and Tunisia.
\textsuperscript{28} Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.
\textsuperscript{29} Jordan, Lebanon and Syria.
\textsuperscript{30} Egypt and Sudan.
less appealing than trade with the rest of the world. The Arab Maghreb countries, for instance, are close geographically. However, the cost of trade between these countries is much higher than that of trade with Europe because some European countries are closer than the Arab countries. As a result, trade among Arab Maghreb countries is less than trade between Arab Maghreb countries and some European countries (Al-Atrash and Yousef, 2000).

4.3 Sub-Regional Integration in the Arab Region
The free trade agreement and moves to create an economic union in the Arab region have tried to encourage both Arab and foreign investments as well as increase competition in domestic markets. Further opportunities for job creation and more growth in Arab economies were forecast as a result of these integration efforts. Elimination of tariffs on all imported products of Arab origin was expected. Additionally, exemptions or at least reduced barriers seemed necessary otherwise the intra-Arab trade expansion would be insignificant. Moreover, the share of non-oil intra-regional trade was expected to be boosted by GAFTA. However, it can be observed that regional economic integration in the Arab region in general, and on the pan-Arab level in particular, remains weak as a result of the impasse between oil-rich and oil-poor countries. Consequently, sub-regional integration has emerged in the Arab region, in the form of groups such as the GCC and MAU.

4.3.1 The Gulf Co-Operation Council (GCC)
The Gulf Co-operation Council was established by Arab countries located in the Gulf region in 1981. The governments of the GCC approved an economic agreement setting the stage for full economic integration. Therefore, all necessary steps towards achieving
full economic integration were decided to be taken by GCC governments. They started with a free trade zone established in 1993. GCC governments, with a planned attainment date of 2010, have also aimed at a common currency.

The Gulf Cooperation Council was created in order to enhance the economies of Arab Gulf countries. One of the GCC aims is to coordinate resistance to outside intervention in the economies of GCC members. During the 1980s, the progress towards economic integration was slow. Consequently, there was an economic downturn in the region. The GCC seeks to strengthen cooperation in several sectors such as security, industry, investment, agriculture and trade among the member countries. Liberalization of capital and labour flows has been realized as a result of establishing common policies for investment in petrochemical and industrial projects. To promote the free trade area, GCC governments have also taken some steps towards forming a common market.

4.3.2 The Arab Maghreb Union (AMU)

Mahasneh (1991) stated that since Arab countries achieved their independence in the decades following World War II, economic integration and unity have been one of their main ambitions. In spite of the failure of many attempts to achieve economic integration among Arab countries, attempts at economic integration have been made by Arab sub-regions. One example of such sub-regional economic integration is the Arab Maghreb Union (AMU), which was established in 1989 by Libya, Algeria, Tunisia, Morocco and Mauritania.

In the AMU case, the common market is called the Maghreb Economic Space, within which the freedom of mobility of productive factors and products such as labour,
goods, services and energy products is foreseen. With the aim of achieving economic growth, members of the AMU initially aimed to strengthen their economic and cultural relations, ensure regional stability and increase trade exchanges amongst themselves. On the other hand, to facilitate inter-bank operations within the region, the Governors of the Central Banks of the AMU country members signed a multilateral payments agreement. This agreement covers the modalities of payments between the central banks, prepares the payment systems of members to be unified, and provides for monthly settlement of balances amongst the countries without interest. Bilateral arrangements between the participating countries have been allowed, and the AMU agreement also provides for the possibility of other Arab countries and African countries joining the Union at a later phase.

4.4. Restrictions on Intra-Arab Trade

4.4.1 Shortcomings of the Arab Region

Institutional reforms are considered an essential complement to macroeconomic adjustment and structural reforms. A supportive framework is required for vigorous private investment. The environment needs to be receptive to commercially oriented institutions that are protected from the political process. Often the failure of economic institutions in the Arab region has been due to political reasons and other impediments found in the region. Consequently, the regional economic integration in the Arab region has been weak.

Due to inadequate institutions and the lack of a legal framework for investment and transparency in the regulatory environment, a higher degree of risk and higher transaction costs have existed in the Arab region. In the region, trade liberalization has
been widely needed. In spite of the successful implementation of openness of trade policies in many countries in recent years, few trade liberalization efforts have been undertaken in the Arab countries. Trade systems of Arab countries have been characterized by high rates of protection, with the result that the economies have remained relatively closed.

According to Bolbol and Fatheldin (2005), the reason for relatively low intra-Arab trade volumes is the lack of product complementarity among the Arab countries. These authors also noted that trade is highest among Arab members of subgroups. This reflects important points. The first point is that Arab countries should be able to free up more than 10% of the trade among themselves. The second and perhaps more important point is that the best preliminary approach to Arab trade integration is through the subgroup level.


4.5.1 The Gravity Model

Helpman (1984) and Bergstrand (1985) derive the gravity model from theoretical trade principles based on product differentiation. The model predicts that trade between two countries depends on their characteristics, such as their size, the population of each country, and the distance between them. The gravity model of trade in international economics offers a good application of the spatial interaction method.

According to the gravity model, the attraction between two objects is proportional to their mass and inversely proportional to the distance between them. Consequently, the
general formulation of spatial interactions can be modified to reflect this essential supposition to form the elements of the gravity model:

\[
T_{ij} = C \left[ \frac{Y_i^\gamma \cdot Y_j^\alpha}{D_{ij}^\beta} \right]
\]  

(4.1)

In equation (4.1), \( T_{ij} \) is the trade flow from country \( i \) to country \( j \), \( Y \) is the economic mass of each country, and \( D_{ij} \) is distance between the locations of origin and destination respectively. \( C \) is a proportionality constant. Related to the time rate of the event, the value of \( C \) will depend on the interval considered. For example, if the same system of spatial interactions is considered, the value of \( C \) will be higher if interactions are considered for a year rather than for a week. Hence, spatial interactions between locations \( i \) and \( j \) are proportional to their respective importance divided by the distance between them.

The gravity mode can be extended to comprise several parameters

\[
T_{ij} = C \left[ \frac{Y_i^\gamma \cdot Y_j^\alpha}{D_{ij}^\beta} \right]
\]  

(4.2)

In equation (4.2), \( Y \), \( D \) and \( C \) refer to the same variables already mentioned. \( \beta \) is a parameter indicating transport friction or transport efficiency between two locations. This friction is rarely linear as the further the movement, the greater the friction of distance. For example, if the link between two locations is a highway, the index will have a weaker \( \beta \) value than in the case of a local road.
\( \lambda \) represents the potential to generate movements. In the case of people movements, \( \lambda \) is often related to the level of welfare. For instance, it is rational to deduce that for retailing flows a location having higher income levels will create more movements than locations with less income.

The \( \alpha \) parameter represents the level of attractiveness, i.e. the potential to attract movements. Related to the degree of economic activity at the destination, sufficiency of activities is an attractive factor. For instance, a centre having important commercial activities will attract more movements.

It should be noted that the calibration of a gravity model is a significant challenge that is related to the usage of spatial interaction models. In finding the calibration variable, it must be ensured that there is no difference between the estimated results and the observed flows. Empirical testing can indicate whether the process of calibration is correct.

Changing \( \beta, \alpha \) and \( \lambda \) will affect the estimated spatial interactions. Moreover, the value of the parameters can change over time because of several factors such as economic development and technological innovations. For example, improvements in transport efficiency lead to reducing the value of the \( \beta \) exponent. Economic development will most probably affect the values of \( \alpha \) and \( \lambda \), reflecting mobility growth.

Bergstrand (1985) has explained that the gravity equation has been long recognized for its consistent empirical success in explaining numerous different types of flows, such as migration, commuting, tourism, and commodity shipping. Calibration can also be
considered according to several factors such as age, income, gender, and type of merchandise. A large part of research in transport and regional planning aims at finding accurate parameters for spatial interaction models. Although this is a costly and time-consuming process, it is a very useful one. Once a spatial interaction model has been validated for a region, then it can be used for simulation and prediction purposes. Examples include calculating how many supplementary flows would be created if the population increased, or if better transport infrastructure was provided.

The model predicts that the value of trade between a pair of countries $i$ and $j$ depends on several economic variables such as their GDPs and the distance between them. Setting $C = \alpha_0', \lambda = \alpha_1, \alpha = \alpha_2$ and $\beta = -\alpha_3$, (4.2) can be rewritten as

$$T_{ij} = \alpha_0' Y_i^{\alpha_1} Y_j^{\alpha_2} D_{ij}^{\alpha_3}$$  (4.3)

Where: $T_{ij}$ is the value of trade between country $i$ and country $j$; $\alpha_0'$ is a constant; $Y_i$ and $Y_j$ are the real GDPs of countries $i$ and country $j$, respectively; and $D_{ij}$ is the geographic distance between the capital cities of countries $i$ and $j$. The expectation is that trade will be positively affected by GDP, implying both $\alpha_1$ and $\alpha_2$ are greater than 0 and negatively affected by distance ($\alpha_3 < 0$). To achieve a model that is linear in its parameters, we can take natural logarithms of (4.3), yielding

$$\ln T_{ij} = \alpha_0 + \alpha_1 \ln Y_i + \alpha_2 \ln Y_j + \alpha_3 \ln D_{ij}$$  (4.4)

(where $\alpha_0 = \ln \alpha_0'$)
Adding a disturbance term gives the model to be estimated as

\[ \ln T_{ij} = \alpha_0 + \alpha_1 \ln Y_i + \alpha_2 \ln Y_j + \alpha_3 \ln D_{ij} + \varepsilon_{ij} \]  

(4.5)

It can be seen that model (4.5) is a linear regression model in the parameters \( \alpha_0, \alpha_1, \alpha_2 \) and \( \alpha_3 \). In addition, this model is linear in logarithms of the variables \( T_{ij}, Y_i, Y_j \) and \( D_{ij} \).

As (4.5) is a double log formulation, the coefficient of the logarithm of each variable will be the elasticity of \( T_{ij} \) with respect to that variable, which in this case will be a constant. Thus, for example, the point elasticity of intra-Arab exports \( T_{ij} \) with respect to the GDP of country \( j \) is given by:

\[ \frac{\partial \ln T_{ij}}{\partial \ln Y_j} = \frac{\partial T_{ij}}{\partial Y_j} \frac{Y_j}{T_{ij}} = \alpha_2 \]  

(4.6)

In this chapter, equation (4.5) is augmented with several dummy variables (see below). The gravity model has been used to evaluate the influence of trade treaties and the effectiveness of trade agreements.

Feenstra, Markusen and Rose (2001) emphasize that despite the gravity equation’s empirical success, there is a lack of understanding of the theoretical foundations of the model. While the model consists of a factor that is more related to geographic and spatiality aspects, it estimates the pattern of international trade. The model has also
been used to test several hypotheses that relate to purer theories of trade as well, such as the theory that predicts relative factor abundances will affect trade.

The gravity equation that is applied in this chapter is given below.

\[
\ln T_{ij} = \alpha_0 + \alpha_1 \ln Y_i + \alpha_2 \ln Y_j + \alpha_3 \ln D_{ij} + \alpha_4 \text{Dum}_1 + \alpha_5 \text{Dum}_2 + \alpha_6 \text{Dum}_3 + \alpha_7 \text{Dum}_4 + \varepsilon_{ij}
\]  

(4.7)

Where in addition to the variables already introduced:

- \( \text{Dum}_1 \) represents existence of a shared border: it takes value of one if the pair countries share a border and takes the value zero otherwise.
- \( \text{Dum}_2 \) is sub-regional union (GCC or AMU): this dummy takes the value of one if at least one of the pair of countries is a member of a sub-regional union (GCC or AMU) and Zero otherwise. This dummy is added to the gravity model to investigate the effect of such sub-regional unions on intra-Arab trade.
- \( \text{Dum}_3 \) represents oil-exporting status: it takes the value of one if at least one of the pair countries is a oil-exporting country and is zero otherwise. This dummy is added to the gravity model to investigate the effect of oil exports and the similarities of such exports on intra-Arab trade.
- \( \text{Dum}_4 \) represents political stability: it takes a value of zero if at least one of the pair countries suffers from political problems, such as war with another country or civil war, and takes a value of one otherwise. This dummy is added to the gravity model to investigate the political stability in the Arab countries on their intra-trade.
4.6.1 The Panel Approach

Panel data techniques are used for studies that deal with data structured as cross-section time-series. As one author [Green, 2008:181-182] notes:

“…Panel data sets are more oriented toward cross-section analyses; they are wide but typically short. Heterogeneity across units is an integral part – indeed, often the central focus – of the analyses. The analysis of panel or longitudinal data is the subject of one of the most active and innovative bodies of literature in econometrics, partly because panel data provide such a rich environment for the development of estimation techniques and theoretical results. In more particular terms, however, researchers have been able to use time-series cross-sectional data to examine issues that could not be studied in either cross-sectional or time-series alone. …..The fundamental advantage of a panel data set over cross section is that it will allow the researcher great flexibility in modelling differences in behaviour across individuals.”

Panel data analysis may be used to study several economic phenomena over time, such as trade, investment and labour. When observations of enough cross-sections are repeated, the panel data analysis permits the researcher to examine the dynamics of change with short time series. In some studies, using only time series or cross-section data methods would be impossible. Therefore, both the quality and quantity of data can be enhanced by combination of time series with cross-sections. The spatial dimension pertains to a set of cross-sectional units of observation, such as countries. On the other hand, the temporal dimension is related to periodic observations of particular variables characterizing these cross-sectional units over a particular time period concerned. Using panel data generates several advantages, such as allowing control of the unobservable time-invariant country-specific effects.
4.6.2 Panel Model Types

Panel data can be analysed using several types of models, including constant coefficients models, fixed effects models and random effects models. Among these types of models are dynamic panel, robust and covariance structure models. A brief explanation of some of these models is provided below.

*The Constant Coefficient Model*

This panel model type has constant intercepts and slope coefficients. In the case that there is neither significant country nor significant temporal effects, the data could be pooled and the model estimated by ordinary least squares. Although quite often there are either country or temporal effects, there are some occasions when neither of these is statistically significant. Sometimes this model is named the pooled regression model.

*The Fixed Effects Model*

Fixed effects regression allows for differences between cases and constant terms over time.

As Green (2008: 193-194) notes, the fixed effects model arises from the assumption that the omitted effects \( c_i \) in the general model

\[
y_{it} = x_{it} \beta + c_i + \varepsilon_{it}
\]

are correlated with the included variables in the vector \( x_i \) that is:

\[
E(c_i | x_i) = h(x_i)
\]
Because the conditional mean is the same in every period, we can write the model as

\[ y_{it} = x_{it}' \beta + h(x_i) + \varepsilon_{it} + [c_i - h(x_i)] \]  

(4.10)

\[ = x_{it}' \beta + \alpha_i + \varepsilon_{it} + [c_i - h(x_i)] \]  

(4.11)

By construction, the bracketed term is uncorrelated with \( x_i \). Therefore, the model can be written as:

\[ y_{it} = x_{it}' \beta + \alpha_i + \varepsilon_{it} \]  

(4.12)

A further assumption is that \( \text{var}(c_i|x_i) \) is constant. In this case, equation (4.12) forms a conventional linear regression model. Thus, equation (4.9) implies the fixed effects model. The fixed effects model supposes that the differences between sections can be considered purely in terms of differences in the constant (intercept) term, such that each \( \alpha_i \) is considered as a parameter to be estimated.

In the case where the fixed effect estimators depend only on deviations from the group means, they are sometimes known as within-group estimators (Davidson and MacKinnon, 1993). The fixed effects regression allows the researcher to use changes in the variables over time with the aim of estimating the effects of the independent variables on the dependent variable. In addition, the fixed effects regression has commonly been the main technique used for analysis of panel data. While there are no
significant temporal effects, the significant differences amongst countries can be investigated using this type of model. The fixed effects model helps to lessen the potential of heteroscedasticity problems arising from possible differences between countries.

The fixed effects model is used in this study since one of its main aims is to investigate which explanatory variables most affect intra-Arab trade, intra-Arab FDI and intra-Arab labour flows over time between countries. In addition, the Arab countries are distinguished by different levels of economic development, technology, openness and capital sources. Therefore, fixed effects regression is very appropriate because it allows us to focus on how the differences in country characteristics affect intra-Arab trade, intra-Arab FDI and intra-Arab labour flows. There is another type of fixed effects model, which has constant slope coefficients on one hand, and intercepts that differ based on time on the other hand. In such a case, it might be that there are no significant country differences in the model. However, autocorrelation of disturbances due to time-lagged temporal effects might be present in such cases.

Although fixed effects models have advantages in terms of regression performance, they also have some drawbacks. It is quite often the case that fixed effects models may include many cross-sectional units that need many dummy variables for their specification. With regard to the power of statistical tests, numerous dummy variables may cause a weakness of the model in terms of an insufficient number of degrees of freedom. In addition, when many variables are included in a model, problems of multicollinearity may lead to high estimated standard errors. Furthermore, parameter
estimation may be precluded if some variables that do not vary within the groups are contained in the model.

