NOTE TO USERS

DISSERTATION

CAUSALITY LINKAGES BETWEEN INWARD FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH: THE CASE OF THE MIDDLE EAST AND NORTH AFRICA FROM A REGIONAL PERSPECTIVE

Submitted by

Ahmed Fekri Mohamed Mabrouk

Department of Economics

In partial fulfillment of the requirements
for the Degree of Doctor of Philosophy
Colorado State University
Fort Collins, Colorado
Fall 2004

COLORADO STATE UNIVERSITY

November 2, 2004

WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY AHMED FEKRI MOHAMED MABROUK ENTITLED "CAUSALITY LINKAGES BETWEEN INWARD FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH: THE CASE OF THE MIDDLE EAST AND NORTH AFRICA FROM A REGIONAL PERSPECTIVE" BE ACCEPTED AS FULLFILING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

Committee on Graduate Work

Prof. Robert W. Kling

Prof. Ronnie J. Phillips

Adviser - Prof. Terutomo Ozawa

Co-Adviser - Prof. Stephen P. Davies

Department Head - Prof. Ronnie J. Phillips

ABSTRACT OF DISSERTATION

CAUSALITY LINKAGES BETWEEN INWARD FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH: THE CASE OF THE MIDDLE EAST AND NORTH AFRICA FROM A REGIONAL PERSPECTIVE

This dissertation evaluates the relative attractiveness of the Middle East and North Africa (MENA) region for foreign direct investment (FDI) and investigates the issue of causality between FDI and growth in a regional framework. Compared with other developing regions, countries in the MENA region have not been very successful in attracting a significant share of the FDI flows to developing countries. This trend has prevented MENA countries from utilizing FDI as a catalyst for growth and means of transferring knowledge. Four region-specific factors are found to be the most responsible for crowding FDI out of the MENA region: the edgy political climate, delayed institutional and political reforms, the lack of regional collaboration and poor human capital condition.

To overcome the common specification problem associated with bivariate causality analysis, the methodology adopted in this study utilizes the cointegration technique and Granger causality analysis based on a multivariate error-correction model framework. The empirical results indicate that the FDI-stimulated growth hypothesis prevails in nine out of eleven countries; meanwhile, the regional differences are reflected in the nature of channels through which FDI stimulates growth in different regions. This supports the core argument of this dissertation that regional-specific factors matter even more than country-specific factors to explain the variation in magnitude and efficacy of FDI among developing countries.

Ahmed Fekri Mabrouk
Department of Economics
Colorado State University
Fort Collins, CO 80523
Fall 2004

ACKNOWLEDGMENTS

I am highly indebted to my advisor, Prof. Terutomo Ozawa, for his advice. His helpful comments and heartfelt encouragement always supported me both academically and emotionally in the course of my doctorate program that is sometimes very stressing. Without his patience and generosity to keep supporting me, I could have never completed this work.

Also, I wish to express my appreciation to my co-advisor, Prof. Stephen Davies, for his gaudiness during the entire phase of this study. He was always available to advice and resolve any problem or concern with patience and sincerity.

My gratitude is also extended to Prof. Ronnie Phillips and Prof. Robert Kling; it is an advantage to have them on my committee. The advice and insightful comments they gave during my preliminary and final oral exams have improved my dissertation substantially.

I can't find words to express my appreciation and gratitude for my dearest wife, Heba, for her continuous support throughout my Ph.D. program, and for my beloved daughters Nour-Allah and Salma for their patience on having such busy dad. Last but not least, my deep gratefulness for my parents, grandparents and family, especially my mother, Zeinab, who has always been backing me with endless love and much needed encouragement.

TABLE OF CONTENTS

Chapter Three: Foreign Direct Investment Inflows and Geography: A Regional Perspective

Chapter Four: MENA Region Attractiveness for Foreign Direct Investment

Chapter Five: Foreign Direct Investment Contribution to Economic Growth in Host Countries: Empirical Study of Causality

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADF	Augmented-Dickey-Fuller Unit Root Test
AHDR	Arab Human Development Report
ASEAN	Association of Southeast Asian Nations
BCI	Business Competitive Index
BIT	Bilateral Investment Treaty
CPI	Corruption Perceptions Index
CUFTA	Canada-United States Free Trade Agreement
DTT	Double Taxation Treaty
ECM	Error Correction Model
EIU	Economist Intelligence Unit
ERF	Economic Research Forum for the Arab Countries, Iran and Turkey
EU	European Union
FDI	Foreign Direct Investment
FEVD	Forecast Error Variance Decomposition
FTAA	Free Trade Area of the Americas
GAFTA	Greater Arab Free Trade Agreement
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
IIA	International Investment Agreement
IMF	International Monetary Fund
IRF	Impulse Response Function
LEX	Logarithm of Real Exports of Goods and Services
LFDI	Logarithm of Real Net Inflows of Foreign Direct Investment
LGDP	Logarithm of Real Gross Domestic Product
LINV	Logarithm of Real Gross Capital Formation (Domestic Investment)
LPRO	Logarithm of Real Manufacturing Productivity
M&As	Cross-border Mergers and Acquisitions
MENA	The Middle East and North Africa
MERCOSUR	Southern Common Market / Comisión Sectorial para el Mercado Común del Sur
MNC	Multinational Corporation
NAFTA	North American Free Trade Agreement
NATO	North Atlantic Treaty Organization
NIEs	Newly Industrialized Economies
OECD	Organization for Economic Cooperation and Development
R&D	Research and Technological Development
REIA	Regional Economic Integration Agreement
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization

LIST OF THE DEVELOPING COUNTRIES BY REGION[†]

Region:	Countries:
East, South and South East Asia	Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Hong Kong, India, Indonesia, Lao, Macau, Malaysia, Maldives, Mongolia, Myanmar, Nepal, North Korea, Pakistan, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, Thailand and Viet Nam.
Latin America and the Caribbean	*South America*: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay and Venezuela *Other Latin America and the Caribbean*: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Cayman Islands, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago and Virgin Islands.
The Middle East and North Africa	*North Africa*: Algeria, Egypt, Libyan Arab Jamahiriya, Morocco, Sudan and Tunisia. *West Asia*: Bahrain, Cyprus, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Occupied Palestinian Territory, Qatar, Saudi Arabia, Syrian Arab Republic, Turkey, United Arab Emirates and Yemen

[†] Based on the World Investment Report classification, (UNCTAD, 2003).