The basic model specification assumes the disturbances are homoskedastic and independently normally distributed. However, there is a possibility of country-specific heteroskedasticity or autocorrelation over time. This may lead to additional nuisance estimation. On the other hand, in fixed effects models the error terms can be correlated with the individual effects and this can be considered as one of the advantages of such models.
4.7 Main Empirical Results on Intra-Arab Trade

The following tables give the results form panel date estimation of equation (4.7)

Table 12: Regression Results (Panel Least Squares Fixed Effects) for the Gravity Model of Intra-Arab Exports ($ln \ T_{ij}$)

Table 12A: Regression Results (Panel Least Squares Fixed Effects) for the Gravity Model of Intra-trade of Arab countries with GCC region.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Constant (t-statistics)</th>
<th>$GDP_i$ Coefficient (t-statistics)</th>
<th>$GDP_j$ Coefficient (t-statistics)</th>
<th>$D_{ij}$ Coefficient (t-statistics)</th>
<th>$Dum_1$ Coefficient (t-statistics)</th>
<th>$Dum_2$ Coefficient (t-statistics)</th>
<th>$Dum_3$ Coefficient (t-statistics)</th>
<th>$Dum_4$ Coefficient (t-statistics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bahrain</td>
<td>-11.37 (-2.39)</td>
<td>-0.73 (-13.53)**</td>
<td>2.55 (4.82)***</td>
<td>-0.12 (-0.65)</td>
<td>3.86 (25.92)**</td>
<td>0.94 (4.20)**</td>
<td>...</td>
<td>-0.11 (-0.83)</td>
</tr>
<tr>
<td>N : 126</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²: 0.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 2.52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 235.54</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kuwait</td>
<td>13.61 (1.97)</td>
<td>0.31 (2.58)**</td>
<td>0.98 (1.54)</td>
<td>-3.25 (-9.61)**</td>
<td>2.90 (10.04)**</td>
<td>...</td>
<td>-2.83 (-7.14)**</td>
<td>-0.40 (1.61)</td>
</tr>
<tr>
<td>N : 126</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²: 0.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 2.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 18.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oman</td>
<td>-40.36 (-2.41)</td>
<td>0.07 (1.05)</td>
<td>5.92 (3.48)**</td>
<td>-2.08 (-8.69)**</td>
<td>1.92 (9.46)**</td>
<td>...</td>
<td>-0.47 (-1.73)*</td>
<td>...</td>
</tr>
<tr>
<td>N : 168</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²: 0.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 2.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 76.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>18.72 (1.50)</td>
<td>0.27 (3.91)**</td>
<td>-0.90 (-0.68)</td>
<td>-1.17 (-7.31)**</td>
<td>0.30 (1.33)</td>
<td>...</td>
<td>-0.82 (-3.57)**</td>
<td>0.01 (0.05)</td>
</tr>
<tr>
<td>N : 189</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²: 0.59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 1.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 16.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UAE</td>
<td>-5.22 (-0.43)</td>
<td>-0.20 (-2.25)**</td>
<td>1.20 (1.11)</td>
<td>-0.29 (-0.93)</td>
<td>2.16 (11.94)**</td>
<td>0.12 (0.29)</td>
<td>...</td>
<td>0.21 (1.09)</td>
</tr>
<tr>
<td>N : 168</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²: 0.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 2.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 33.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) Indicates significant at 10 per cent, (**) indicates significant at 5 per cent, and (***) indicates significant at 1 per cent.
Table 12B: Regression Results (Panel Least Squares Fixed Effects) for the Gravity Model of Intra-trade of Arab countries with AMU region.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Constant (t-statistics)</th>
<th>( GDP_i ) Coefficient (t-statistics)</th>
<th>( GDP_j ) Coefficient (t-statistics)</th>
<th>( D_{ij} ) Coefficient (t-statistics)</th>
<th>( Dum_1 ) Coefficient (t-statistics)</th>
<th>( Dum_2 ) Coefficient (t-statistics)</th>
<th>( Dum_3 ) Coefficient (t-statistics)</th>
<th>( Dum_4 ) Coefficient (t-statistics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMU</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algeria</td>
<td>-5.92 (-0.15)</td>
<td>-0.62 (-4.72)***</td>
<td>4.40 (1.25)</td>
<td>-4.05 (-4.94)***</td>
<td>-7.31 (-5.52)***</td>
<td>2.35 (5.03)***</td>
<td>-2.72 (-6.23)***</td>
<td>0.74 (1.77)</td>
</tr>
<tr>
<td>N : 147</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²:0.61</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 2.31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 18.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libya</td>
<td>-15.05 (-1.57)</td>
<td>-0.35 (-1.63)*</td>
<td>0.02 (0.13)</td>
<td>2.72 (2.31)**</td>
<td>2.69 (4.42)**</td>
<td>-3.59 (4.99)**</td>
<td>…</td>
<td>-0.36 (-0.94)</td>
</tr>
<tr>
<td>N : 147</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²:0.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 2.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 16.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morocco</td>
<td>76.76 (3.44)</td>
<td>0.57 (4.97)***</td>
<td>2.61 (1.30)</td>
<td>-13.08 (-9.06)***</td>
<td>…</td>
<td>…</td>
<td>5.00 (8.56)***</td>
<td>-0.18 (-0.56)</td>
</tr>
<tr>
<td>N : 126</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²:0.65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 2.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 24.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) Indicates significant at 10 per cent, (**) indicates significant at 5 per cent, and (***) indicates significant at 1 per cent.

Table 12C: Regression Results (Panel Least Squares Fixed Effects) for the Gravity Model of Intra-trade of Arab countries with Mashreq region.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Constant (t-statistics)</th>
<th>( GDP_i ) Coefficient (t-statistics)</th>
<th>( GDP_j ) Coefficient (t-statistics)</th>
<th>( D_{ij} ) Coefficient (t-statistics)</th>
<th>( Dum_1 ) Coefficient (t-statistics)</th>
<th>( Dum_2 ) Coefficient (t-statistics)</th>
<th>( Dum_3 ) Coefficient (t-statistics)</th>
<th>( Dum_4 ) Coefficient (t-statistics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mashreq</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td>8.71 (1.52)</td>
<td>0.39 (1.51)</td>
<td>-0.05 (-0.16)</td>
<td>-1.38 (-2.93)***</td>
<td>-2.00 (-1.57)</td>
<td>…</td>
<td>…</td>
<td>0.54 (0.56)</td>
</tr>
<tr>
<td>N : 126</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²:0.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 2.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 8.94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lebanon</td>
<td>-12.51 (-2.16)</td>
<td>-0.24 (-2.24)**</td>
<td>1.08 (2.12)**</td>
<td>0.86 (2.19)**</td>
<td>…</td>
<td>-1.44 (-4.60)**</td>
<td>0.76 (3.20)**</td>
<td>0.46 (1.49)</td>
</tr>
<tr>
<td>N : 84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²:0.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 1.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 25.48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jordan</td>
<td>-34.15 (-1.68)</td>
<td>-0.11 (-0.74)</td>
<td>4.42 (1.93)*</td>
<td>-0.18 (-0.51)</td>
<td>1.72 (6.55)**</td>
<td>-0.46 (-0.69)</td>
<td>…</td>
<td>0.13 (0.62)</td>
</tr>
<tr>
<td>N : 189</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AdjR²:0.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 1.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 11.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) Indicates significant at 10 per cent, (**) indicates significant at 5 per cent, and (***) indicates significant at 1 per cent.
Table 12D: Regression Results (Panel Least Squares Fixed Effects) for the Gravity Model of Intra-trade of Arab countries with region named Other in this study.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Constant (t-statistics)</th>
<th>GDP_i Coefficient (t-statistics)</th>
<th>GDP_j Coefficient (t-statistics)</th>
<th>Dij Coefficient (t-statistics)</th>
<th>Dum1 Coefficient (t-statistics)</th>
<th>Dum2 Coefficient (t-statistics)</th>
<th>Dum3 Coefficient (t-statistics)</th>
<th>Dum4 Coefficient (t-statistics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Egypt N : 105</td>
<td>15.48 (0.63)</td>
<td>0.71 (4.24)**</td>
<td>-0.83 (-0.39)</td>
<td>-1.34 (-1.88)*</td>
<td>0.45 (0.93)</td>
<td>…</td>
<td>-0.38 (-1.29)</td>
<td>-0.14 (-0.41)</td>
</tr>
<tr>
<td>AdjR²: 0.43 D.W: 2.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudan N : 189</td>
<td>-2.31 (-0.12)</td>
<td>-0.04 (-0.30)</td>
<td>5.35 (2.86)**</td>
<td>-5.91 (-8.04)**</td>
<td>0.99 (2.18)**</td>
<td>2.16 (10.76)**</td>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>AdjR²: 0.53 D.W: 2.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F: 17.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) Indicates significant at 10 per cent, (**) indicates significant at 5 per cent, and (***), indicates significant at 1 per cent.

The empirical results show that overall the performance of the model considered is quite good. The empirical results of estimating equation (4.7) indicate that intra-Arab exports increase with foreign GDP for almost all Arab countries with the exception of Saudi Arabia, Syria and Egypt. However, domestic GDP has a significantly negative affect on intra-Arab exports for some countries in each sub-group of the Arab region, for example: from the GCC sub-group, Bahrain and the United Arab Emirates (UAE); from the AMU sub-group, Algeria and Libya; Lebanon and Jordan from the Mashreq sub-group; and Sudan, which is classified under the other group in this study.

As expected, intra-Arab trade is negatively affected by distance. However, unexpected results are obtained for both Libya from the AMU sub-group and for Lebanon from the Mashreq sub-group, with their trade with Arab countries shown to be significantly positively affected by distance. The rational interpretation for these unexpected results is that Libya tends to trade less with the Arab countries that are sharing a border with Libya, such as Tunisia, Algeria, Egypt and Sudan (see Figure 3).
From the results, it can be seen that Libya has significantly less trade with sub-regional union countries, i.e. Tunisia, Algeria and Morocco. Only Algeria and Tunisia share a border with Libya. In addition, it can be seen that Libyan trade with Arab countries was affected by political instability in the Arab region, given that Libya does not trade with Sudan, which has suffered from internal political instabilities. The results reveal Libya trades only with Egypt, with which it shares a border. Furthermore, Libya trades more with other Arab countries that are not close, such as Saudi Arabia, the UAE, Oman, Syria and Jordan. This yielded the non-common pattern result that Libyan trade with Arab countries has a positive and significant relationship with distance.

Likewise, Lebanon tends to trade less with Arab countries that are geographically close, such as Jordan, Palestine and Syria. This might be because Jordan has signed a trade agreement with the US, and as a result its trade with Arab countries has decreased.
Furthermore, Lebanon tends to trade with the Arab oil-exporting countries, such as Algeria and Libya. This result does not confirm the notion that trade is negatively affected by distance, since Lebanon’s trade with Arab countries has a positive and significant relationship with distance.

The vicinity attributes, as proxied by the border variable, are shown to significantly affect intra-Arab trade, in that countries with a common border tend to trade more with each other, with the exception of Algeria and Syria, which tend to trade less with the Arab countries with a shared border. Algeria trades more with Arab countries that geographically are not close and are not oil-exporting countries. Dummy 1 and dummy 3 confirm these findings, with both coefficients of these variables statistically significant at 1 per cent. The results for Syria show that although there is a negative relationship between vicinity and trade, it is insignificant.

The important finding in this chapter is that sub-regional union significantly affects intra-Arab trade for almost all countries in the region with the exception of Jordan and the UAE. Of the countries that registered a significant relationship between sub-regional union and their intra-Arab trade, some registered a positive relationship, such as Bahrain, Algeria and Sudan, whilst others registered a negative relationship, such as Libya and Lebanon. Furthermore, the attribute of production similarity, as proxied by the oil-exporting variable, reinforced this effect for almost all countries, with oil exporting countries trading significantly less with each other. On the other hand, countries that do not export oil trade significantly with oil exporting countries. For instance, the results demonstrate that the GCC countries and Algeria trade less with countries that export oil. This can be attributed to the fact that these countries may need
to trade more with countries that export commodities other than oil. In contrast, the results show that non-oil exporting countries such as Morocco, Lebanon and Egypt registered a positive and significant relationship between their intra-Arab trade and oil-exporting countries. This reveals that non-oil exporting countries trade more with oil-exporting countries in the Arab region.

Although many important political events have occurred in the Arab region, such as Gulf War one and two, the invasion of Iraq by the USA, the civil war in Sudan and the economic embargo on Libya, the political instability variable shows an insignificant relationship with intra-Arab trade, with the exception of Libya. Libya demonstrates a significant negative relationship at the 10 per cent level between its intra-Arab trade and political instability. In the Libyan case, it can be said that intra-Arab Libyan trade has also been affected by the movement of Libya from Arab relations to African relations. This variation occurred during the imposition of political sanctions and the economic embargo on Libya, which were imposed by the UN on Libya in 1986 and were lifted on September 12, 2003. Due to Libyan frustration with Arab support, Libya developed more of its trade and other economic relations, such as investments, with African countries rather than Arab countries.

**4.8 Conclusion**

The analysis presented in this study indicates that actual intra-Arab trade is less than the model predicts. This reveals that Arab economic integration can potentially be enhanced if intra-trade increased by decreasing the gap among Arab GDPs, coordinating their trade policies and considering a plan between sub-groups. According to the model estimation of the production similarity effect, intra-Arab trade is not what
it should be, especially among GCC countries. Therefore, intra-Arab trade can be increased if Arab countries diversify their production. The estimation results indicate that Arab country members of sub-groups tend to trade more with each other, with the exception of Libya. The result for Libya may be due to the political and economic embargo experienced by this country.

The UN sanctions on Libya were started in 1986 and lifted in 2003; the American embargo was lifted in 2004. While, as mentioned before, Libya has turned more to integration with Africa than with other Arab countries, an exception is its trade with Egypt. The interesting finding in Libya's case is that the relationship between intra-AMU exports and the distance variable is significantly positive. This may be because Libya trades more with Arab countries that are not close, such as Lebanon, whilst the coefficient on the sub-regional union variable reveals that Libya trades significantly less with the AMU countries in this study (Algeria and Morocco). Thus although Algeria is located very close to Libya, due to similarity of production between Libya and Algeria (oil), Libya tends to trade more with other Arab countries than with Algeria. Arab economic integration can be extended through increased intra-trade if more coordination and trade liberalization occurs between Arab sub-groups and the other Arab countries that are not members of these sub-groups. Although the model estimated here includes some economic variables and some dummy variables that measure intra-Arab trade obstacles, it does not include a variable that measures the tariff procedures affecting intra-Arab trade, or a variable that measures the trade agreements between Arab countries and rest of the world. Such variables may affect intra-Arab trade and their economic integration and represent a potential direction for future research.
Chapter Five

Intra-Arab Capital Flows, Foreign Direct Investment and the Foundations for Economic Integration

“….. Looking first at intra-regional FDI from the “tariff-jumping” perspective, we would, on the one hand, expect reduced investment flows because trade liberalization makes exporting from the home country relatively more attractive than FDI as a way to serve the regional market. On the other hand, if regional integration results in trade creation, it is likely that changes in the regional production structure are required, which would motivate a shifting of investment from one participating country to another. Hence, intra-regional FDI in some member countries might well increase in response to the emergence of these new investment opportunities….. In many instances, foreign direct investment may actually be an essential catalyst for these dynamic benefits. Some of the improvements in economic efficiency associated with increased specialization, exploitation of scale economies, and greater geographical concentration of individual economic activities are likely to be driven by inter and intra-regional FDI.” (Blomstrom, and Kokko, 1997: 5-12)

5.1 Introduction

The dismantling of restrictions and the elimination of economic obstacles has become a common feature in economic integration across global economies. Although many countries in several regions of the world have increased their intra-capital flows, the investment among Arab countries has been a relatively small portion of their total foreign direct investment (FDI). The reasons for the weakness of intra-Arab FDI are divided into economic and political reasons. Based on the idea of the gravity models, the model applied in this chapter analyses the determinants of intra-Arab FDI during the 1985-2005 period.

31 A preliminary draft of this chapter was published in the conference proceedings of the “Global Conference on Business and Finance”, January 9-12, 2008, Hawaii, USA. In addition, a paper has been published in the international refereed scientific Journal “International Journal of Global Business (IJGB) Vol. 1, No. 1, 276-299, December 2008”.

135
Although intra-Arab FDI has been expanding, it is argued that the possibility of further expansion requires, in addition to other factors, a harmonization of the economic policies and procedures for investment among sub-regional unions of Arab countries. Furthermore, diminishing the gap between per capita GDPs of the Arab countries is important for enhancing the intra-Arab FDI; a real desire is also required to attain increased intra-Arab FDI and subsequently economic integration.