CHAPTER ONE

INTRODUCTION

1-1 Preface:

One prominent feature of the global economy in the last two decades has been the phenomenal rate at which foreign direct investment (FDI) has been growing. Since the early 1980s, except for the last two years, world FDI flows have grown more rapidly than both world production and world trade (table 1-1). Despite the recent downturn in world FDI flows for the second year in a row, the global stock of FDI owned by some 64,000 MNCs and controlling 870,000 of their foreign affiliates, increased in 2002 by 10% to reach more than $7 trillion. Technology payments, mostly internal to MNCs, held steady in 2001 in spite of the near-halving of FDI flows. Value added by foreign affiliates in 2002 ($3.4 trillion) is estimated to account for about one tenth of world GDP. FDI further continues to be more imperative than trade in delivering goods and services abroad, with global sales by MNCs reaching $18 trillion, as compared with world exports of $8 trillion in 2002. In addition, MNCs created more than 53 million job opportunities for people across the globe (table 1-1).

Unlike other major types of external private capital flows, such as bank loans and portfolio investment, FDI is driven mainly by the investors' long-term prospects for making profits in production activities, whereas loans and portfolio investment are often motivated by short-run profit considerations that make them noticeably volatile.

In East Asian countries, for instance, FDI was remarkably stable during the global financial crises of 1997-1998. In sharp contrast, other forms of private capital flows, portfolio and debt flows and particularly short-term flows, were subject to large reversals during the same period. Indeed, this was the very cause of the Asian financial crisis. The relative stability of FDI during financial crises was also evident during the Latin American debt crisis of the 1980s and the Mexican crisis of 1994-95.

Table 1-1: Selected Indicators of FDI and International Production (1982-2002)

Indicator	Value in Current Prices (Billion dollars)			Annual Growth Rates (per cent)						
	1982	1990	2002	1986-1990	1991-1995	1996-2000	1999	2000	2001	2001
Inward FDI Stats.										
FDI Inflows	59	209	651	23.1	21.1	40.2	57.3	29.1	-40.9	-21.0
FDI Inward Stock	802	1954	7123	14.7	9.3	17.2	19.4	18.9	7.5	7.8
Cross-Border M&A	...	151	370	25.9	24.0	51.5	44.1	49.3	-48.1	-37.7
Foreign Affiliates Stats.										
Sales	2737	5675	17685	16.0	10.1	109	13.3	19.6	9.2	7.4
Gross Product	640	1458	3437	17.3	6.7	7.9	12.8	16.2	14.7	6.7
Total Assets	2091	5899	26543	18.8	13.9	19.2	20.7	27.4	4.5	8.3
Exports	722	1197	2613	13.5	7.6	9.6	3.3	11.4	-3.3	4.2
Employment (1000 worker)	19375	24262	53094	5.5	2.9	14.2	15.4	16.5	-1.59	5.79
Global Economy Stats.										
GDP	10805	21672	32227	10.8	5.6	1.3	3.5	2.6	-0.5	3.4
Gross Fixed Capital Formation	2286	4819	6422	13.4	4.2	1.0	3.5	2.8	-3.9	1.3
Exports of Goods & non-factor Services	2053	4300	7838	15.6	5.4	3.4	3.3	11.4	-3.3	4.2

Source: Adopted from UNCTAD, World Investment Report 2003.

As for developing countries, not only does FDI represent an important source of private external finance and an addition to capital formation in host countries, but, maybe more important, it is also an essential means of transferring technology, innovative capacity and managerial skills, as well as of accessing international marketing networks. However, developing countries' share in world FDI flows does not reflect their development aspirations and quest for a better future (figure 1-1).