Capital flows have played a vital role in economic integration among countries in several regions in the world. Indeed with the proliferation of trade agreements throughout various regions, the world has been experiencing a dramatic surge in capital flows. The Arab region is one of these regions, with intra-capital flows amongst Arab countries enhancing economic development processes through augmenting domestic investment in the economies of Arab countries. The Arab countries have made attempts in terms of intra-Arab capital flow agreements, such as the agreement on free movement of investment and capital (1970). With the increasing oil revenues after 1973 (oil boom), the capital flows among Arab countries also increased.

This chapter provides empirical analysis that extends recent studies by contributors such as Bolbol and Fatheldin (2005) which have attempted to model aspects of intra-Arab trade and FDI flows using the gravity model approach. The empirical evidence emerging from the study presented in this paper, based on panel data covering the 1985-2005 period, lends support to the argument that intra-Arab FDI increases both with the GDP of the source country and the per-capita GDP of the receiving country. Political stability also plays a key role, while sub-regional union (through the GCC or
AMU) represents a significant obstacle to intra-region FDI flows. On the other hand, variables such as inflation and purchasing power parity of the receiving country do not appear to play a significant role in influencing intra-Arab FDI.

The remainder of this chapter is organised as follows: part 2 provides the characteristics of capital flows; part 3 provides an historical review of intra-Arab capital flows; part 4 presents the specification of the gravity model of intra-Arab FDI; and part 5 comprises the results of the regression analysis and the conclusions.

5.2 Characteristics of Capital Flows

Capital flows can arise as official flows, such as grants and concessional loans, whether provided by multilateral or bilateral sources. On the other hand, private flows comprise foreign direct investment, portfolio investment and bank debts. Capital flows bring benefits, such as improvement in efficiency in the allocation of investment and savings, introducing new technologies embodied in capital equipment, dissemination of good corporate governance, reduction of risk due to diversification, and may even constrain governments from pursuing inappropriate economic policies. On the other hand, capital flows have disadvantages including profit remittances that leave the host country. Erratic capital flows present problems for monetary policy and exchange rate policy and can be associated with financial crises. This is particularly so in the case of short-run speculative flows, which in the case of countries that have fixed or managed float exchange rate regimes, may require the implementation of sterilisation policies to offset the effects on the domestic money supply as well as to alleviate pressures on exchange rates themselves.
Capital flows also have an impact on bank credit (Hermes and Lensink, 2003). Sadik and Bolbol (2003), using Arab countries in their panel data set, obtained a similar result to that provided by Hermes and Lensink (2003), namely that to be able to benefit from FDI flows, the domestic credit provided by the banking sector in the host country needs to be sufficient to facilitate commercial operations and an indicative figure is that it should be more than 12 percent of GDP.

5.3 Intra-Arab Capital Flows

The Arab countries were the first group amongst developing countries to establish an economic integration agreement addressing capital flow issues when the members of Arab League signed the Agreement of Arab Economic Unity in 1957. Two of the principles of this agreement were the guarantee of freedom of movement of capital and the guarantee of freedom to perform economic activities within the Arab region.

In 1970, the members of the Arab Economic Unity (AEU) adopted an agreement on free movement of Arab capital within the region. Based on this agreement, the members granted preferential treatment for Arab capital. In addition, AEU members agreed that Arab members should not give treatment that is more favourable to FDI received from outside the Arab region. Investors were given rights of transfer payments related to their investments. Furthermore, they were given rights of residency in the countries in which they invested. As a result, investors became residents. These rights encouraged investors to invest more inside the Arab region.

In 1971, in order to boost intra-Arab investment, the Arab countries established the Intra-Arab Investment Guarantee Corporation. This organization is concerned with
investments within the region, provides the required facilities for intra-Arab investment, and also accords an insurance guarantee to capital flowing between Arab countries.

The processes of regional integration are likely to cause an increase in intra-regional FDI, from the country members of the regional integration as well as from countries that are not members of the region. Responses of economies to integration depend mostly on the changes in environment and location advantages brought about by the regional economic integration. The most positive impact of FDI arises when the regional economic integration is accompanied by domestic liberalization and macroeconomic stabilization in the member countries.

In the Arab region, more than 280 bilateral agreements were signed in the 1990s with the purpose of encouraging and guaranteeing investments; 61 of these agreements were among Arab countries, and half of these 61 agreements comprised Egypt, Libya, Morocco and Tunisia. However, several multilateral agreements were signed by Arab countries, for example with the International Centre for the Settlement of Investment Disputes and the Arab Investment Guarantee. Since the Arab region does not receive sufficient FDI from outside the region, and most of the investment of the Arab countries tends to go outside the Arab region, Arab countries need to create incentives and provide a suitable business environment in the Arab region in order to enhance intra-Arab FDI.

Intra-Arab investment flows are estimated to have significantly increased by $2.4 billion in 2001, which is more than half of the total FDI inflows to the Arab region in
2000 (Eid and Paua, 2002). Intra-Arab investment is cumulatively estimated to have been $17 billion during the period 1985-2001, which represents a small portion of total foreign Arab investment, thus implying a significant potential for expansion. It is also noteworthy that of the significant amounts of outward FDI flows and stock in the Arab region, at least four countries have more than $1 billion in outward FDI stock. These countries are Bahrain, Libya, Kuwait and Saudi Arabia, which reveals the importance of FDI for the growth and economies of Arab countries. It is notable that Kuwait registered a higher outward FDI stock ($1.98 billion) than an inward FDI stock ($527 million).

Krogstrup and Matar (2005) emphasized the idea of Eid and Paua (2002) that growth and development can be affected by foreign direct investment (FDI) through its contribution to gross fixed capital formation. FDI has been highly unstable in some Arab countries, such as members of the Gulf cooperation council (GCC), compared to FDI flows to the other Arab countries characterized by more diversification, such as Morocco, Egypt, Tunisia and Jordan. Krogstrup and Matar (2005) emphasized that Tunisia, Jordan and Morocco are the only Arab countries that have been able to attract significant world FDI inflows.

Although since 1990 foreign direct investment (FDI) inflow to developing countries has increased significantly, FDI has only been weakly attracted to the Arab countries. After the global economic slowdown of 2001, FDI became the most important source of foreign financing in the most of the developing countries. Krogstrup and Matar (2005) evaluated whether the Arab countries should expect to gain from increased FDI inflows. Their evaluation of the Arab countries was dependent on the selected measures
of absorptive capacity for these countries, and also on the particular Arab country evaluated.

Krogstrup and Matar (2005) concluded that both in absolute terms and relative to GDP, Arab countries receive a small portion of total FDI relative to other developing countries. Of the Arab countries, only Jordan and recently both Tunisia and Morocco were seen to have performed well in terms of attracting FDI flows. A further conclusion of this study was that FDI inflows to the Arab region did not improve during the 1990s. Consequently, Arab countries have significantly lagged behind in attracting FDI during the period of high worldwide FDI.

Changes in goods flows and intra-Arab FDI flows have been largely driven by several factors such as oil-based surplus capital and remittances (Bolbol and Fatheldin, 2005). In total, Intra-Arab investments have been increasing (see table 13 below), and no major fluctuations in intra-Arab investment have been observed. Accordingly, the relative stability and reliability of intra-Arab investment can be assessed. Over the 1990s decade, global exports increased by 6 per cent annually with a parallel increase in FDI at an approximately equivalent rate. Bolbol and Fatheldin (2005) stated that both exports and FDI were almost driven by the same factors, such as proximity, investment environment and economic openness. Some common features were also shared by exports and FDI, such as income growth and vertical production methods.

Bolbol and Fatheldin (2005) explained that there is no formal theory that can be used to derive the basic gravity model for FDI. However, they have also stated that the gravity equation may be useful for modelling intra-Arab FDI flows. It can be presumed that
there is a positive relationship between FDI and the national income of the home
country such that greater availability of capital enhances the growth of national income.
Likewise, we would expect FDI to also have a positive relationship with the income of
the host country because it augments domestic investment.

The relationship between FDI and distance can be positive if FDI substitutes for exports
due to higher transport costs, and the relationship can be negative if a longer distance is
associated with unfamiliarity with local cultures and also gives rise to higher
operational costs. Bolbol and Fatheldin (2005) used panel data for the Arab countries
with fixed-year effects. From their estimation of a gravity equation, they concluded the
main results are:

(i) Income elasticity is positive for both countries (home and host).
(ii) The coefficient of the distance variable is negative; this reveals that
    vicinity and familiarity with the investment environment are important.
(iii) Positive and significant dummies only involve the GCC with the
    Maghreb and Mashreq region, which may result from the special
    relationships between these regions and the GCC investors.
(iv) Sudan-Arab FDI has a large positive coefficient that is more than six
ten times its predicted value.

An important point made by Bolbol and Fatheldin (2005) was that intra-Arab exports
did not increase as a response to a higher level of intra-Arab investment. The main
reason for this unresponsiveness was that most of the intra-Arab investments were
made in non-tradable sectors. The weakness of trade between the GCC-Maghreb and
Maghreb-Mashreq countries is the main reason for the deficiency in intra-Arab exports. Bolbol and Fatheldin (2005) concluded that intra-Arab FDI can be explained by the fundamentals of the gravity model.

Table 13 represents intra-Arab investment based on host countries during the period 1995-2005. Intra-Arab investment registered approximately US$38,01 million in 2005 compared with US$5,958 million in 2004, revealing that intra-Arab investment increased by US$32049 million. From Table 13 it can be seen that intra-Arab investment has increased since 2000. In every year from 2000 to 2005, intra-Arab investment increased, and for some of these years the increase was highly significant. It can also be seen from the table that Saudi Arabia has received the highest total Arab investments (US$31,837.2 million) during the 1995-2005 period, followed by Lebanon (US$6,524.6 million), Sudan (US$6,102.2 million), Egypt (US$4,045.4 million), Syria (US$3,641.4 million), Morocco (US$3,215.8 million), UAE (US$2,359.7 million), Tunisia (US$1,623.8 million), and Algeria (US$1,568 million). It is noteworthy that the first five countries (Saudi Arabia, Lebanon, Sudan, Egypt and Syria) represented about 80.5 per cent of total intra-Arab investment during 1995-2005.
Table 13: Intra-Arab Investments According to Host Countries 1995-2005 (US$ Millions)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan</td>
<td>35.7</td>
<td>13.5</td>
<td>10.6</td>
<td>12.7</td>
<td>24.2</td>
<td>26.2</td>
<td>27.6</td>
<td>21.0</td>
<td>17.6</td>
<td>27.0</td>
<td>302.2</td>
<td>518.3</td>
</tr>
<tr>
<td>UAE</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>380.0</td>
<td>176.0</td>
<td>196.0</td>
<td>215.0</td>
<td>217.5</td>
<td>650.2</td>
<td>525.0</td>
<td>..</td>
<td>2,359.7</td>
</tr>
<tr>
<td>Bahrain</td>
<td>13.0</td>
<td>..</td>
<td>..</td>
<td>16.0</td>
<td>14.0</td>
<td>..</td>
<td>217.4</td>
<td>159.6</td>
<td>191.7</td>
<td>274.2</td>
<td>..</td>
<td>885.9</td>
</tr>
<tr>
<td>Tunisia</td>
<td>54.7</td>
<td>70.2</td>
<td>135.0</td>
<td>290.0</td>
<td>506.0</td>
<td>49.1</td>
<td>69.1</td>
<td>75.0</td>
<td>67.4</td>
<td>107.3</td>
<td>200.0</td>
<td>1,623.8</td>
</tr>
<tr>
<td>Algeria</td>
<td>3.5</td>
<td>..</td>
<td>..</td>
<td>122.0</td>
<td>85.8</td>
<td>347.5</td>
<td>350.0</td>
<td>54.6</td>
<td>80.4</td>
<td>263.3</td>
<td>260.6</td>
<td>1,567.6</td>
</tr>
<tr>
<td>Saudia</td>
<td>12.2</td>
<td>20.6</td>
<td>27.0</td>
<td>198.0</td>
<td>82.0</td>
<td>76.8</td>
<td>651.4</td>
<td>716.9</td>
<td>297.3</td>
<td>958.0</td>
<td>28,797</td>
<td>31,837.2</td>
</tr>
<tr>
<td>Sudan</td>
<td>38.8</td>
<td>554.0</td>
<td>142.5</td>
<td>70.3</td>
<td>151.7</td>
<td>414.6</td>
<td>554.9</td>
<td>567.4</td>
<td>610.0</td>
<td>657.0</td>
<td>2,341</td>
<td>6,102.2</td>
</tr>
<tr>
<td>Syria</td>
<td>333.5</td>
<td>303.0</td>
<td>328.0</td>
<td>212.0</td>
<td>224.0</td>
<td>8.7</td>
<td>43.5</td>
<td>46.5</td>
<td>42.4</td>
<td>427.2</td>
<td>1,673</td>
<td>3,641.4</td>
</tr>
<tr>
<td>Oman</td>
<td>4.2</td>
<td>24.0</td>
<td>18.7</td>
<td>42.0</td>
<td>45.8</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>62.6</td>
<td>..</td>
<td>197.3</td>
</tr>
<tr>
<td>Qatar</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>54.4</td>
<td>58.0</td>
<td>61.8</td>
<td>65.5</td>
<td>68.5</td>
<td>10.0</td>
<td>..</td>
<td>..</td>
<td>318.2</td>
</tr>
<tr>
<td>Lebanon</td>
<td>157.8</td>
<td>250.0</td>
<td>312.0</td>
<td>400.0</td>
<td>500.0</td>
<td>350.0</td>
<td>225.0</td>
<td>650.0</td>
<td>850.0</td>
<td>1,050</td>
<td>1,780</td>
<td>6,524.6</td>
</tr>
<tr>
<td>Libya*</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>80.4</td>
<td>85.0</td>
<td>82.0</td>
<td>102.0</td>
<td>23.0</td>
<td>500</td>
<td>875.1</td>
</tr>
<tr>
<td>Egypt</td>
<td>455.0</td>
<td>711.0</td>
<td>532.0</td>
<td>390.0</td>
<td>277.0</td>
<td>113.0</td>
<td>96.5</td>
<td>100.4</td>
<td>125.5</td>
<td>418.0</td>
<td>827</td>
<td>4,045.4</td>
</tr>
<tr>
<td>Morocco</td>
<td>59.8</td>
<td>61.2</td>
<td>48.0</td>
<td>48.6</td>
<td>22.2</td>
<td>24.8</td>
<td>39.5</td>
<td>12.8</td>
<td>672.1</td>
<td>1,105</td>
<td>1,121</td>
<td>3,215.8</td>
</tr>
<tr>
<td>Yemen</td>
<td>11.9</td>
<td>86.0</td>
<td>11.0</td>
<td>22.2</td>
<td>16.7</td>
<td>68.5</td>
<td>6.5</td>
<td>139.4</td>
<td>126.4</td>
<td>58.8</td>
<td>204</td>
<td>751.3</td>
</tr>
<tr>
<td>Total</td>
<td>1,430</td>
<td>2,094</td>
<td>1,590</td>
<td>2,314</td>
<td>2,183</td>
<td>1,817</td>
<td>2,647</td>
<td>2,912</td>
<td>3,844</td>
<td>5,958</td>
<td>38,01</td>
<td>64,795</td>
</tr>
</tbody>
</table>

*Data are not available for period of 1995-1999 due to the Siege sanctions.
Source: The Inter-Arab Investment Guarantee Corporation, 2006.
It is a remarkable point that the service sector has continuously represented the greatest proportion of intra-Arab investments. In 2005, it accounted for about 84.5 per cent of these investments. This is attributable to large infrastructure investments. In addition, some intra-Arab investments have been made in communications, financial services, and the tourism sector. In contrast, the industry sector represented only 6.1 per cent of total investments in 2005, followed by the agricultural sector representing less than one per cent, and other sectors representing about 9.4 per cent.

5.4 The Features of FDI in the Arab Region

Several features distinguished the Arab region in terms of foreign direct investment flows (FDI) during the period extending from the 1980s to the early 2000s. The first feature concerns the relationship between FDI flows into the Arab region and world FDI flows. The Arab region has been unable to match the rate of increase in world FDI
flows. The concentration of FDI flows is another feature, with most Arab FDI going only to a few Arab countries and being concentrated in specific sectors. One caveat is that intra-Arab investment is likely to be understated in some international FDI statistics. In fact, intra-Arab investment may include a significant proportion of unrecorded FDI flows, at least for some Arab countries or sub-groups.

5.4.1 Arab and World FDI flows

Although FDI flows into the Arab region have increased, these flows have not kept pace with world FDI flows. World FDI flows increased from US$180.0 billion in the 1985-1995 decade to US$1.27 trillion in 2000 (UNCTAD, 2001). This growth in global FDI flows was attributed mainly to increased flows amongst advanced countries rather than the developing ones. Although, FDI flows into the Arab region increased over the same period, they did not increase in the same percentage terms as world FDI flows (see Table 14).

The percentage increase in FDI flows to developing countries over the period 1985-1995 was about 373.3 percent, whereas the Arab region FDI inflows registered a growth rate in FDI flows of 109.1 percent over the same period (Eid and Paua, 2002). Thus, the percentage of world FDI flows going to the Arab countries declined from 1.2 percent in the 1985-1995 decade, to less than 1 percent in years 1996, 1999, 2000, 2002, which represent 0.9 percent, 0.2 percent, 0.4 percent and 0.86 percent respectively (see Table 14). Since Arab countries receive a very small proportion of FDI from rest of the world, it might be argued that they should try to increase and boost their intra-FDI. However, not attracting more international capital flows may at times be a blessing. This is particularly the case if these flows are erratic, associated with economic instability, and
primarily driven by speculation and a herd-mentality approach to investing. We need to
distinguish between real capital flows (investment, technology, management expertise)
and financial flows primarily motivated by expected changes in interest rates and
exchange rates and often associated with global hedge funds. With that caution in mind,
the percentage of the total FDI flows of Arab countries compared to the developing
countries in general ranged from only 1.41 percent in 1999, to a maximum of 4.90

Table 14: FDI Flows, 1985-2003 (US$ million)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arab region</td>
<td>2.185</td>
<td>3.309</td>
<td>6.825</td>
<td>7.481</td>
<td>2.221</td>
<td>4.570</td>
<td>10.76</td>
<td>5.87</td>
<td>8.33</td>
</tr>
<tr>
<td>All developing countries</td>
<td>50.745</td>
<td>152.495</td>
<td>187.352</td>
<td>188.371</td>
<td>222.010</td>
<td>240.167</td>
<td>219.72</td>
<td>157.61</td>
<td>172.03</td>
</tr>
<tr>
<td>World</td>
<td>180.300</td>
<td>384.910</td>
<td>477.918</td>
<td>692.554</td>
<td>1075.049</td>
<td>1270.764</td>
<td>817.57</td>
<td>678.75</td>
<td>559.58</td>
</tr>
<tr>
<td>Arab as % of flows to developing countries</td>
<td>4.3</td>
<td>2.2</td>
<td>3.6</td>
<td>4.0</td>
<td>1.41</td>
<td>1.9</td>
<td>4.90</td>
<td>3.72</td>
<td>4.84</td>
</tr>
<tr>
<td>Arab as % to total world FDI flows</td>
<td>1.2</td>
<td>0.9</td>
<td>1.4</td>
<td>1.1</td>
<td>0.2</td>
<td>0.4</td>
<td>1.32</td>
<td>0.86</td>
<td>1.49</td>
</tr>
</tbody>
</table>

Source: UNCTAD, various issues.

5.4.2 Regional Disparities

The Arab region has received relatively less FDI flows compared with other regions.
During the 1995-1999 period the percentage of FDI flows into Arab countries
registered one to four percent of the total FDI to the developing countries. In 2000 FDI
flows to the Arab region registered 1.9 percent of FDI flows to developing countries,
which represents a slightly higher percentage than that going to European developing
countries in the same year (about 0.8 percent). On the other hand, all other regions such
as Latin America and the Caribbean registered significantly higher shares compared to
the Arab region; in 2000 FDI flows to the America and Caribbean region registered
about 35.9 percent of total FDI to developing regions of the world. In addition, FDI to
the Asia-Pacific region registered about 58.9 percent of total inflows to developing
countries in 2000, which equals about thirty-one times the corresponding parentage for
Arab countries. It is therefore clear that Arab FDI inflows have accounted for a
relatively low percentage of FDI to developing countries.

5.4.3 Sector Concentration

FDI flows to Arab countries are concentrated on a few Arab countries and in particular
sectors. Thus over the late 1990s-early 2000s period, more than 80 percent of Arab FDI
stocks were concentrated in Saudi Arabia, Egypt, Bahrain, Tunisia and Morocco. About
70 percent of total FDI stock was in the first three of these countries. It is remarkable
that both Saudi Arabia and Egypt have more than 50 percent of the total FDI stock in
the Arab region.

5.4.4 Intra-Arab Investment

Intra-Arab investment represents a significant proportion of FDI flows in the Arab
region. Comparing 2001 with 2000, intra-Arab investment significantly increased by
about US$2.4 billion in 2001. The aggregate stock of intra-Arab investment in the
1985-2001 period registered about US$17 billion (Eid and Paua, 2002). This is a small
amount compared to total Arab investment outside the Arab region. It reveals that there
is a potential for expansion of intra-Arab investments. According to UNCTAD, in 2000
outward Arab FDI came mainly from Kuwait, Saudi Arabia and Bahrain from the GCC sub-region, and from Libya from the Arab Maghreb Union (AMU). For instance Kuwait in 2000 had the highest outward FDI stock of US$1.98 billion, and an inward FDI stock of US$527 million.

Table 15 presents annual intra-FDI amongst some Arab countries during the 1985-2005 period. It can be seen that intra-Arab FDI significantly increased during the 1990s and 2000s for almost all Arab countries, with the exception of the early 1990s period, which showed a significant decrease for almost all Arab countries. The decline in intra-Arab FDI during the early 1990s is associated with the political and economic instability in the Arab region, especially the GCC region (i.e. due to the Gulf War), at that time.
Table 15: Intra-Arab FDI Based on the Host Country 1985-2005 (US$ Million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Algeria (%GDP)</th>
<th>Bahrain (%GDP)</th>
<th>Egypt (%GDP)</th>
<th>Jordan (%GDP)</th>
<th>Lebanon (%GDP)</th>
<th>Morocco (%GDP)</th>
<th>Oman (%GDP)</th>
<th>Saudi (%GDP)</th>
<th>Sudan (%GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>0.167</td>
<td>23.049</td>
<td>6.902</td>
<td>8.136</td>
<td>0.108</td>
<td>7.481</td>
<td>2.099</td>
<td>2.227</td>
<td>169.384</td>
<td>2.948</td>
</tr>
<tr>
<td>1986</td>
<td>10.207</td>
<td>106.95</td>
<td>96.205</td>
<td>5.234</td>
<td>0.476</td>
<td>36.822</td>
<td>0.236</td>
<td>2.223</td>
<td>16.533</td>
<td>2.130</td>
</tr>
<tr>
<td>1987</td>
<td>14.283</td>
<td>36.672</td>
<td>31.680</td>
<td>41.725</td>
<td>0.963</td>
<td>38.047</td>
<td>1.941</td>
<td>0.428</td>
<td>41.827</td>
<td>3.484</td>
</tr>
<tr>
<td>1989</td>
<td>17.60</td>
<td>14.159</td>
<td>77.787</td>
<td>8.380</td>
<td>16.922</td>
<td>8.405</td>
<td>0.856</td>
<td>92.649</td>
<td>0.709</td>
<td>9.440</td>
</tr>
<tr>
<td>1990</td>
<td>18.00</td>
<td>74.092</td>
<td>92.047</td>
<td>6.805</td>
<td>14.916</td>
<td>52.878</td>
<td>0.342</td>
<td>80.815</td>
<td>6.764</td>
<td>5.607</td>
</tr>
<tr>
<td>1994</td>
<td>6.019</td>
<td>8.902</td>
<td>277.18</td>
<td>29.193</td>
<td>188.888</td>
<td>42.029</td>
<td>7.472</td>
<td>8.512</td>
<td>34.777</td>
<td>4.047</td>
</tr>
<tr>
<td>1995</td>
<td>3.50</td>
<td>13.00</td>
<td>455.00</td>
<td>35.70</td>
<td>250.00</td>
<td>59.80</td>
<td>4.20</td>
<td>12.20</td>
<td>38.80</td>
<td>4.26</td>
</tr>
<tr>
<td>1996</td>
<td>46.16</td>
<td>14.08</td>
<td>711.00</td>
<td>2.81</td>
<td>250.00</td>
<td>61.20</td>
<td>24.00</td>
<td>20.60</td>
<td>554.00</td>
<td>1.930</td>
</tr>
<tr>
<td>1997</td>
<td>74.60</td>
<td>14.80</td>
<td>532.00</td>
<td>10.60</td>
<td>312.00</td>
<td>48.00</td>
<td>18.70</td>
<td>27.00</td>
<td>142.50</td>
<td>1.389</td>
</tr>
<tr>
<td>1998</td>
<td>122.00</td>
<td>16.00</td>
<td>390.00</td>
<td>11.50</td>
<td>400.00</td>
<td>39.20</td>
<td>42.00</td>
<td>198.00</td>
<td>70.30</td>
<td>6.438</td>
</tr>
<tr>
<td>1999</td>
<td>85.80</td>
<td>14.00</td>
<td>277.00</td>
<td>24.20</td>
<td>500.00</td>
<td>22.20</td>
<td>45.80</td>
<td>82.00</td>
<td>151.70</td>
<td>4.563</td>
</tr>
<tr>
<td>2000</td>
<td>98.40</td>
<td>136.04</td>
<td>112.00</td>
<td>20.50</td>
<td>350.00</td>
<td>21.70</td>
<td>47.977</td>
<td>76.80</td>
<td>330.50</td>
<td>1.307</td>
</tr>
<tr>
<td>2001</td>
<td>35.00</td>
<td>217.40</td>
<td>88.20</td>
<td>27.60</td>
<td>225.00</td>
<td>8.60</td>
<td>49.428</td>
<td>721.20</td>
<td>554.90</td>
<td>3.806</td>
</tr>
<tr>
<td>2002</td>
<td>54.60</td>
<td>159.60</td>
<td>100.40</td>
<td>21.00</td>
<td>650.00</td>
<td>12.80</td>
<td>51.848</td>
<td>716.90</td>
<td>567.40</td>
<td>4.064</td>
</tr>
<tr>
<td>2003</td>
<td>80.40</td>
<td>191.70</td>
<td>125.50</td>
<td>1.760</td>
<td>672.10</td>
<td>55.88</td>
<td>297.30</td>
<td>610.00</td>
<td>657.00</td>
<td>4.138</td>
</tr>
<tr>
<td>2004</td>
<td>260.50</td>
<td>274.20</td>
<td>1.109</td>
<td>41.00</td>
<td>374.40</td>
<td>62.60</td>
<td>1.297</td>
<td>657.00</td>
<td>4.236</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>260.60</td>
<td>356.70</td>
<td>827.00</td>
<td>302.20</td>
<td>1.779</td>
<td>67.32</td>
<td>28.797</td>
<td>2.341</td>
<td>1.398</td>
<td></td>
</tr>
</tbody>
</table>

* The percentage has been calculated by the author.

5.5 Specification of the Model and the Empirical Results

The gravity model has previously been applied to investigate bilateral trade flows. Limam and Abdalla (1989) evaluated the potential success of various Arab Free Trade Area (AFTA) agreements. They used the gravity model to explore intra-Arab exports.
and imports with industrial and developing countries. Al-Atrash and Yousef (2000) estimated a gravity model to address the issue of whether intra-Arab trade was too little. Bolbol and Fatheldin (2005) used an extended gravity model for analysing intra-Arab exports. Their model was estimated with two types of data: data on intra-Arab trade and data on Arab trade with their major world partners. They also applied their gravity model to estimate intra-Arab FDI. Their panel data fixed effects estimation over the 1997-2003 period for the Arab countries was based on the following model:

\[ FDI_{ijt} = \alpha_0 + \alpha_1 Y_{it} + \alpha_2 Y_{jt} + \alpha_3 D_{ij} \]  

(5.a)

Where:

- \( FDI_{ijt} \) is FDI flows from country \( i \) to country \( j \).
- \( \alpha_0 \) is a constant.
- \( Y_i \) is real GDP of country \( i \).
- \( Y_j \) is real GDP of country \( j \).
- \( D_{ij} \) is the distance between the capital cities of country \( i \) and country \( j \).
- \( (t \text{ represents the period}) \).

The model applied in this chapter is also based on the gravity model. It has been developed to investigate intra-Arab FDI over the 1985-2005 period. Based on data availability, only 12 Arab countries have been included in this investigation. These countries are Algeria, Bahrain, Egypt, Jordan, Lebanon, Morocco, Oman, Saudi Arabia, Sudan, Syria, Tunisia and the United Arab Emirates.
The model to estimate takes the following form:

\[
FDI_{ijt} = \alpha_0 + \alpha_1 gdp_{it} + \alpha_2 pc_{jt} + \alpha_3 \inf_{jt} + \alpha_4 ppp_{jt} + \alpha_5 dum_{1jt} + \\
\alpha_6 dum_{2jt} + \epsilon_{ijt}
\]  

(5.b)

Where:

- \( FDI_{ijt} \) is the FDI flows from Arab country \( i \) to Arab country \( j \).
- \( \alpha_0 \) is a constant.
- \( gdp_{it} \) represents GDP of country \( i \) in period \( t \).
- \( pc_{jt} \) represents per capita GDP of country \( j \) in period \( t \).
- \( \inf_{jt} \) is the inflation rate of country \( j \) in period \( t \).
- \( ppp_{jt} \) is the purchasing power parity of country \( j \) in period \( t \).
- \( dum_1 \) represents political stability. It takes a value of one if the country \( j \) is politically stable in period \( t \), and takes the value of zero otherwise.
- \( dum_2 \) represents sub-regional union in the Arab region. It takes a value of one if the receiving FDI country \( j \) is a member of the GCC or AMU in period \( t \), and takes a zero value otherwise.

As expected, the empirical results (see table below) show that intra-Arab FDI significantly increases with both the GDP of the source country and the GDP per capita of the receiving country. This reveals that when the GDPs of FDI source countries increase, they are able to invest more in other countries. Consequently, intra-Arab FDI increases. Likewise, as GDP per capita of the receiving country increases, its ability to
absorb more investment increases. One the other hand, it can be seen that there is a significant negative relationship between both political stability (dummy 1) and sub-regional union (dummy 2) of the receiving country and intra-Arab FDI. Thus if the receiving FDI country is politically unstable, the other Arab countries (source countries) tend not to send their investment to this particular Arab country. Hence, intra-Arab FDI decreases with political instability.

Table 16: The Regression Results of Intra-Arab FDI, Panel Least Squares (\( FDI_{ij} \))

<table>
<thead>
<tr>
<th>Dependent Variable: FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method: Panel Least Squares</td>
</tr>
<tr>
<td>Sample: 1985 2005</td>
</tr>
<tr>
<td>Cross-sections included: 12</td>
</tr>
<tr>
<td>Total panel (unbalanced) observations: 245</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1.64E+08</td>
<td>44595305</td>
<td>3.676653</td>
<td>0.0003</td>
</tr>
<tr>
<td>GDPI</td>
<td>1497.917</td>
<td>472.5952</td>
<td>3.169557</td>
<td>0.0017</td>
</tr>
<tr>
<td>PCJ</td>
<td>6145.268</td>
<td>2521.195</td>
<td>2.437443</td>
<td>0.0156</td>
</tr>
<tr>
<td>INJ</td>
<td>-493024</td>
<td>614386.6</td>
<td>-0.80247</td>
<td>0.4231</td>
</tr>
<tr>
<td>PPPJ</td>
<td>-4.5E+07</td>
<td>35792978</td>
<td>-1.25649</td>
<td>0.2102</td>
</tr>
<tr>
<td>DUM1</td>
<td>-8.6E+07</td>
<td>28163759</td>
<td>-3.04839</td>
<td>0.0026</td>
</tr>
<tr>
<td>DUM2</td>
<td>-6.6E+07</td>
<td>26222793</td>
<td>-2.53102</td>
<td>0.0121</td>
</tr>
</tbody>
</table>

Effects Specification

<table>
<thead>
<tr>
<th>Cross-section fixed (dummy variables)</th>
</tr>
</thead>
</table>

R-squared 0.337166 Mean dependent var 1.13E+08
Adjusted R-squared 0.287527 S.D. dependent var 1.77E+08
S.E. of regression 1.50E+08 Akaike info criterion 40.55817
Sum squared resid 5.09E+18 Schwarz criterion 40.81541
Log likelihood -4950.38 F-statistic 6.792299
Durbin-Watson stat 2.019012 Prob(F-statistic) 0
Table 17: The Results of Panel Least Squares (\( FDI_{ij} \)) Regression of Intra-Arab FDI

<table>
<thead>
<tr>
<th>Variables</th>
<th>Significant Variables</th>
<th>Coefficient (t-statistics)</th>
<th>Variables</th>
<th>Insignificant Variables</th>
<th>Coefficient (t-statistics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( gdp_i )</td>
<td>1497.917 (3.169)***</td>
<td>( in_j )</td>
<td>-4930 (0.802)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( pc_j )</td>
<td>6145.268 (2.437)***</td>
<td>( ppp_j )</td>
<td>-4497 (-1.256)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( dum_1 )</td>
<td>-85854 (-3.048)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( dum_2 )</td>
<td>-6637 (-2.531)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R-Squared 0.337
Adjusted R-Squared 0.287
Log Likelihood -4950
Durbin-Watson stat 2.019
F-statistic 6.792

(*) Indicates a significant at 10 per cent, (**) Indicates a significant at 5 per cent, and (***) Indicates a significant at 1 per cent.