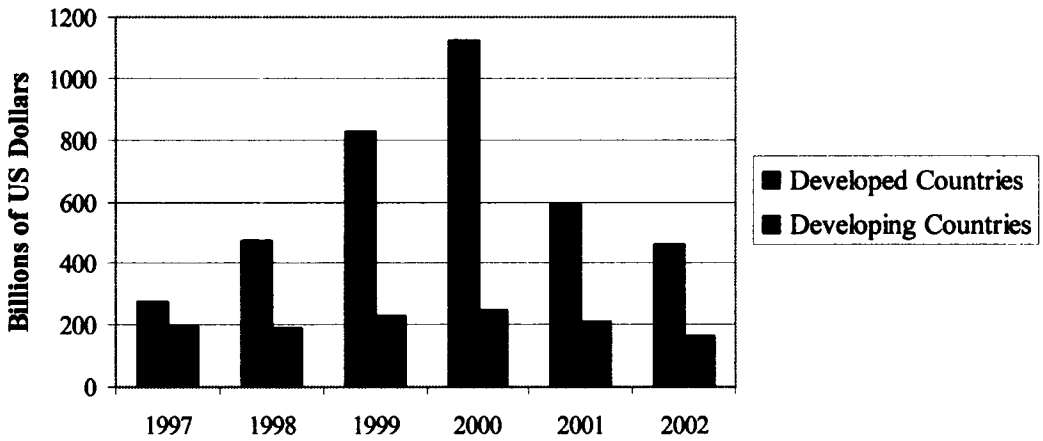

Figure 1-1: FDI Inflows to Developed and Developing Countries

According to UNCTAD (2003), FDI inflows to developing countries in 2000 rose, reaching $246 billion, though their share in world FDI inflows declined for the second year in a row to 18 percent, compared to the peak of 41 percent in 1994. Unfortunately, global FDI inflows were down by 41% in 2001, fell by another fifth in 2002 to $651 billion, that is, just about half its level in 2000, which in turn caused FDI inflows to developing countries to decline for two consecutive years, down from $209 billion in 2001 to $162 billion in 2002, 34% less than its level in 2000. Among developing regions, these small yet diminishing levels of FDI inflows are distributed unequally; the majority of these inflows are concentrated in a small number of

countries mostly in two emerging regions: East and South Asia, and Latin America and the Caribbean (figure 1-2).

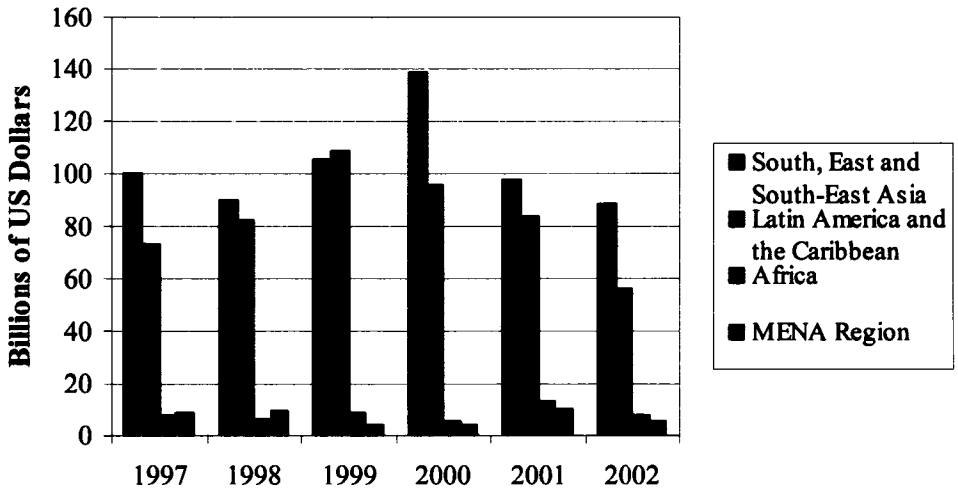

Figure 1-2: FDI Inflows by Host Developing Region

In year 2002, for example, developing Asian countries received 55% and Latin America and the Caribbean 36%, compared with only 5% and 4% for African countries and the Middle East and North Africa (MENA) countries, respectively (UNCTAD, 2003).

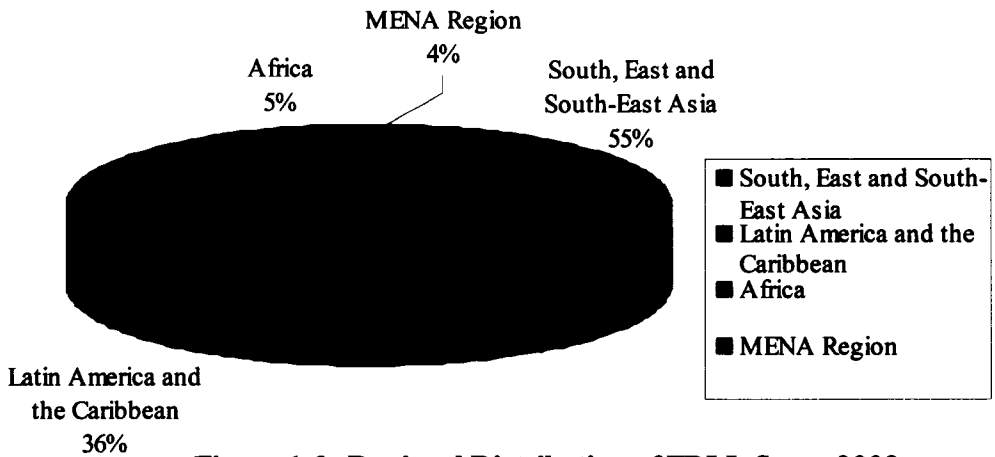

Figure 1-3: Regional Distribution of FDI Inflows, 2002

The existing literature on FDI inflows, their determinants and effects seems to match the pattern of distribution of those flows. This could partially explain the scarcity of studies dealing with FDI inflows directed to the MENA region, as compared with Asia and Latin America regions (see for example studies by Choi, 1995; Poon and Thompson, 1998; Elahee and Pagán, 1999; and Zhang, 2001). This is one reason why the MENA region was chosen to be the focus of this dissertation. Another reason is the unprecedented increased interest in the MENA region's social, economic and political development by the West, especially the United States of America, in the aftermath of September 11, 2001.

To this end, the objective of this dissertation is twofold. First, this study is an attempt to provide the basis for an explanation for such uneven distribution of FDI inflows across developing regions. Specifically, we investigate factors that determine the attractiveness of a country or a region for FDI and factors that might serve as "anti-FDI" determinants and discourage foreign investors from locating their business in certain locations. Second, in the light of major growth theories, this research examines the growth-enhancing effects of FDI in general and from a regional perspective in particular. Specifically, we test for causality links between FDI and growth in countries belonging to three major emerging regions (South and East Asia, Latin America and the Caribbean) in addition to the MENA region.