Intra-Arab FDI also declines with sub-regional union (GCC, AMU). Thus if the receiving country is a member of the GCC or AMU, its opportunity to receive more Arab FDI decreases due to the intra-preferential treatments between members of the relevant sub-regional union. In addition, the results show that neither inflation nor power purchasing parity of the receiving country affect intra-Arab FDI.

As noted previously, the Arab region faced an unstable political and economic period since the early 1990s, including Gulf Wars I and II, what has occurred in Iraq, the UN
sanctions on Libya, and the unstable circumstances in Sudan. These events obviously affected intra-Arab FDI in the period mentioned.

One noteworthy point is that the Gulf region is a very important region for most of the Arab countries as it represents a significant source of FDI. Likewise, Libya is a very important source country of FDI, especially for the AMU countries, Sudan and Egypt. Sudan represents a vital host country of intra-Arab FDI. The unstable circumstances in the Arab region have affected GDP and GDP per capita of Arab countries, with the result that their intra-movements of capital flows have been affected.

5.6 Conclusion

This chapter has so far examined intra-Arab FDI during the period 1985-2005. Since there are FDI flows between Arab countries, there is some interdependence between them. In other words, the Arab countries economically complement each other. Therefore, intra-Arab FDI can enhance Arab economic integration. Arab countries can further organize their investment policies and procedures to provide a more conducive environment for foreign investment, while being careful to avoid destabilizing capital flows (commonly referred to as "hot money"). In addition, they should improve their FDI flow systems, in particular among sub-unions such as the GCC, AMU and Mashreq countries. Since the Arab countries receive a relatively small proportion of FDI from outside the Arab region, the Arab countries might more actively encourage their intra-FDI to boost their economic development and their economic integration.
Chapter Six

The Role of Intra-Labour Flows in Arab Economic Integration

"Migration decisions are often made jointly by the migrant and by some group of non-migrants. Costs and returns are shared, with the rule governing the distribution of both spelled out in an implicit contractual arrangement between the two parties. For example, one important component of the direct returns to the non-migrating family from the migration of a family member is his or her remittances. Theory suggests the view, that empirical evidence seems to support, that patterns of remittances are better explained as an intertemporal contractual arrangement between the migrant and the family than as the result of purely altruistic consideration." (Stark, 1991: 25)

6.1 Introduction

The elimination of economic impediments and the dismantling of trade restrictions have become common features of economic integration across economies in the world. Many countries in several regions of the world have increased their intra-regional flows of productive factors; the Arab region has also experienced an increase in labour flows, in particular during the period of the oil price boom. Consequently, remittances between Arab countries were increased; especially remittances obtained from Arab Gulf countries (GCC region). Using panel data fixed effects estimation, this chapter investigates the relationship between remittances and economic integration in the Arab region, covering the period 1983-2003. Despite the existence of expanding intra-Arab labour flows, this chapter argues that a continued expansion requires - in addition to

32 A preliminary version of this chapter was presented at a UWS conference on “Security, Peace Economics, and Peace Science”, August 17-18, 2007, Sydney, Australia. In addition, a paper was accepted for presentation in the "Conference on Regional Trade Agreements, Migration, and Remittances Texas-USA 12-13 April 2008" and has been submitted to be considered for publication in the special issue of the Journal of Business Strategies.

other factors– a harmonization of economic policies and removal of obstacles to intra-regional labour flows. Moreover, reducing differences in per capita GDPs of the Arab countries is important for enhancing Arab economic integration. A real desire to increase intra-Arab labour flows is required for factor price equalization.

Economic integration is enhanced by various factors. One of these factors is labour flows between certain countries; the role of labour flows is important in terms of economic growth and development. In addition, labour flows are significant not only for the host country, but also for the source country, with remittances between source and host countries often representing an important form of economic support. The Arab region can be divided into two main types of countries: (i) those with large populations; and (ii) those with significant oil resources. One would expect there is potential for extension of economic integration between these types of countries. In this regard, the Arab countries initially can be classified into the following sub-groups:

(i) Countries characterized by abundant labour, including Egypt, Yemen, Sudan, Syria, Lebanon, Morocco, Tunisia and Jordan.

(ii) Countries characterized by high oil resources and labour scarcity, including Gulf Cooperation Council countries (GCC) and Libya; and

(iii) Countries characterized by significant oil resources and reasonably abundant labour that is, Algeria and Iraq.

The purpose of this chapter is to investigate the roles of intra-Arab labour flows in Arab economic integration. In addition, we investigate which Arab countries have the greatest possibilities to achieve integration, and which variables have more effect on
remittances. This chapter is organised as follows: Section 2 summarizes historical features of the intra-Arab labour market; Section 3 presents a literature review; Section 4 covers model specification and empirical results. Concluding comments are given in Section 5.

6.2 Intra-Arab Labour Flows

Intra-regional migration has played a dominant role in the Arab region. The consensus seems to be that intra-regional labour migration has had positive labour market outcomes for both receiving and sending countries, and fostered closer economic linkages between the two. The oil price boom of the 1970s unleashed historically unprecedented labour movements within the region. The catalyst was an ‘open door’ labour market policy adopted by the oil-rich Gulf countries. Expatriates migrated in droves without visible restrictions, while the Gulf countries actually competed with each other to attract expatriate labour during the oil boom of the 1970s. In the historical context, the Arab countries have been a region of diverse migratory flows with a trend towards labour flows between Arab countries. On the other hand, there has also been a trend towards labour flows to other regions.

Since WWII, migration from the Arab countries to countries outside of the Arab region – especially to Western Europe and South America- has represented part of the wider flow from developing countries with, for example, about 850,000 Algerians, 60,000 Tunisians and 60,000 Moroccans migrating to France. Furthermore, there is a number of Lebanese, Egyptian, Yemenis and Sudanese migrants in Europe, South America and Asia. Nonetheless, there are indications that movements of labour between Arab countries have significantly increased in some years, especially during the oil boom.
period (1970s). However, these intra-Arab labour flows declined in relative terms especially during the first Gulf War and even more markedly during the second Gulf War (1990s). As a result of these changes, remittances between Arab countries have been affected, with consequences for development and economic integration in the region.

The Gulf crisis and other events ensuing from the Gulf Wars, such as oil price fluctuations, decreased revenues, and greater difficulties in living in the Gulf region, led to the return of many Arab expatriates to their home countries. The most immediate outcome of the Gulf crisis was the displacement of a significant number of migrants from their countries of residence. More than 700,000 Egyptians returned from Iraq, Kuwait and Jordan, and more than 800,000 Yemenis were forced to return home from Saudi Arabia and Kuwait. About 200,000 Jordanians returned from the Gulf region, and a considerable number of Iraqis and Sudanese expatriates were also forced to leave their jobs in the Gulf countries to return to their home countries. These movements in turn created economic problems such as unemployment in their home countries, and economic stagnation in the Gulf countries. Subsequently, economic integration amongst Arab countries was affected. This reveals that economic integration amongst the Arab countries can be affected greatly by labour mobility between the Arab countries.

The open door labour market policy was underpinned by ambitious state-led programs of development that used burgeoning oil revenues to finance rapid expansion of free health care and education as well as massive investment in infrastructure projects to upgrade transport and communications. This inevitably created labour shortages across the entire skill spectrum and shaped immigration policies of the Gulf States.
Geographic proximity, cultural and linguistic similarities reinforced the economic incentives unleashed by the labour shortages that erupted in the Gulf countries. The labour market responses were impressive. As one author [Yousef, 2005, pp.6-7] notes:

In the mid-1980s, non-nationals represented close to 70 percent of the total work force and almost 26 percent of the population in the Gulf countries. Arab workers during this period outnumbered those from other regions by a ratio of 3:1. By some estimates, close to 10 percent of Egypt’s labour force and almost 15 percent of the Republic of Yemen’s were employed abroad in the region in the 1980s. From 1975 to 1985, the peak years of oil-led growth in the region, the Gulf countries experienced unprecedented labour force growth of 7.7 percent a year, with growth in Bahrain reaching 10.5 percent and growth in Saudi Arabia reaching 8.1 percent. During this period, the non-national labour force grew at an average annual rate of nearly 13 percent, reaching 15 percent in Bahrain and 17 percent in Saudi Arabia.

The oil price boom that drove intra-regional migration in the Arab region also triggered massive flows of remittance income to the labour-exporting countries (see Figure 1). Such flows clearly had a salutary impact on the living standards of poor families. At the same time, intra-regional migration eased pressures on local labour markets, especially in urban areas, and helped in the alleviation of unemployment.

While the oil price boom of the 1970s fed massive labour movements within the Arab region with salutary consequences, the collapse of oil prices in the early 1980s and the first Gulf War led to a reversal of such movements and had adverse effects on the labour market. The reduced revenues from the decline in oil prices fed into reduced demand for expatriate labour. The share of expatriates in the Gulf state work-force fell from an average of 67 per cent in 1995 to an average of 64 per cent in 2000, with Saudi Arabia registering the sharpest decline, from 64 per cent to 55 per cent over the same period.
Geopolitical developments also ruptured the closer integration among Arab economies fostered by intra-regional migration of the 1970s and early 1980s. The 1991 Gulf War turned out to be a turning point. One study documents the dramatic impact of this geopolitical event. It led to:

The repatriation of millions of expatriate workers from the Gulf countries …created huge pressures on the labour forces of the labour-exporting countries, thus causing sharp, temporary increases in unemployment in addition to the loss of remittance income. Among the repatriated workers were an estimated 150,000 Palestinians, 300,000 Jordanians, 500,000 Egyptians, and 800,000 Yemenis, who fled the conflict. (Yousef, 2005, p.11).

6.3 Model Specification and the Empirical Results

The model applied in this study allows investigation of the relationship between remittances as the dependent variable, and some economic independent variables, such as per capita GDP of the remittance receiving country, and its conversion factor to the official exchange rate (purchasing power parity PPP). Furthermore, as independent variables the model includes Saudi Arabia’s oil production and its oil exports and the real price of oil. Due to its domination of the oil market and history as a host to many Arab immigrants, Saudi Arabia has been selected as the reference country for data on oil production and the real oil price. Based on data availability, 12 Arab countries have been selected to be investigated in terms of remittances and their role in the Arab economic integration.

The model assumes that remittances are positively related to the economic growth of both the remittance sending and receiving countries. Accordingly, when remittances increase, this is associated with more oil production in Saudi Arabia (the remittance sending country) and more economic prosperity, and assuming there is no Dutch Disease effects in Saudi Arabia, more wages for the immigrants. Consequently, when
remittances increase, economic growth of the home-countries of the immigrants (Arab countries) is promoted. This reflects the strong relationship between the remittance sending country and the receiving country, which in turn reveals the degree of economic integration between these countries.

The model can be written as follows:

\[ R_{jt} = \alpha_0 + \alpha_1 SOP_t + \alpha_2 SOE_t + \alpha_3 RP_t + \alpha_4 PC_{jt} + \alpha_5 PPP_{jt} + \alpha_6 DUM_1 + \alpha_7 DUM_2 + \varepsilon_{jt} \]  

(6.1)

Where:

- \( R_{jt} \) is a remittance of country \( j \) in period \( t \).
- \( SOP_t \) represents Saudi Arabia’s oil production in period \( t \).
- \( SOE_t \) is Saudi Arabia’s oil exports in period \( t \).
- \( RP_t \) is the real price of oil in period \( t \).
- \( PC_{jt} \) represents per capita GDP of the Arab receiving remittance country \( j \) in period \( t \).
- \( PPP_{jt} \) is the conversion factor to the official exchange rate, which in fact represents the purchasing power parity of the Arab receiving remittance country \( j \) in period \( t \).
- \( DUM_1 \) represents political stability. It takes the value one if both Saudi Arabia and the receiving country are politically stable, and takes the value 0 otherwise.
- \( DUM_2 \) is sub-regional union dummy variable, which takes the value one if the country is a member in Gulf Cooperation Council (GCC) or Arab Maghreb Union (AMU), and takes the value 0 otherwise.
The random disturbance term is represented by $\epsilon_{jt}$.

Writing all the non-dummy variables in logarithmic form results in the following transformed model:

$$\text{Ln}R_{jt} = \alpha_0 + \alpha_1 \text{LnSOPl} + \alpha_2 \text{LnSOE}_t + \alpha_3 \text{LnRP}_i + \alpha_4 \text{LnPC}_j + \alpha_5 \text{LnPPP}_\mu + \alpha_6 \text{DUM}_1 + \alpha_7 \text{DUM}_2 + \epsilon_{jt}$$ (6.2)

Based on this equation, panel data set fixed effects estimates have been obtained. Table 18 below shows that remittances amongst Arab countries are significantly affected by two economic variables; these are per capita GDP and purchasing power parity. In addition, the intra-Arab remittances are significantly affected by political stability and sub-regional agreements.
Table 18: The Regression Results of Intra-Arab Remittances, Panel Least Squares ($\text{Ln} R_j$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-7.64534</td>
<td>18.76218</td>
<td>-0.40749</td>
<td>0.6842</td>
</tr>
<tr>
<td>LNSOP</td>
<td>7.385796</td>
<td>5.029951</td>
<td>1.468363</td>
<td>0.1441</td>
</tr>
<tr>
<td>LNSEO</td>
<td>-5.38131</td>
<td>3.497159</td>
<td>-1.53877</td>
<td>0.1259</td>
</tr>
<tr>
<td>LNRP</td>
<td>0.240551</td>
<td>0.802145</td>
<td>0.299885</td>
<td>0.7647</td>
</tr>
<tr>
<td>LPC</td>
<td>1.051763</td>
<td>0.246642</td>
<td>4.264337</td>
<td>0</td>
</tr>
<tr>
<td>LNPJP</td>
<td>-1.98962</td>
<td>0.268657</td>
<td>-7.4058</td>
<td>0</td>
</tr>
<tr>
<td>DUM1</td>
<td>-0.6459</td>
<td>0.276899</td>
<td>-2.3326</td>
<td>0.021</td>
</tr>
<tr>
<td>DUM2</td>
<td>-2.27218</td>
<td>0.312912</td>
<td>-7.26139</td>
<td>0</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

| R-squared | 0.633375 | Mean dependent var | 19.48651 |
| Adjusted R-squared | 0.549506 | S.D. dependent var | 2.06415 |
| S.E. of regression | 1.385433 | Akaike info criterion | 3.659546 |
| Sum squared resid | 293.672 | Schwarz criterion | 4.277021 |
| Log likelihood | -309.827 | F-statistic | 7.551997 |
| Durbin-Watson stat | 2.546019 | Prob(F-statistic) | 0 |

The empirical results show that remittances from Saudi Arabia to the other Arab countries are positively related to GDP per capita of the home countries $j$. On the other hand, these remittances are negatively related to the purchasing power parity of the home countries $j$. The relationship between remittances and political stability and sub-regional unions is also found to be negative.
The positive relationship between GDP per capita of the home countries $j$ and remittances from Saudi Arabia reveals that more labour flows from home countries (Arab countries) to the GCC region, in particular to Saudi Arabia (a rich oil country) lead to increases in the remittances of these expatriates. Consequently, more prosperity and economic development in the home countries occur. Thereby, their GDPs per capita increase. This reveals that the remittances between the Arab countries underline their interdependence and enhance their economic integration.

The negative relationship between remittances and (PPP) is basically attributable to the purchasing power parity of the home countries $j$, since when the purchasing power parity of the home country decreases, the expatriates need to send more remittances to their relatives in their home-countries to mitigate the effects of the decrease of purchasing power parity.

The negative relationship between remittances and political stability is readily explained by the fact that when home countries are politically unstable more people emigrate to other countries, fleeing the economy and politically difficult circumstances. Consequently, the expatriates increase their remittances to their families in their home countries. On the other hand, in countries with stable political states people do not need to migrate to other countries.

As expected, remittances are negatively related to the sub-regional union (GCC, AMU) dummy variable because all members of the GCC are oil countries. Therefore, they do not need to send their workers to Saudi Arabia to obtain remittances; this is the same for the members of the AMU, which includes the oil exporting countries of Algeria and
Libya. It might also be the case that the other members of the AMU prefer to expatriate to the AMU region due to preferential treatment amongst AMU members and due to the close vicinity. Accordingly, most of the Arab expatriates in Saudi Arabia are from non-oil Arab countries and from non-sub-regional Arab unions.

### 6.4 Discussion

From the empirical results of estimating the model it can be seen that remittances amongst Arab countries depend significantly on economic variables. Since such remittances stream among the Arab countries, it can be said that the labour market significantly affects economic integration in the Arab region. Accordingly, Arab economic integration can be boosted and extended through labour flows amongst Arab countries. Remittances sent to Arab home countries by expatriates in the GCC region are very important for the home countries; the inter-relationship between remittances and per capita GDP of the home countries is significant. However, Arab countries should coordinate their labour flows policies to avoid large unplanned labour migration in the region.