1-2 Statement of the Problem:

Generally, research in the field of economic growth is quite complex since the direction of causality typically runs both ways from supposed causes to growth and vice versa. FDI and its possible contribution to growth is not an exception. It is rather

more complicated since FDI is often associated with more than one growth-promoting factor, such as deepening capital formation, greater degree of openness and export proceeds and certainly the knowledge/technology spillovers. Therefore, assessing the precise contribution of FDI to economic growth and the possible feedback effect from growth to FDI is problematic (Stocker, 2000). Theoretically, the relationship between FDI and growth has been intensely debated, yet empirical studies have not so far offered clear-cut conclusions with respect to the precise nature and direction of the causality linkage between both variables and the mechanisms through which it works (Buckley et al., 2002).

The theoretical foundation for research on the effect of FDI on economic growth derives mainly from either the neoclassical growth models or the endogenous (new) growth theory. As theory of growth evolves, the channels through which FDI is seen to influence economic growth also evolve. In the neoclassical growth theory context, the only vehicle for growth-enhancing FDI would be through permanent technological shocks. Without technological progress, the neoclassical assumption of diminishing marginal returns to capital (domestic and foreign) would eventually limit economic growth (D. Romer, 1996). On the other hand, endogenous growth theorists provide powerful support for the thesis that FDI could be a potent factor in promoting economic growth. Precisely, to the extent that FDI is believed to transfer knowledge, promote learning by doing and result in technology spillovers and human capital augmentation, as well as institutional change, it should promote growth in the host country. The impact of FDI on growth, therefore, is expected to be manifold and through many different channels. As far as readily quantifiable factors are concerned,

if one were to single out a couple of these major channels suggested by the literature, capital accumulation, productivity and exports would be the leading candidates.

As for the feedback effect from growth to FDI, one can argue that since the direction of causality between FDI and growth depends on the determinants of FDI, if those determinants have strong links with growth in the host countries, growth may be found to cause FDI. It is quite reasonable as well to think that "growth" itself may be an important determinant of inward FDI volume and efficacy given the fact that FDI may be drawn to countries or regions of faster growth or greater potential because their growth prospects have made it more attractive to foreign investors. Furthermore, the advanced countries which are the major investors tend to exhibit slower growth rates, hence, a greater need to search for profitable investment opportunities overseas. This effect is emphasized by Aliber (1993) for example.

Finally, we can consider the scenario where both FDI and economic growth are positively interdependent, creating a bi-directional cumulative causal relationship. Countries with fast economic growth not only generate more demand for FDI but also provide better opportunities for profit-seeking foreign investors and may end up attracting more FDI. Meanwhile, inward FDI flows may foster economic growth of host countries through positive direct effects and indirectly through spillover effects.

Therefore, it is of importance to empirically identify the precise nature of the relationship between FDI and growth in different countries in different regions. Specifically, the central questions in the empirical analysis of the FDI-growth nexus in this study are: Does FDI significantly affect the rate of economic growth in host countries, and if it does, through what channels does this effect takes place, and

finally, how do those channels vary from country to country and from one region to another?

1-3 Purpose of the Work:

The broad goal of this dissertation is to contribute to the empirical literature on the problematic intricate FDI-growth relationship. Employing time-series analysis techniques, not only will this study examine the causality between FDI and growth, but also investigate the dynamic interactions between FDI, growth and three other key macroeconomic variables that interact to shape this causality relation, namely: capital accumulation, exports and productivity. In addition to the region of interest, the MENA region, the study covers a number of developing countries from two other regions, East Asia and Latin America, to see if a regional pattern of relationship can be detected.

The first specific objective of this work is to address the unanswered question of the uneven distribution of world FDI, so as to identify the reasons for such a poor share of world FDI that MENA countries receive. For this purpose, we first study the determinates of regional distribution of world FDI and then turn the focus to the MENA region's attractiveness for FDI in an attempt to understand what factors drive foreign investors away from the region. Our main argument here is that MENA countries, as compared to developing countries from other regions, may have the potential, yet they have not fulfilled the indispensable preconditions of MNCs to operate.

The second specific objective is to identify the precise nature of causality between FDI and economic growth. The analysis not only inspects the direction of

this causality, but also expands to study the mechanism and channels that link the two variables. For this purpose, we utilize the cointegration analysis and apply a multivariate causality test framework based on the Error-Correction Model (ECM). We further inspect the dynamic relationships among the five variables included in the model, FDI, GDP, domestic investment, exports and productivity, by means of the Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD). The empirical study also allows us to analyze the effect of FDI on domestic capital formation and see whether inward FDI flows "crowd-in" or "crowd-out" domestic investment. Moreover, it provides a basis to draw conclusions regarding the effect of FDI on labor productivity and whether countries with higher labor productivity (higher level of human capital endowments that is) enjoy higher volumes of inward FDI. We expect to see that a pattern of causality (direction and channels) prevails in countries from the same region. The main argument here is that region-specific factors do matter, maybe more than country-specific factors.

1-4 Importance of the Study:

The importance of this study is due to three reasons. First, since almost all of the previous studies in this context have focused on merely two regions, East Asia and Latin America, devoting this dissertation to shed light on a third "forgotten" region can be considered an addition to the literature on FDI's role in developing countries and provide another dimension to the analysis given the distinctive socio-economic, political and institutional natures of the MENA countries. In addition, studying MENA region's attractiveness for FDI would be of great importance to policy makers in the region's countries and should help them recognize the

preconditions necessary to attract FDI in higher volumes, and to certain sectors where its efficacy in boosting growth is higher.

Second, examining causality between FDI and growth in the MENA countries empirically is of crucial importance for the implications it provides for development strategies in the region. If a unidirectional causality from FDI to growth is found, this will support the FDI-stimulated growth hypothesis and provide strong reason for which countries in the region must strive to improve their attractiveness for FDI. If, on the other hand, the causality process runs in the opposite direction, this would imply that the growth-motivated FDI hypothesis prevails, where the magnitude of FDI inflows depends on the absorptive capacity of the host country. This will indicate the urgency of reforms required in the region to achieve higher growth rates that may be a prerequisite to attract more FDI.

Third, unlike most of the empirical studies on the FDI-growth relationship that examine causality between both variables in a bivariate Granger-causality test framework, the empirical study in this dissertation is expanded to include all variables, suggested by theory, that shape the FDI-growth nexus. Implementing the multivariate causality analysis within the error-correction model structure allows addressing several important hypotheses with regard to different possible channels through which FDI may affect growth. Furthermore, the very nature of cointegration analysis and error-correction modeling provides insights not only about the long-term relationships among variables in the system, but also about the short-term dynamic adjustment towards the long-run equilibrium.

1-5 Methodology:

The empirical testing of causality between economic variables began with Granger (1969). According to this approach, a variable x_t is said to Granger-cause another variable y_t if this latter can be better "predicted" by using the past values of x_t in addition to past values of y_t than by using the past values of y_t alone. It is worth to mention here though that the Granger notion of causality is a statistical one that rests on predictability and does not necessarily imply any cause-and-effect relationship. In a bivariate system, causality can run in three possible directions. First, x_t causes y_t; second, y_t causes x_t; third, both variables Granger-cause each other in a bidirectional or feedback causality relationship. For a simple bivariate model, a typical Granger test is formulated as follows:

$$Y_t = a0 + \sum_{i=1}^{k} a_i X_{t-i} + \sum_{j=1}^{l} b_j Y_{t-j} + u_t \qquad (1.1)$$

$$X_t = c0 + \sum_{i=1}^{m} c_i Y_{t-i} + \sum_{j=1}^{n} d_j X_{t-j} + v_t \qquad (1.2)$$

and patterns of causality are determined according to the significance of the parameters a_i and c_i. Unidirectional causality from X_t to Y_t, or from Y_t to X_t, requires that at least some of the a_i and c_i in equations 1.1 and 1.2 be significantly different from zero respectively. Bidirectional causality implies that both are significantly different from zero for at least some i.

Granger causality is based on the assumption that the time series included in the analysis should be distinct stationary stochastic processes. If one non-stationary time series is regressed on another, the least-squares regressions can generate misleading results, or what Granger refers to as "spurious regression" (Granger and

Newbold, 1974). In this case the least-squares estimator is not consistent and the standard t-tests of significance can be misleading. Therefore, the Augmented-Dickey-Fuller (ADF) unit root tests are used to check for stationarity. The ADF test is based on estimating the following regression:

$$\Delta X_t = \alpha_o + \alpha_1 X_{t-1} + \sum_{i=1}^{n} \alpha_{1+i} \Delta X_{t-i} + \varepsilon_t \qquad (1.3)$$

where X_t is the variable under consideration and α_1 is the parameter of interest. Testing for unit roots amounts to examining whether the estimated value for α_1 is significantly less than zero. If the null hypothesis that $\alpha_1 = 0$ is rejected, then X_t is stationary. Non-stationary time series can be "de-trended," that is, to establish the stationarity, by differencing the data for a number of times. A stochastic trend is said to be integrated or order d, or $I(d)$ if stationarity is achieved after differencing d times. Similarly, if a series X_t has one unit root, it is said to be integrated of order one, or $I(1)$. When time series are non-stationary, testing for long-run causal relationships requires the use of cointegration and error-correction modeling. Therefore, the second generation of Granger causality tests is based invariably on the concept of cointegration.

The concept of cointegration, first introduced in the literature by Granger (1981) and further extended and formalized by Engle and Granger (1987), captures the long-run relationship between variables. Generally, a set of variables is said to be cointegrated or "to move together in the long run" if a linear combination of their individual integrated series is stationary. One procedure of testing for cointegration and estimating the cointegration vectors is provided by the Johansen test (Johansen,

1991; Johansen and Juselius, 1992). In a bivariate model, the long-run equilibrium relationship between two variables is represented as follows:

$$Y_t = \gamma_1 + \gamma_2 X_t + \varepsilon_t \qquad (1.4)$$

If the residuals from the regression ε_t are stationary, then Y_t and X_t are cointegrated and hence interrelated with each other in the long run. For instance, Y_t and X_t are said to be cointegrated of order one; that is, *CI(1)*, if they each are *I(1)*, but some linear combination of the two generates another series, ε_t, which is *I(0)*.

Granger (1988) argues that if the time series are cointegrated, error-correction models (ECM) should be used to investigate causality since ECM study the short-run dynamics of the variables in the system that are influenced by the deviation from the long-run equilibrium by analyzing how each variable in the cointegrated system responds (or corrects) itself to the residual (or error) from the cointegrating vector. A simple bivariate error-correction model, for two series X_t and Y_t that are cointegrated, can be represented as follows:

$$\Delta X_t = \alpha_0 + \beta_0 z_{t-1} + \sum_{i=1}^{p} \lambda_{0i} \Delta X_{t-i} + \sum_{i=1}^{p} \delta_{0i} \Delta Y_{t-i} + \varepsilon_{0t} \qquad (1.5)$$

$$\Delta Y_t = \alpha_1 + \beta_1 z_{t-1} + \sum_{i=1}^{p} \lambda_{1i} \Delta Y_{t-i} + \sum_{i=1}^{p} \delta_{1i} \Delta X_{t-i} + \varepsilon_{1t} \qquad (1.6)$$

where z_{t-1} is the error-correction term lagged one period, which is *I(0)* since X_t and Y_t are cointegrated. In the ECM there are two possible sources of causation for X_t and Y_t: lagged X_t and Y_t, that is, the traditional Granger test and the error term z_{t-1}. For example, changes in Y_t might be Granger-caused by X_t either through z_{t-1} which itself is a function of the linear combination of X_t and Y_t or through lagged values of the

other variable, or both. Inference concerning causality between X_t and Y_t is therefore based on the statistical significance of β_0, β_1, δ_0's and δ_1's. For instance, if both $\beta_1 \neq 0$ and δ_1's $\neq 0$ holds significantly, then X Granger-causes Y. Otherwise, X does not Granger-cause Y.