Table 19 below shows the regression results of intra-Arab remittances. It can be seen that both per capita GDP and purchasing power parity significantly affect intra-Arab remittances at the 1 percent level of significant. While political stability variable affects intra-Arab remittances at the 5 percent level of significant, sub-regional agreements affect intra-Arab remittances at the 1 percent level of significant. On the other hand, Oil production, oil exports and oil prices of Saudi Arabia do not affect the intra-Arab remittances. The table also shows that the R-squared is 0.63337; Adjusted R-squared is 0.5495; Durbin-Watson is 2.5460 and F-statistic is 7.5519. These indicators reveal that
GDP per capita and purchasing power parity provide significant explanation of intra-Arab remittances, which in turn reflects intra-Arab labour flows. Political stability and sub-regional agreement are also relevant factors.

Table 19: The Intra-Arab Remittances Regression Results, Panel Least Squares ($Ln R_j$)

<table>
<thead>
<tr>
<th>Depended Variable</th>
<th>SOP Coefficient (t-statistics)</th>
<th>SOE Coefficient (t-statistics)</th>
<th>RP Coefficient (t-statistics)</th>
<th>PC Coefficient (t-statistics)</th>
<th>PPP Coefficient (t-statistics)</th>
<th>Dum1 Coefficient (t-statistics)</th>
<th>Dum2 Coefficient (t-statistics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-sq: 0.6334</td>
<td>7.385796 (1.4684)</td>
<td>-5.38131 (-1.5388)</td>
<td>0.240551 (0.2999)</td>
<td>1.051763 (4.2643)**</td>
<td>-1.98962 (-7.4058)**</td>
<td>-0.6459 (-2.3326)**</td>
<td>-2.27218 (-7.2614)**</td>
</tr>
<tr>
<td>Adj R-sq: 0.549</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.W: 2.5460</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F.Statistic: 7.5519</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) Indicates a significant at 10 per cent, (**) Indicates a significant at 5 per cent, and (***) Indicates a significant at 1 per cent.

6.5 Migration from the Backward to the Advanced Regions: Endogenously Driven Dynamics

6.5.1 Introduction: Economics of Migration

Typically, in the literature on labour movement, backward regions are agricultural or rural sectors, and the advanced sectors are industrial or urban sectors. The dynamics of migration takes place from the backward to the advanced sectors. In the current context, the Arab countries can be dichotomised in an analogous fashion: the advanced sector is the oil-rich countries, while the backward sector is the non-oil producing countries. By applying and extending the existing models of rural to urban migration, our research can throw important light on the labour mobility in the Arab region. In order to set the stage, we examine the existing models of rural to urban migration. Once can easily paraphrase
the Arabic migration as a flow from the non-oil producing nations to the oil producing nations or regions.

In the context of developing nations, we have seen a massive movement of people from the rural to the urban sectors. This mobility is an important source of research and an important conundrum. The massive and unprecedented rate of people migration from rural to urban areas in developing countries was unanticipated and created all sorts of problems for social infrastructure and urban planning. This massive and unprecedented movement of people is called by Todaro (1994, p.14) “the most perplexing dilemma of the development process”. In addition, it is manifestly obvious that the rates of rural to urban migration greatly exceed the capacity to employ them productively in urban industries of developing countries; yet such migration continues unabated. Recently, it is understood that both a symptom and a contributing factor to underdevelopment are represented by migration in excess of urban job opportunities.

The urban landscape of advanced industrial countries was filled by large cities. Recently, developing countries have become the home of many mega-cities of our globe (see Krugman and Elizondo, 1996). Such dramatic changes to the urban landscape in developing countries have been characterized by Bairoch (1988) as “Romes without empires.” Poverty, deprivation and insolvency are the widespread condition in many of these cities; and the urban problem has been worsened by the manifestly inadequate supply of local goods. There is not much evidence that any noticeable improvements have taken place in the life quality of almost two billion people living in the urban sprawl (see Gangopadhyay and Nath, 2001a; Gangopadhyay and Nath, 2001b; Gangopadhyay and Nath, 1989). After a number of decades of high rates of economic growth and significant
social progress, urban crises continue unabated in developing countries. In this study, we model rural-urban migration as a dynamic process. Although the migration dynamics examined are totally deterministic, can show that these dynamics can display complex cyclical variation and even develop in a disordered fashion under a set of parametric restrictions.

This case of migration can be applied to Arab countries. It has been believed that migration from one country to another can enhance the economic integration between them. Migration from a poor country to rich country can lead to improvement in welfare in both of them; the rich country will utilize migrated labour and the poor country will utilize their remittances. Therefore, such migration can boost the interdependence between such countries. In terms of wealth, the Arab countries can be divided into two main subgroups: (i) rich countries (group one), which contains the oil countries; (ii) poor countries (group two), which are the non-oil countries.

The desire to migrate is not new. It is attributable to an age-old urge in human beings. Some forms of migration have been continuing since the Greko-Roman antiquity. Smith (1776) in his “Wealth of Nations” addressed the issue of migration as follows:

“All the different states of ancient Greece possessed each of them, but a very small territory, and when the people in any of them multiplied beyond what the territory could easily maintain, a part of them were sent in quest of a new habitation in some remote and distant part of the world.” (Book IV, CH V11, PT I, p.58).

Thus Smith (1776) unequivocally stressed the important factor that motivates people to migrate. Once life in the home country becomes too hard, migration to another country may decrease the economic hardship and the adversity of life. In addition, Smith
explained the attractive factor behind migration was an additional fortune expected to be obtained as a result of migration. Smith expressed this theme as:

“The people became clamorous to get land, and the rich and the great we may believe were perfectly determined not to give them any part of theirs. To satisfy them in some measure, therefore, they frequently proposed to send out a new colony.” (Book IV, CH VII PT I, p.59).

Hence, the desire to progress the material well-being of humans as an incentive force behind migration was clearly highlighted by Smith. It can be said that the modern theory of rural-urban migration initially builds on this Smithian initiative as the behavioural assumption posits with the decision whether or not to travel to another country based on maximisation of expected income (Todaro, 1971). Therefore, it can be said that the postulate of rational agency is the foundation stone of migration. We can summarise the constituents in such decision-making by referring to two important ingredients:

(i) The wage difference between urban and rural sectors or rich and poor country, which represents an attractor factor.

(ii) The potential of finding a proper job in the urban sector (rich country). In fact, this factor drives a decision maker to migrate to the urban sector (rich country). This likelihood is quite often captured in a probability estimate.

The rural-urban wage differential has been emphasized as a determining factor behind rural-urban migration (see Beals, 1967; Harris and Todaro, 1968). The received doctrine is summarised by Todaro (1971) as follows:
“If the migrant anticipates a relatively low probability of finding regular wage employment in the initial period but expects this probability to increase over time as he is able to broaden his urban contacts, then it would still be rational for him to migrate even though expected urban income during the initial period or periods might be lower than expected rural income”. (p. 393)

The decision to migrate to an urban area depends on a long run optimisation scheme, such as optimizing the value of income. Since present value streams of income from urban employment are likely to be more than the present value streams of income from a rural area, the decision to migrate is most likely to be taken. Following arrival in the urban sector (rich country), migrants usually search for a job till they are successfully offered a proper occupation. The essential message of these models is outlined in what follows.

In order to join the ranks of urban unemployed there is a fixed fee (the cost of migration) that should be paid. A representative migrant can pay this fee. Then, he/she investigates the urban job market looking for a suitable job. Successive developments of the literature on migration theory paid attention mainly to the search techniques of a migrant once he/she enters the urban market (see Stigler, 1962; Alchian, 1970; Phelps, 1970).

This work is organised around an ignored, yet a very important aspect of migration theories, which can be named the cost of migration. Such a cost can significantly affect the decision of the migrant about whether or not to migrate from his/her home country to another. This logic can be applied to the Arab region. Although the existing migration theories emphasize the rational basis of the migration decision, they rarely address the associated cost. Such cost is often treated as an “entry fee” with the implicit understanding that a migrant can easily pass this step. Consequently, existing migration theories concentrate mainly on how a rational agent would best organize the available
resources to attain his/her aims, and then address relevant policy implications. In contrast, we go further than this postulate of rational agency to highlight the capabilities of rural agents, since in this study we focus on the cost side of migration (see Sen, 1985).

To make it plain, the migrant pays some costs for the “urban life”. This price is denoted the migration cost. We are concerned with the net financial benefits (pecuniary and non-pecuniary) of urban life. The demand for urban life is embodied in the desire to migrate. Accordingly, the thorny question that can be posed is whether the demand constitutes an effective demand. In the case that demand is not also effective demand, the migration decision will fail to materialise. The net gains from migration may not be negative and may not be small, yet a rational agent would not migrate since he/she cannot meet the expense of the initial price payment. In addition, there could emerge some prices, such as the rationing price, where the level of migration cost is higher than the level of cash holdings of a rural household. The non-existence of capital markets in a rural area makes this constraint more binding.

It can be seen that the price of urban life may be quite excessive for certain categories of migrants. Particularly those migrants who establish their vocation paths in a specific pattern will need a steady cash flow over a long time. For instance, a carpenter, artisan or a mechanic from the rural sector may require his/her qualification recognised in the urban sector, which may involve a long time and a good deal of income. Such costs may assume paramount importance in certain countries, such as less developed countries (LDCs). When we carefully consider the costs of migration and successful migration, we can recognise that the ability to perform some work is directly linked to food intake; Leibenstein (1957) expounded this idea. On this basis, Dasgupta and Ray (1986, 1987)
demonstrated the critical relation between involuntary unemployment in LDCs and the occurrence of malnutrition, which is in turn constrained by the distribution of assets. As a result, if a migrant does not have a permanent nutrition source during the waiting period, other workers who have better income /economic status out compete them.

A successful migration will require an adequate cash holding/fund, which will allow the migrant to be above the minimal level of nutrition. Therefore, following Dasgupta and Ray (1986, p. 1030), it may be argued that those who migrate with insufficient cash funds are relatively disadvantaged in the urban labour market compared to those who possess such cash. As a result, they may be affected by factors such as the vicious cycle of malnutrition, unemployment and malnutrition. Hence, it can be said that there is a rational base to believe that employment obstacles for migrants may be caused by cash disadvantage (liquidity constraints). Furthermore, rational agents will carefully consider such employment obstacles before making a decision. Accordingly, the migration cost will turn out to be an important and limiting factor that affects a decision to migrate. We assume that a migrant must have an endowments vector to have a successful search period in the urban sector in the host country (oil country) and the financial cost of this vector is called as the migration cost.

Once the employment obstacle exists, some rural migrants will face an entry barrier; in particular if their cash holdings are inadequate to cover the cost of migration. The main purpose of this work is to model the composite interrelationship between individual (migration) decisions and their economic constraints (cash holdings) wherefrom arises endogenous forces that motivate agents to make certain migration decisions. Our argument is that endogenous forces will lead to some improvements in the terms of
trade (TOT, hereafter) in favour of the primary sector, such as agriculture or mining, which would steadily close the gap between the cost of migration and the cash holding of potential migrants. Once this gap is closed, the entry barrier vanishes and the flow of migration significantly increases. It is argued that such a phase of migration includes a reallocation of some resources from the rural to urban areas. Consequently, the improvement in TOT is gradually restricted.

The outcome of the analysis is that the TOT and the migration flow affect each other, in that they mutually feed on each other. While the TOT is negatively associated with rural-urban migration, migration flow is positively affected by an improvement in TOT. This work shows that both TOT and the rate of migration operate on each other and both of these variables change in a compound fashion. Along with some particular endogenous forces, the migration cost can create endogenously driven, self-sustaining migration and TOT cycles, and such cycles will move counter to the cycle of the urban business. Moreover, it can be said that the time profile of migration and cash holdings can cause a very complex and disordered path of rural-urban migration. The process of development can be extremely fragile, weak and brittle if there is a possibility of a disorganized rural-urban migration dynamics.

The rest of the study is planed as follows. Section 6.5.2 provides a backdrop to the rural situation and explains the endogenous changes in TOT, which would reduce the (real) cost of migration. Section 6.5.3 analyses the effects of changes in TOT on the cash holdings of rural households. In addition, it demonstrates that there exists a finite improvement in TOT which would achieve a balance between cash holdings of a typical rural household and the migration cost. Section 6.5.4 examines the endogenous forces
that encourage a cumulative development in TOT, which will establish this balance. Additionally, section 6.5.4 argues that a growing migration rate adversely affects the TOT, which engenders an endogenously driven and self-sustaining migration cycle. Section 6.5.5 represents an extension of the basic model to establish how a complex dynamics can characterise the time path of rural-urban migration. Concluding comments will be offered in section 6.5.6.

6.5.2 The Setting in the Backward Sector

There are two types of economic organisation in the backward sector:

(i) The first type is represented by a production unit, which does not hire any labour inputs from the rural labour force. However, it runs the primary productions such as agriculture, on the basis of family labour.

(ii) The second type is the unit that organises production only on the basis of hired labour.

We give the name Farm I for the first type of production unit, while the second type of producer is categorized as Farm II. We postulate that a Farm I includes identical members and the payoff function of a member is as follows:

\[ Z(C/n, h) = U(C/n) - V(h) \]  

(6.1)

Where:

- \( U \) indicates the utility of a member from consumption \( C \).
- \( V \) represents the disutility from labour.
• $C$ is the primary sector product that poor country (non-oil country) (I hereafter) holds for consumption. $C$ is assumed constant.

• $h$ represents the working hours of every member of country I; the number of the members in country I is presented by $n$.

As $h$ increases, the disutility from labour $V(h)$ increases consequently. If total labour hours remain fixed, then as $n$ decreases $h$ will increase. This increases the utility from per capita consumption $U(C/n)$. Accordingly, it follows that:

$$\frac{d(1/n)}{dh} = \alpha > 0$$

(6.2)

Utility maximisation yields the following optimality condition:

$$\frac{U'(C/n)}{V'(h)} = \frac{I}{\alpha C}$$

(6.3)

We assume the following:

$V'(h) > 0, V''(h) > 0$ and $U'(C/n) > 0, U''(C/n) < 0$.

Based on these restrictions on the first and second derivatives, a unique vector $(h^*, (C/n)^*)$ can be obtained.

The optimality condition $[U'(C/n) \alpha C]/V'(h) = 1$ is fulfilled at $(h^*, (C/n)^*)$. Therefore, any deviation from $(h^*, (C/n)^*)$ causes a decrease of welfare of an average worker in country I. The point of departure of this work is the assumption that country I is
distinguished by a labour surplus. In the Arab region Egypt, Sudan, Yemen and Tunisia represent Arab countries that are characterised by a labour surplus. Therefore, such countries have a capability to transfer labour to the urban sector (oil country) of country II. The GCC, Algeria and Libya are Arab countries that represent Country II. In addition, the output will not be affected. There is only one fetter which restricts such migrant labour, and this is the cash/liquidity constraint.

For Country I there is a cash constraint on labour migration\(^34\). If rural labour of country II acquires the necessary cash holding/fund, they will also migrate to the urban sector in country II. However, country II does not have a pool of surplus labour, so internal migration reduces the regional availability of labour and the opportunity costs are significant. Consequently, country II hires labour from country I.

6.5.3 The Cost of Migration

This sub-section has a particular purpose to show that the real cost of migration and the improvements in TOT in favour of a primary sector comprised of extraction, mining and agricultural activities are negatively associated. In order to show such an inverse relationship, some particular details are required, such as the cash holding/fund I, which is the cost that must be paid by the migrant with the aim of a successful migration. We write the fund \((I)\) that is required for a migrant to make a migration as follows:

\[
I = p_U w_1 b_U + w_2 b_r p_r
\]  

\(^34\) Because of the surplus labour, family members will support such a migration decision. Note \(h^*\) is the per head labour requirement to produce \(C\) units of a certain country’s consumption, which gives each member \((C/n)^*\) of consumption. Now with migration \(h^*\) tends towards \(h^*\) and \((C/n)^*\) tends towards \((C/n)^*\), which would increase the welfare of the remaining labour. As a result, migration may be welfare improving.
Where:

- \( p_u \) represents the price index of urban goods.
- \( p_r \) represents the price index of rural goods.
- \( b_u \) is the vector/bundle of urban goods.
- \( b_r \) represents the vector of rural goods. In fact, a migrant must be able to purchase these goods (rural goods) in order to have a successful migration.
- \( w_1 \) is the weight attached to a vector of the urban goods, whereas \( w_2 \) is the weight for a vector of the rural goods. These weights represent the purchase power of a migrant over these goods, which would provide the migrant a secure situation in the urban labour market.