While most of the empirical work on causality between FDI and growth is based on bivariate systems, this type of modeling suffers from specification error. Bivariate causality tests may attribute causality to one or the other of the included variables when in fact an omitted variable may very well have a better claim. This is very true especially when it comes to testing for causality between two variables; GDP is one of them. That is why, as mentioned earlier, the empirical work in this dissertation considers all variables that are thought of by growth theorists to deliver the effect from FDI to growth.

The multivariate ECM specification exploited in this dissertation for causality testing can be considered as major departure from the bivariate equation systems that have been widely used in the literature to examine the causality between FDI and growth. Not only does this specification test for direction of causality between both variables, but also, maybe more importantly, it allows identifying the channels through which this causality, if detected, runs. For the (n x 1) vector of cointegrated series, $Y_t = (Y_{1t}, Y_{2t}, Y_{3t} \ldots Y_{nt})$, the error-correction model introduced in equations 1.5 and 1.6 can be generalized to the multivariate version as follows:

$$\Delta Y_{it} = \pi_{it} + \beta' z_{t-1} + \sum_{i=1}^{p} \pi_{1i} \Delta Y_{1,t-i} + \sum_{i=1}^{p} \pi_{2i} \Delta Y_{2,t-i} + \sum_{i=1}^{p} \pi_{3i} \Delta Y_{3,t-i} + \ldots \ldots +$$

$$\sum_{i=1}^{p} \pi_{ni} \Delta Y_{n,t-i} + \epsilon_{it} \qquad (1.7)$$

For the multivariate ECM introduced in equation 1.7, the Granger causality tests are performed by testing whether the coefficients of $\Delta Y_{2,t-i}$, $\Delta Y_{3,t-i}$, ..., $\Delta Y_{n,t-i}$ are significantly different from zero, as well as testing for the significance of the error-correction term coefficient, β'. With this specification, changes in Y_t can be attributed not only to changes in the rest of the variables included in the model, that is, the traditional Granger causality inference, but also to the long-run relationship among all variables, implied in the first place by the existence of cointegration. This unique feature of the ECM allows for any previous deviation from the long-run equilibrium, measured by the error-correction term, z_{t-1}, to exert potential influences on the movement of Y_t. Toda and Phillips (1994), thus, indicate that this latter type of causality may be termed "long-run causality," while the former type of causality can be referred to as "short-run causality." In sum, the ECM conveniently combines the short-run dynamics as well as the long-run adjustment, introducing two sources of causality that can better model the linkages between FDI and growth.

Finally, the empirical study is concluded by inspecting the dynamic relationships among the five variables included in the system by means of the Impulse Response Function (IRF) and Forecast Error Variance Decomposition (FEVD) techniques. Briefly, the IRF traces the effect of a one-time shock to one of the innovations on current and future values of the endogenous variables. The FEVD, on the other hand, separates the variation in an endogenous variable into the component shocks to the ECM, so as to tell us the proportion of the movements in one variable that is due to its own shocks versus shocks to other variables

1-6 Hypotheses:

Not only is this study concerned with empirically investigating the existence of causal relationship between FDI and economic growth, or the direction of such causality, but also with the channels through which this relationship is taking place. Moreover, we argue that these channels vary from one country to another due to region-specific factors even more than country-specific factors. Therefore, the analysis in this study will include eleven countries representing three major developing regions. The sample countries are: four ASEAN countries (Malaysia, Philippines, Singapore and Thailand) and three MERCOSUR countries (Argentina, Brazil and Paraguay) in addition to four MENA countries (Egypt, Morocco, Tunisia and Turkey). In this context the major hypotheses are:

- H_1: A causal relationship running from FDI to growth exists in both ASEAN and MERCOSUR countries.
- H_2: FDI is insignificant for growth in MENA countries because of the anti-FDI factors that limit the magnitude of inward FDI they receive and make its contribution to growth minimal.
- H_3: A bi-directional causal relationship between FDI and growth is most likely to exist in ASEAN sample countries due to higher purchasing power, faster technology changes and export-promotion policy.
- H_4: The export channel is expected to be dominant in ASEAN, whereas in MERCOSUR capital accumulation channel plays the leading role.
- H_5: There is some degree of complementarity between FDI and domestic capital formation, at least in the short run, given the fact that some of the

investment-promoting factor endowments in the host country act as FDI determinants. In short, FDI and domestic investment reinforce each other, in other words, no crowding-out effect is expected to be found.

- H_6: FDI does not, in itself, transfer sufficient volumes of human capital; instead, it augments the existing human capital stock countries possess. That is, FDI will always enhance labor productivity; however, this effect is stronger in countries with higher level of human capital endowments.

1-7 Data and Variables Definitions:

The source of data used in this study is the World Development Indictors (WDI) CD-ROM (World Bank, 2003). The database available on this CD-ROM has yearly data on 575 time-series indicators compiled from various sources, covering the period 1960-2001. However, the availability of data, especially for FDI, varies across countries. FDI data are only available after 1970, yet for many countries even 1970 is not the earliest year.

As mentioned earlier, the set of relevant variables for this study includes the following: GDP, capital accumulation, exports, inward FDI and productivity. Except for the productivity proxy, all other series were collected directly from the WDI CD-ROM. All data are expressed in real terms (1995 prices), and as is common in the literature, each variable is used in the logarithmic form.

For real GDP, ***gross domestic product (constant 1995 US$)*** series is used. It is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. ***Gross capital formation (constant 1995 US$)***, formerly gross domestic investment, is

used as a proxy for real capital accumulation. It consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. As for real exports, ***exports of goods and services (constant 1995 US$)*** is used. It is described as the value of all goods and other market services provided to the rest of the world. ***Foreign direct investment, net inflows (BOP, current US$)*** series is our FDI variable. Since the WDI reports annual net FDI inflows in current US dollars, this series was converted to real value to match the rest of the variables, using the appropriate deflator for 1995. Finally, the ***value added per worker in manufacturing sector*** is our proxy for productivity. This series was generated by using other preliminary series collected from the WDI CD-ROM; specifically, it is the ratio between value added in manufacturing and number of workers in industrial sector.

1-8 Structure of the Dissertation:

Following this introductory chapter, the dissertation is organized as follows:

Chapter Two: ***Determinants of the Distribution of Foreign Direct Investment across the Developing World.***

The purpose of this chapter is to suggest a plausible explanation of the ongoing trend and pattern of FDI inflows to the developing economies, by developing a conceptual framework that integrates institutional aspects into economic supply and demand factors.

Chapter Three: ***Foreign Direct Investment Inflows and Geography: A Regional Perspective.***

This chapter investigates the geographical distribution of FDI across the developing world, with an emphasis on the MENA region as compared to major FDI-

recipient regions, namely South, East and South-East Asia and Latin America. The cases of top FDI six host countries in the MENA region (Algeria, Egypt, Morocco, Saudi Arabia, Tunisia and Turkey) are discussed in detail.

Chapter Four: ***MENA Region Attractiveness for Foreign Direct Investment.***

This chapter is devoted to study the attractiveness of the MENA region for FDI relative to other developing regions. Three interrelated sets of causes are introduced as the most important factors causing differences in attractiveness among different developing regions: the changing nature of FDI supply, varying levels of economic development and different investment climate. Focusing on the MENA region, four region-specific "anti-FDI" determinants are analyzed: political risks, lagging institutional reforms, absent regional arrangements and adverse human capital condition.

Chapter Five: ***Foreign Direct Investment Contribution to Economic Growth in Host Countries: Empirical Study of Causality.***

The focus of this chapter is to build a basis for the empirical testing of causality between FDI and growth. In the light of different growth theories and latest empirical findings, this chapter investigates the direction(s) of this causality relationship and identifies the possible mechanism through which such relationship takes place. The methodology applied is introduced as well as hypotheses to be examined. Finally, data sources and the choice of variables and sample countries are discussed.

Chapter Six: ***Empirical Findings and Policy Implications.***

Empirical findings are gathered and interpreted in this chapter, together with main policy implications.

Chapter Seven: ***Summary and Conclusions.***

The chapter concludes the dissertation, summarizes main findings and results and provides some specific policy reforms recommended to help improve the MENA region's attractiveness for FDI, so as to maximize the benefits especially with regard to economic growth.

CHAPTER TWO

DETERMINANTS OF THE DISTRIBUTION OF FOREIGN DIRECT INVESTMENT ACROSS THE DEVELOPING WORLD

2-1 Introduction:

Since the early 1980s, foreign direct investment (FDI) has grown at a phenomenal rate, and the world market for it has become more competitive. In the meantime, it has become an important source of private external finance for developing countries, especially given its nature as compared with other forms of foreign private capital flows. Not only can FDI add to the existing capital formation and productive facilities in the recipient (host) countries, but, perhaps more importantly, it is also a means of transferring technology in production processes and management, a transfer that cannot be achieved through financial investments or trade. Recipient countries often gain quality labor training in the course of operating the new businesses that enhances skills, innovative capacity, and managerial practices, which in turn contribute to human capital development in the host country.

Nonetheless, not until the mid-1990s did developing countries manage to attract a significant portion of world FDI inflows, reaching an exceptional peak of 41% in 1994. The unfortunate recent downturn in global FDI flows, however, caused FDI flows to developing countries to decline for two consecutive years, down from $209 billion in 2001 to $162 billion in 2002, 34% less than its level in 2000.

Since the major portion of FDI flows has been among developed economies, with similar relative factor endowments, income levels and market institutions, the theories could afford to overlook or give marginal attention to market institutions and political factors because the developed countries could be observed to be similar in these conditions[1]. In fact, as in intra-industry trade models, *similarities* in income levels, factor endowments and market institutions are the fundamental explanations for FDI flows among the developed countries, whereas in order to explain FDI flows into developing countries, *differences* among them are the key.

In effect, an explanation of the magnitude and pattern of FDI inflows into developing countries would require an analysis of a complex set of factors, since those countries differ not only from developed countries, but also among each other in several ways. They differ in the levels of economic and human development, resource endowments, and infrastructure conditions in addition to political and legal institutions. Those differences will not only determine whether FDI will take place in a selected location or not, but in fact also explain the rationale behind the choice multinationals make between serving certain developing countries with direct investment rather than other alternative modes of entry, such as licensing and exports.

The purpose of this chapter is to suggest plausible explanations of the ongoing trends and patterns of FDI inflows to developing economies by developing a conceptual framework that integrates institutional aspects into economic supply and demand factors. In the light of that framework, a proposed organizational template

---

[1] This supported the premise conceiving FDI flows as a substitute for intra-industry trade in differentiated goods by incorporating transportation costs and economies of scale into the analysis.

will be presented to identify the relationships between a set of "determinant-endowments" a developing country possesses, and the magnitude and types of FDI it receives. Such a template is expected to be of importance to developing countries in order to assist policy makers in recognizing the preconditions necessary to attract FDI to certain sectors. The analysis does not develop an entirely new econometric model; instead, it utilizes and builds on the existing theoretical and empirical literature on the determinants of FDI.