At a small cost, extended family members of the migrant may periodically send some rural goods to the migrant. This can be seen as an investment which yields payoffs in terms of remittances in the future. Likewise, the migrant may receive entitlements of some urban products once they do casual jobs (insecure and sometimes high-risk informal employment). Therefore, we can name this cash fund 'I' as the start-up capital, or we can call it the investment fund needed in order to achieve access to a successful urban “life”.

Assume \( b_u \) and \( b_r \) are composite goods. In terms of the overall price index, the cost of fund \( I \) is given by:

\[ I = w_1 p_u b_u + w_2 p_r b_r \]

Note that we are playing down the importance of the probability of finding a job just to reduce the complexity of the analysis. This probability is the foundation of the Todaro-Harris model of migration. Such an exogenous probability would not materially alter the analysis.
\[
R = \frac{I}{w_1 p_U + w_2 p_r} = \frac{w_1 b_U + w_2 b_r \frac{p_r}{p_U}}{w_1 + w_2 \frac{p_r}{p_U}} \quad (6.5a)
\]

Let us denote the improvement in TOT by \( X \), so that

\[
X = \frac{d(P_r)}{P_U} \quad (6.5b)
\]

The overall price index \( P \) is a weighted average of \( p_r \) and \( p_U \). However, with the purpose of simplification we assume identical weights \( w_1 \) and \( w_2 \). We identify \( R \) as the real cost of migration.

**Observation 1:** The real cost/investment fund \( R \) depends on the intersectoral terms of trade, \( p_r / p_U \), while \( w_1, w_2, b_r \) and \( b_U \) are the structural parameters.

**Proposition 1:** As the terms of trade improves in favour of the primary sector (mining sector for instance), the real cost \( R \) will decline if \( b_r < b_U \).

Proof: Totally differentiating (6.5b) with respect to \( (p_r / p_U) \) we achieve the following:

\[
\frac{dR}{dX} = \frac{w_1 w_2 (b_r - b_U)}{\left( w_1 + w_2 X \right)^2} \quad (6.6)
\]
Since \( b_u \) and \( b_r \) are composite commodities and \( b_u > b_r \), we have

\[
\frac{dR}{dX} < 0
\]

Equation (6.6) sets up the negative relationship between the real cost of migration and the improvement in TOT in favour of the primary sector. Consequently, the relationship between \( R \) and the improvement in terms of trade can be linearized as follows:

\[
R = N_1 - N_2 X
\]

(6.6a)

Where \( N_1 > 0 \) and \( N_2 > 0 \).36

In the next section, we provide an explanation how an improvement in TOT increases the cash holdings of rural households, which leads to an additional decline in this gap.

6.5.4 The Evolution of Cash Holdings

In this section, we show that there is a limitation on the improvement of the TOT. This limitation affects rural labour with the required cash fund that will result in a successful migration from the rural to the urban sector, or from a non-oil country to an oil country in the Arab region.

**Proposition 2**: As the terms of trade improve in favour of the primary sector the value of surplus \( S \) of country I increases.

---

36 Note that the weighting scheme in the price index may well differ from the weighting scheme in the investment fund. A different weighting scheme would call for a condition under which equation (6.6a) is correct.
Proof: suppose q is the output produced by country I, then the value of surplus $S$ is given as follows:

$$S = (1-r) \frac{p_r}{p_u}$$  \hspace{2cm} (6.7)

Where:

- $r$ is the labour country's fixed propensity to consume. It can be said that an improvement in the terms of trade augments the nominal surplus.

**Observation 2:** For labour of type country II, the time-profile of cash holdings is the following:

$$S_t = S_{t-1} + (1-r) \frac{d(p_r / p_u)}{dt}$$ \hspace{2cm} (6.7a)

$$= S_{t-1} + (1-r) qX$$ \hspace{2cm} (6.7b)

For a big country, q may be also big, so a small improvement in the terms of trade would motivate a high cash effect such that:

$$R < S_t$$ \hspace{2cm} (6.7c)

Non-oil countries can send their labour to oil countries (in the Arab region GCC, Algeria and Libya) as they now gain the required liquidity. Consequently, the demand for labour will increase, which in turn would increase rural employment and then increase the rural wage rate. Therefore, the wage earnings of country I would grow. The increase in wage earnings of country I is represented by $wLX$. Subsequently, an improvement in terms of trade will also occur.
Proposition 3: There is a limited improvement in the terms of trade, $X^*$. Accordingly, for any $X > X^*$, the accumulated cash of country I will be more than the required cash fund I.

Proof: The cash balance of country I is represented below:

$$M_t = (1 - r)qX + wLX + M_{t-1}$$  \hspace{1cm} (6.8)

Where:

- $M_t$ represents the cash balance at particular date $t$.
- $M_{t-1}$ represents the initial cash balance.
- $(1 - r)qX$ represents an increase in the cash holding which is caused by an improvement in terms of trade (equation 6.7a).
- $wLX$ represents an increase in cash holding which is due to an increase in wage earnings. Combining equation (6.8) and (6.6a), we derive $X^*$ as follows:

$$\left(\frac{d(p_i/p_d)}{dt}\right)^* = X^* = \frac{N_1 - M_{t-1}}{(1 - r)q + wLN_2} > 0$$  \hspace{1cm} (6.9)

It can be said that this initial improvement in the terms of trade is positive if the initial cost of migration is more than the initial cash balance before any change in terms of trade occurs. Consequently, if trade in actual terms improves more than this threshold level, successful migration can occur from country I. From this section, we highlight
that the cost of migration imposes price rationing on some rural labour, which operates as an effective entry obstacle. Section 6.7.2 and Section 6.7.3 show that closing the gap between the cost and cash holdings can occur through improvements in TOT gradually. In addition, it is shown that there is a limit to the improvement in TOT, which eliminates the gap and hence enables rural labour to migrate. In the next section, we address the vital question of whether policy regimes and market forces can mesh to generate a cumulative improvement in TOT. Such an event leads to the disappearance of the entry barrier.

6.5.5 The Migration Cycle

In this section, we focus on the time profile of improvement in TOT in addition to the time profile of labour outflow from the rural sector or non-oil country. We denote the improvement in terms of trade in favour of the primary sector by \( X \), whereas \( Y \) represents the labour outflow. At any point of time \( t \), \( X(t) \) represents the extra demand for the primary good. Therefore, we write

\[
X(t) = kE(t)
\]

(6.10a)

Equation (6.10a) is the excess demand function, where \( E(t) \) is the excess demand for the primary product, and \( k \) is an arbitrary speed of price alteration. Consider a typical competitive equilibrium with an uneven distribution of assets in a LDC (see Dasgupta and Ray, 1986). In such an equilibrium, it is possible that the asset-less suffer involuntary unemployment because of their small consumption intakes (Dasgupta and Ray, 1986, 1987).
The improvement in TOT may instead result in an additional increase in the excess demand for primary products. Therefore, a cumulative improvement in TOT in favour of the primary sector would occur. There are three reasons for such an improvement:

(i) As the TOT improves in favour of the primary sector, some agents will encounter entitlement failure in consuming products, such as food (see Sen, 1985 and Koopmans, 1957). Therefore, in order to meet the consumption requirements of people, the government will be under pressure to produce more food. In turn, this increases the excess demand for such rural products.

(ii) It can be said that an improvement in TOT leads to a movement of resources from urban to rural areas or in other words, from oil countries to non-oil countries. This will also enhance the total demand in the economy of non-oil countries. Such an increase in non-oil country income will result in an increase in the demand for primary products, such as food.

(iii) The substitution effect in this context may be insignificant because of the nature of goods produced in the rural sector in the non-oil country. The progress and cumulative improvement in TOT provide rural households with an increase in cash holdings due to the growing migration when the non-oil economy accumulates sufficient cash holdings.
The excess demand in the primary sector depends mainly on two things: (i) the intersectoral terms of trade; (ii) the income of the primary products households. We consider a single household. As the intersectoral terms of trade shift in favour of the primary sector, the industrial good in the oil country becomes relatively cheaper. Hence, a substitution effect decreases the excess demand for primary goods. However, changes in the terms of trade increase the income of households, which in turn operates positively on excess demand for the primary goods. We assume that the income effect of such a price change is greater than the overall substitution effect. In addition, since more people suffer entitlement failures for some specific goods, such as food in oil countries, the governments must provide more goods that are primary to their people. Therefore, governments must buy additional primary products. Consequently, if the TOT increases in favour of primary sector, this will simultaneously increase the excess demand for primary goods, which leads to a greater increase in prices of the primary products in terms of the industrial/oil countries products. Based on this idea, we provide the following proposition.

**Proposition 4**: Assume $\dot{X}$ is the improvement rate in the terms of trade in favour of the primary sector. Then we can approximate the time path of $\dot{X}(t)$ by the following differential equation, in which $Y(t)$ is the migration flow:

$$\frac{\dot{X}(t)}{X(t)} = a - bY(t) \quad (6.10b)$$

Proof: assume $k$ is a constant. We rewrite equation (6.10a) as following:

$$\dot{X}(t) = ke(t) \quad (6.11a)$$
Let \( e(t) \) represent the change in excess demand \((E)\) for a primary products. We argued that the excess demand for primary goods reflects an increasing function of the improvement in TOT for the three reasons discussed above. Therefore, we assume the following:

\[
e(t) = F[X(t)] \tag{6.12a}
\]

Where: \( F' > 0 \)

Linearizing \( F \) we get the following:

\[
e(t) = \alpha_1 X(t) \tag{6.12b}
\]

While \( \alpha_1 > 0 \) measures the sensitivity of excess demand with respect to a change in intersectoral TOT, it can provide two distinct impacts on the excess demand \( E(t) \) as the TOT improves. Due to the three reasons discussed above, such an improvement increases the excess demand for primary goods which can be produced in non-oil countries. It is remarkable that the impact of \( X(t) \) affects the excess demand. However, this effect declines as migration shifts a part of the cash holdings to some sectors in the oil countries. This flow of cash holdings effectively depresses the available net cash holdings/economic resources of the non-oil country, which manifests itself in a decrease in the demand for primary products. This immediately decreases the excess demand \( E(t) \). Consequently, this elasticity \( \alpha_1 \) would be negatively affected by the migration flow \( Y(t) \). Therefore, it can be simply set up as follows:

\[
\alpha_1 = (\beta - \theta Y(t)) \tag{6.12c}
\]
The excess demand increases by $\alpha_i\%$, which equals $\beta\%$ as a result of an improvement in TOT by 1% where no migration occurs. As soon as the migration starts, economic resources move from the non-oil country to the oil country, which decreases the influence of $X$ on $E$. Thus, if the TOT improves by 1%, the excess demand for the products of the non-oil country increases by $(\alpha_i - \theta Y)\%$. We assume that the decrease in excess demand is an increasing and linear function of $Y(t)$, which reveals a negative relationship between these two variables, and by setting the relevant sensitivity coefficient equal to one we also normalize this relationship. Substituting (6.12c) in (6.12b) and substituting (6.12b) in (6.12a) we obtain the following equation:

$$
\dot{X}(t) = k (\beta - \theta Y(T)) X(t) 
$$ (6.13)

Letting $\beta_k = a$, and $b = \theta k$, we derive the following equation:

$$
\frac{\dot{X}(t)}{X(t)} = a - b Y(t) 
$$ (6.10b)

The time path of the intersectoral TOT is approximated by the above differential equation (10b). Equation (10b) reveals that the TOT improves at a rate “$a$” until the migration flow $Y(t)$ relocates a substantial amount of resources from the non-oil country to the oil country. Such a transfer decreases the pressure on the excess demand for products of a non-oil country, which in turn reduces pressure on the TOT.

Turning to the rate of migration, we provide the following explanation.

Proposition 5: The time path of migration from a non-oil country to a oil country follows the differential equation:
\[
\frac{\dot{Y}(t)}{Y(t)} = -c + dX(t) \tag{6.14a}
\]

Where:

- \( \dot{Y}(t) \) represents the change in migration flow.

Proof: Two main intuitions support this proposition.

1. Since migration needs a cash balance, the rate of migration (\( Y(t) \)) declines as the cash balance of non-oil country households shrinks. Therefore, if \( Y(t) \) is current migration, it decreases the current cash balance of non-oil country households, ceteris paribus. Since the current cash balance decreases, future migration \( \dot{Y}(t) \) also will be decreased. Hence, ceteris paribus,

\[
\dot{Y}(t) = -c \cdot Y(t) \tag{6.14b}
\]

2. The positive effect of an improvement in intersectoral terms of trade on the cash balance enhances migration. Hence, \( X(t) \) operates positively on \( Y(t) \). We represent this relationship in the following equation:

\[
\dot{Y}(t) = -c \cdot Y(t) + f \cdot X(t) \tag{6.14c}
\]

for a constant \( f > 0 \)

The effect of \( X(t) \) on the change in migration flow is captured by the coefficient “\( f \)”. We assume that coefficient “\( f \)” depends on successful migration, and the oil country would provide support to the non-oil labour migration. Hence, we write:
\[ f = d \dot{Y}(t) \quad (6.14d) \]

for a constant \( d > 0 \)

The effect of \( X(t) \) on \( \dot{Y}(t) \) is higher the higher is the initial value of \( Y(t) \), since the larger the labour pool from non-oil country households established in oil countries, the higher is the subsequent increase in migration. Combining (6.14a), (6.14b), (6.14c) and (6.14d) we get the following:

\[
\frac{\dot{Y}(t)}{Y(t)} = -c + dX(t) \quad (6.15a)
\]

As agents move from non-oil country households to the oil countries, their cash holdings decrease, which restricts additional migration. Such a negative effect of migration is captured by the coefficient \( c \). In contrast, we can state two main positive impacts on the rate of migration.

(i) As the TOT increases, the cash holdings increase, which enable non-oil households to migrate to oil countries.

(ii) As non-oil agents move to the oil countries, the migration rate would grow due to a greater volume of urban “connection”.

These two positive effects are captured by the term “\( d \)” in equation (6.15a). Both propositions 4 and 5 yield an outcome that the time paths of migration and intertemporal terms of trade cause a special type of differential equation system, which is the much acclaimed Lotka-Volterra case of prey-predator. The natural developments of the system are included in the two observations below:
**Observation 3**: The equilibrium rates of change in migration flow and change in terms of trade are given by the following:

\[
g_1^* = \frac{\dot{Y}(t)}{Y(t)} = \frac{c}{d} \tag{6.16a}
\]

\[
g_2^* = \frac{\dot{X}(t)}{X(t)} = \frac{a}{b} \tag{6.16b}
\]

Proof: see Franke (1988) for the derivation of the above.

**Observation 4**: The solution trajectory \( s(X,Y) \) of the differential equation (6.10b) and (6.14a) lies in a closed positive orbit in the \((X,Y)\) space.

Proof: This is in fact the well known property of the Lotka - Volterra differential equations system as presented by Goodwin (1967). The equilibrium rates are well defined at \( g_1^*, g_2^* \). However, it is not possible for the actual system to converge to the equilibrium rates. The migration rates and intersectoral terms of trade would revolve around \( g_1^*, g_2^* \) (see Goodwin, 1967).

Let us try to clarify the cyclical movements. Consider the diagram below:
Diagram 6.1: Cyclical Fluctuation in Migration and TOT

Note: OA = $Y_{\text{max}}$, OB = $g_2^*$, OC = $Y_{\text{min}}$

In the diagram above, the direction of arrows is arbitrary. Therefore, it is the solution path that is determined by the initial conditions. When the terms of trade increase is $X_{\text{min}}$, the migration rate $Y$ is the average, or equilibrium rate $g^*_2$ (OB). As the terms of trade attain additional improvement, the increase in cash holdings increases the migration rate, which reaches the maximum $Y_{\text{max}}$ (OA). At $Y_{\text{max}}$, the flow of cash to the oil country depresses the demand for non-oil country products vis-à-vis an increase in oil country demand. Hence this development induces the increase in the terms of trade to start slowing down and $X$ decreases. Consequently, the migration rate also decreases, which gradually stabilizes the demand for products of the non-oil country. As the demand for such products gradually increases, the TOT improves in favour of the primary sector, which in turn improves the cash holdings of the non-oil country.
households. As the cash holdings build, through time the migration rate \( Y \) increases, and hence the cycle continues.

**Observation 5:** The above cyclical fluctuations in rates of migration and TOT movements arise due to the special characteristics of the excess demand function for primary products. This excess demand function is shown to be non-monotonic due to the influence of migration and relocation of resources from the non-oil country to the oil country and government pledges in raw material markets on the excess demand for primary products. In other words, the income effect is shown to dominate the substitution effect for primary products in terms of certain values of the intersectoral TOT. In future work, it may be desirable to provide a complete microfoundation to this type of excess demand function.

### 6.5.6 The Complex Dynamics of Migration

We commence with the adapted version of equation (6.14a):

\[
\dot{Y} (t) = \{-c + dX(t)\} Y(t) + \delta \tag{6.14a}
\]

The exogenous growth rate in migration is represented by \( \delta \), which is independent of accumulation of the cash balances. Applying equations (6.14a) – (6.14d) and taking separate values of change in both \( X \) and \( Y \) we obtain the following difference equation from (11a):

\[
Y_{t+1} = (1-c) Y_t + d X_t \ Y_t + \delta \tag{6.17a}
\]
We use time subscript \((t)\) to represent the difference equation, as opposed to the differential equations of prevision sections. As argued before, we postulate that \(X\), the terms of trade, is an increasing function of the migration flow \((Y)\):

\[
X_t = \phi Y_t
\]  

\((6.17c)\)

Where \(\phi > 0\)

It is remarkable that to derive our results we only need \(\phi\) to be \(\neq 0\), in which case it does not matter whether it is positive or negative. From the above we get the following dynamics.

**Lemma 1**: The migration dynamics and the terms of trade dynamics can be captured by the following difference equation in \(X\):

\[
Y_{t+1} = \gamma_3 + \gamma_1 Y_t + \gamma_2 Y_t^2
\]  

\((6.17d)\)

Where:

\[
\gamma_1 = (1-c)
\]  

\((6.17e)\)

\[
\gamma_2 = (d\phi)
\]  

\((6.17f)\)

\[
\gamma_3 = \delta
\]  

\((6.17g)\)

Proof: The derivation can be found in Gangopadhyay (2005).

**Lemma 2**: The above dynamics \((6.17d)\) has two fixed points \(Y^*, Y^{**}\):

\[
Y^* = \frac{[(1-\gamma_1) - SQRT \{(1-\gamma_1)^2 - 4 \gamma_2 \gamma_3\}] / (2 \gamma_2)}
\]  

\((6.18a)\)

\[
Y^{**} = \frac{[(1-\gamma_1) + SQRT \{(1-\gamma_1)^2 - 4 \gamma_2 \gamma_3\}] / (2 \gamma_2)}
\]  

\((6.18b)\)
$Y^{**}$ is always unstable. $Y^*$ is stable if

$$\text{SQRT } \{(1-\gamma_1)^2 - 4 \gamma_2 \gamma_3 < 2\} \quad (6.18c)$$

Proof: The derivation again can be found in Gangopadhyay (2005).

If $Y^*$ is stable, then the terms of trade dynamics (6.17d) will drive the migration flow to the equilibrium point ($Y^*$) if the initial migration rate (flow) is sufficiently close as dictated by (6.18c). If the migration flow at any date ($t$) should go further than the threshold $X^{**}$, then the migration flow will diverge to infinity due to this unstable fixed point. Therefore, for the migration flow to be restricted it is essential that the following be true:

$$Y_t < Y^{**} = Y^{\max} \quad \text{for } t = 0, 1, 2, 3, \ldots \quad \text{And} \quad (6.18d)$$

$$Y_t > \left[ Y^{**} - \left( \frac{\gamma_1}{\gamma_2} \right) \right] = Y^{\min} \quad \text{for } t = 0, 1, 2, 3, \ldots \quad (6.18e)$$

Therefore, the migration flow will be bounded if the initial migration expands within the interval $[Y^{\min}, Y^{\max}]$ and

$$\text{SQRT } \{(1-\gamma_1)^2 - 4 \gamma_2 \gamma_3 < 3\} \quad (6.18f)$$

Equations (6.18d)-(6.18f) imply the migration dynamics remain bounded between $Y^{\min}$ and $Y^{\max}$ if there are restrictions on the parameters and the initial migration flow. Following Feigenbaum (1978), we now apply the change of variable technique, which will transform the non-linear migration dynamics to the logistic equation of May (1976).
Lemma 3: The quadratic migration dynamics (6.17a) is equivalent to the following logistic equation with an appropriate transformation of the variable $Y$:

$$Z_{t+1} = \frac{\gamma_3(Y^* - Y_t)}{A} \quad (6.19a)$$

$$A = 1 + \sqrt{(1 - \gamma_1)^2 - 4\gamma_3}\gamma_1} \quad (6.19b)$$

$$Z_{t+1} = AZ_t(1 - Z_t) \quad (6.19c)$$

In case $1 < A < 3$, then the dynamics of migration converges to the stable equilibrium rate $Y^*$. In contrast, if $A > 3$ then $Y^*$ becomes unstable and the migration flow converges to a stable two-period cycle. However, if $A$ is additionally increased then stable period cycles of period $n$ bifurcates into cycles of $2n$. Note that at $A = 3.57$ the migration flows evolve through a cycle of infinite period. The migration flows are within the relevant bounds. However, they never repeat. For a higher order, the migration flows may appear like a random process. However, they are completely deterministic. Note that for values of $A$ bigger than 3.57 we can have even more complex behaviour.

Result 1: The migration flows will evolve through a cycle of infinite period and hence never repeat themselves if

$$\phi \delta > \frac{[2.57^2 - a^2]}{4b} \quad (6.20a)$$

The main problem with the existing line of neoclassical research in development economics has been its sole reliance on equilibrium analysis as a tool of investigation. However, migration from an non-oil country to an oil country, changes in TOT and the relocation of resources from a non-oil country to an oil country belong to the field of
economic dynamics. Issues concerning migration thus embrace a very dynamic field that is, in turn, affected by bubbles of expectations, intense desires for “comfortable life” and a constant quest for survival of a family by having a foot-hold in the oil country. Thus, it obviously seems that the equilibrium approach to modeling migration disregards various important facets of this field of research. It can be argued this is a general weakness and limitation of neoclassical development economics.

Neoclassical development economists typically focus their attention on economic models with regions of local stability, with the assumption that regions of instability are of little importance and more of a pathological case (see Gangopadhyay 2005). This type of development economics does not find exploding time paths of any significant variable; this is the main justification for using equilibrium analysis. This justification is not correct if we introduce the possibility of disordered dynamics. The development of such chaotic behaviour significantly weakens this dismissal of regions of instability, which can in fact create complex, yet deterministic, dynamics within bounds. This is where we pitch our work to emphasize the importance of chaotic behaviour in the context of development economics and economic integration.

6.6 Concluding Comments

The desire to migrate and the rationality behind migration are well explored issues. Yet modern theories have not examined the implications of the cost of migration, especially liquidity costs in rationed credit markets, and we believe that it is a very important cost that should be considered. This cost represents the price a migrant must pay for the “comfortable life” that can be found and enjoyed in an oil-based country with scarce labour. Consequently, there may emerge a possibility of price rationing. Although a
potential income/utility gain from migration exists, an agent may not have ability to migrate due to being unable to pay the entry price. Hence, such cost operates as an obstacle to entry. In this work we show how endogenous forces may mesh in with government policies to create a steady and cumulative improvement in terms of trade in favour of the non-oil country. Such cumulative improvements tend to close the gap between the cost of migration and the cash holdings of non-oil country households and the price rationing will gradually disappear.

The rate of non-oil to oil country migration will pick up. Since migration requires a transfer of cash and relocates resources from the non-oil to the oil country, it will impinge on the TOT. Thus the flow of migration and the change in TOT are shown to affect and feed on each other. We argue, on the basis of these feedbacks, that there would emerge endogenously driven and self-sustaining migration cycles that run counter to the urban business cycle and life-style benefits which an oil country may have more opportunity to provide. This work also demonstrates the possibility of a complex dynamics that can characterize the migration from a non-oil to an oil country and the attending development and economic integration process. On the basis of this type of complex dynamics, it can be argued that the development and economic integration process can display significant fragility.

This finding has important messages for neoclassical development economics built on the postulate of rational agency: it is typically assumed in the deductive equilibrium approach of neoclassical development theory that the Nash-Walras equilibrium can dispel all systematic prediction errors and an economic system will settle in an equilibrium characterized by self-confirming and mutual-best responses. The deductive
equilibrium analysis may have contributed to the understanding of modern development economics by focusing its attention on the region of stability. However, little attention has been given to the regions of instability. Upon examining the region of instability, we establish that the postulated dynamics from a non-oil to an oil country can display chaotic behaviour. Economic actors, such as labour, governments and industrialists are unsuccessful in detecting systematic errors or inaccuracies. Economic agents can fail to make long run predictions with certainty even though they operate in a purely deterministic world. Time profiles, which start very close together, will separate exponentially. The strength of deductive equilibrium gets terribly emasculated in the context of development economics. We conclude that an application of the standard results of chaotic behaviour in the context of migration from a non-oil to an oil country can be a very important step forward to understand the dynamics of economic development and economic integration.
Chapter Seven

Conclusion and Recommendations

7.1 Introduction
With globalization, Arab economic integration and improvement in the economic performance of Arab countries become more critical than ever. With an increasing population growth rate and stiff economic rivalry and competition from several economic blocs, such as Latin America, the Asian bloc and the European Union, the Arab region faces a number of economic problems that can descend into severe crises. A serious problem and an important source of economic and social crisis can take the form of a development delay as a product of declining trade transactions. In addition, the possibility of economic growth decline looms large due to a flight of investment from the Arab region to other regions.

FDI has been unstable in some of the Arab countries such as members of the Gulf cooperation council (GCC) compared with FDI flows to the other Arab countries characterized by more diversification, such as Morocco, Egypt, Tunisia and Jordan. Although foreign direct investment (FDI) inflow has registered a significant increase to developing countries, it has been weakly attracted to the Arab countries comparing with other developing countries since the 1990s. After the 2001 global economic slowdown, the rising trend reversed in 2002 and FDI became an important source in terms of foreign financing in the most of the developing countries in different regions in the world. Arab countries receive a small portion of total FDI relative to other developing
countries. Only Jordan and lately both Tunisia and Morocco have been seen as Arab countries that performed well in terms of attracting FDI flows. Further, the case of FDI inflows to the Arab region has not improved during the 1990s. Consequently, Arab countries have significantly lagged behind in attracting FDI during the prosperity period of FDI.

Due to the products that are demanded in the GCC region, such as specific products that are important for the oil sector, which can be only provided by advanced countries, the trade-relations of this region are more significant with developed countries than Arab countries. However, only labour-intensive and skill-specific services are demanded in GCC region, which can be met by labour flows from Arab countries characterized by population abundance and low-income, but Arab countries should be aware that the flight of capital along with unplanned immigration in Arab countries can lead to serious problems for the labour market, such as growth in long term unemployment in the Arab region.

In order to meet these challenges, Arab countries need to create and implement a set of policies/schemes to overcome several obstacles, some of which arise in the political, economic and social domains. Although for the sixty years or so Arab countries have repeatedly and continuously attempted to become an integrated region, their achievements in terms of intra-trade, intra-investment and intra-labour flows have been relatively modest. Additionally, in order to promote significant Arab economic integration, Arab countries should narrow the gap between their economic sources and their performance. In addition to a real desire, this necessitates the application of some of well-known instruments, such as elimination of tariffs to increase intra-Arab trade,
adjustment of FDI rules and the tax system to encourage intra-Arab FDI, and adjustment of policies that shape and control remittances in order to facilitate intra-Arab labour flows.

7.2 Summary of Findings

In Chapter 4, we investigated the extent of Arab economic integration through the intra-Arab trade approach. The Panel data fixed effects estimation technique was applied in order to measure intra-Arab trade and the potential for Arab economic integration. We analysed annual data over the period 1985-2005. Due to the availability of relevant data, only 14 Arab countries have been examined in this thesis. These countries were further divided into four sub-groups in terms of their economic unions and geographical bases. Our analysis shows that the sub-union variable significantly affects intra-Arab trade, followed by their economic integration. Arab countries tend to trade more with union members, with an exception of Libya, which is most likely due to the UN economic embargo. In addition, the GDP per capita of Arab countries also affects their intra-trade.

Since the regression results of the analysis presented in this study contain a significant negative correlation between intra-Arab exports and the variables included in the gravity model, intra-Arab trade appears less than the model predicts. This reveals that Arab economic integration can be enhanced if some particular steps are undertaken, such as decreasing the GDP gaps between Arab countries in order to increase their intra-trade, and coordinating trade policies amongst Arab countries. It is also possible to conceive of a plan for further economic integration in view of the sub-groups in the Arab region. This plan should embrace a number of very important factors, such as
production similarity, in particular among countries of a sub-group. Arab countries should consider which country is likely to lead the process of Arab economic integration, a country that has more trade interdependence whether with its sub-group Arab countries or with other Arab countries.

In Chapter 5, in order to investigate the potential for Arab economic integration we examined intra-Arab FDI during the 1985-2005 period. Our analysis shows that intra-Arab FDI is not what should be. This reveals that Arab countries have an opportunity to increase their intra-FDI, especially as they receive relatively small portions of FDI from outside the Arab region. In addition, our analysis shows there is interdependence between Arab countries, in particular between subregional unions, given that economic integration among Arab countries can be enhanced through these subregional unions in the Arab world. Our analysis also shows that intra-Arab FDI is significantly affected by the GDP of the Arab source countries and the GDP per capita of the Arab host country. In addition, our analysis shows that both political stability and sub-regional union also significantly affect intra-Arab FDI. However, both inflation and power purchasing parity of the host country insignificantly affect intra-Arab FDI.

In Chapter 6, we investigated the remittances between Arab countries as a proxy, or indicator, of the labour flows within the Arab region. From the result obtained in this chapter our analysis shows that in terms of the labour market, Arab countries significantly depend on each other, which in turn drives Arab economic integration. Our analysis reveals that since there are remittances among Arab countries their economic integration can be enhanced if Arab countries properly coordinate the relevant policies regarding labour markets in the Arab region, in particular in the GCC.
sub-region. In addition, based on our analysis, Arab countries should consider their GDP per capita in the economic integration policies.

In chapter 6 we also provide a model that can be applied in the Arab world, which considers the associated cost of migration, or ‘entry fee”, that determines a migration decision. In our work, we show how endogenous forces may mesh in with government policies to create a steady and cumulative improvement in terms of trade in favour of the non-oil country. Such cumulative improvements tend to close the gap between the cost of migration and the cash holdings of non-oil country households. The rate of non-oil to oil country migration will pick up. In this work, we also demonstrate the possibility of a complex dynamics that can characterize the migration from non-oil to oil country and the attending development and economic integration process.

The finding has important messages for neoclassical development economics built on the postulate of rational agency. It is typically assumed in the deductive equilibrium approach of neoclassical development theory that the Nash-Walras equilibrium can dispel all systematic prediction errors and an economic system will settle in an equilibrium characterized by self-confirming and mutual-best responses. The deductive equilibrium analysis may have contributed to the understanding of modern development economics by focusing its attention on the region of stability. However, little attention has been given to the regions of instability. Upon examining the regions of instability, we establish that the postulated dynamics from a non-oil to an oil country can display chaotic behaviour.
Economic actors, such as labour, governments and industrialists are unsuccessful in detecting systematic errors or inaccuracies. Economic agents can fail to make long run predictions with certainty even though they operate in a purely deterministic world. Time profiles, which start very close together, will separate exponentially. The strength of deductive equilibrium gets terribly emasculated in the context of development economics. We conclude that an application of standard results of chaotic behaviour in the context of migration from a non-oil to an oil country can be a very important step forward to understand the dynamics of economic development and economic integration.

7.3 Limitations and Future Research Implications

Although the gravity model estimated in chapter 4 includes some economic variables and some dummy variables to capture intra-Arab trade obstacles, it does not contain a variable that measures the tariff procedures affecting intra-Arab trade. In addition, the model does not comprise a variable that measures the trade agreements between Arab countries and the rest of the world. Such variables may affect intra-Arab trade and their economic integration and represent a potential direction for future research. In chapter 5, we did not investigate the effects of some economic variables such as the interest rate. In addition, due to the limitation of data availability our research did not include some Arab countries such as Iraq, Kuwait, Mauritania and Somalia. Such gaps in our research can be filled in future work. In spite of our investigation of labour flows in the Arab world in chapter 6, our research in fact was restricted to using the GCC sub-region as a host region; in particular our investigation comprised only Saudi Arabia due to data availability. Therefore, it is expected that future work can be undertaken to overcome these weaknesses.
Bibliography


Arab Monetary Fund (2004), Annual report.


Arthur, B, (1987), Self-Reinforcing Mechanism in Economics, Food Research Institute, Stanford.


Eid, F. and Paua, F. (2002), "Foreign Direct Investment in the Arab World: The changing Investment Landscape".


209


Kydland, F.E, (1982), Predicting the Price Level in a World that Changes All the Time, a Comment, in: K. Brunner and A. Meltzer (eds), "Economic Policy in a World of Change", Carnegie Rochester Conference Series on Public Policy, XVII.


Raj, K. N (1957), Employment Aspects of Planning in Underdeveloped Economies (Cairo).


Rezgui, S. (2005), "Foreign Direct Investment and Location Patterns in Developing Countries: A check for set up costs in an 'export-platform FDI'?", *Economic Research Forum*, Cairo.


Soliman, M. (2003), Foreign Direct Investment and LDCs Exports: Evidence from the MNA Region, American University of Sharjah, United Arab Emirates.


216