2-2 Determinants and the Type of FDI:

There are many theories seeking to answer the following questions: why would foreign investors choose to invest abroad? And if they were to invest abroad, where to invest? And why will a specific country or region will be chosen over another? To put this in perspective, it is essential to distinguish between different types of FDI. Basically, there are two main strategies a firm would consider when making the decision to become a multinational one. Firstly, market-seeking strategy, typically known as "horizontal" FDI. Secondly, efficiency-seeking strategy, often called "vertical" FDI. The type of FDI, as well as the business sector, affects the relative significance of different FDI determinants.

2-2-1 Horizontal FDI:

Horizontal FDI normally involves the set-up of duplicate plants in a particular country to supply goods and services to the local market and often neighboring markets as well. This kind of FDI may be undertaken to sustain or protect existing markets or to exploit or promote new markets. The most frequently cited motive for market-oriented FDI is to reduce the costs involved in supplying that market, such as

transportation costs or tariffs imposed by host country governments. However, studies of the causes of FDI, such as Caves (1971, 1974a, 1974b), have shown that market-oriented FDI is most likely to originate from and to be found in the industries characterized by high product differentiation, high absolute capital costs, high economies of scale, high multi-plant economies and high entrepreneurial requirements.

According to these characteristics, the general implication is that host countries with larger market size, faster economic growth and higher degree of economic development will provide more and better opportunities for these industries to exploit their ownership advantages and, therefore, will attract more market-oriented FDI. As such, horizontal FDI will tend to replace exports if the costs of market access through exports are higher than the costs of setting up a local plant and doing business overseas in a foreign environment. In addition, the larger the local market is, the more likely horizontal FDI will replace exports, for two reasons. First, the plant-specific fixed costs per unit will be lower the larger the market. Second, larger markets will tend to have more local firms and more intense competition, leading to a lower price for the product (Shatz and Venables, 2000).

2-2-2 Vertical FDI:

Efficiency-seeking FDI, on the contrary, involves slicing the "vertical" chain of production and relocating part of the chain in a lower-cost location (Lim, 2001). Vertical FDI is normally export-oriented, frequently to the multinationals' home market or other countries, and unlike horizontal FDI, it tends to be unaffected by the market size of the host economy. Alternatively, the explanation for export-oriented

FDI can be found in an extension of international trade theory. The principle of comparative advantage assumes complete immobility of factors of production and also explains the existence and the pattern of trade in terms of factor endowment ratios and preference characteristics in different countries. However, factor endowments should not be considered as rigid, especially in developing countries. A country's comparative advantage changes over time in the process of its economic development, depending on its relative performance in physical capital and human capital accumulation as compared to other countries in the world[2]. Hence, a modified version of the traditional theory of comparative advantage that allows for the international mobility of some factors of production, for example, capital and technology, and not others like natural resources and human labor, can very well provide an explanation for the location decisions of FDI.

In particular, vertical FDI will be stimulated by differences in immobile resource endowments; in other words, when different parts of the production process have different input requirements and when input prices vary across countries. Those countries endowed with a relative abundance of a particular immobile factor will be the location choice of the production of those commodities that use it intensively[3].

In the following sections, major determinants of FDI in developing economies will be investigated in the light of the major streams in the literature.

---

[2] The frequently cited successful examples are the NIEs: Hong Kong, Singapore, South Korea and Taiwan. For good discussion see the "Flaying Geese" theory, a model of industrial upgrading introduced by Ozawa (1992, 2001 and 2003).

[3] Vertical FDI thus encompasses what is commonly called "raw material or resource-seeking FDI."

2-3 Economic and Institutional Determinants of FDI:

According to Dunning's eclectic paradigm[4], which synthesizes the main elements of the various explanations for FDI, the economic determinants of FDI can be classified into two groups, supply-side factors and demand-side factors. The supply-side factors are ownership advantages and the internalization advantages, and the demand-side factors are location advantages. In terms of the supply-side factors, the investment potential and investment patterns of MNCs are determined by the nature and extent of their possession of ownership advantages and the incentive to internalize the use of their ownership advantages. In terms of the demand-side factors, a host country's overall attractiveness for FDI is determined by the location advantages it possesses. Dunning argues that the more ownership advantages firms possess, the greater their incentive to internalize their use; the more they find it advantageous to exploit them from a foreign location, then the more they are likely to engage in foreign production and become multinationals.

Nonetheless, the new institutional economics shows that efficiency of economic activity, on both the supply and demand sides, depends on market institutional factors such as transaction costs and property rights (Williamson, 1985; North, 1990). In other words, the importance of institutional factors is pervasive in an economy for attracting FDI. The three sets of determinants will be discussed in turn.

---

[4] Dunning (1977, 1981, 1988 and 1999) suggested that three conditions are needed altogether for a firm to have a justifiable motivation to undertake direct investment in a foreign country. This has become known as the "OLI" framework: ownership, location and internalization advantages (see also Aliber, 1993).

2-3-1 Supply-Side Determinants:

The intangible asset theory of FDI shows that innovation provides a firm with a firm-specific advantage in the home and foreign markets (Hymer, 1976; Kindleberger, 1969; Casson, 1987; Dunning, 1988; and Caves, 1996). According to Hymer, the decision by a MNC to invest in a production unit abroad is essentially to control some proprietary assets within the firm rather than transact it via the market[5]. The proprietary nature of these assets provides the innovating firm with a monopolistic advantage over other firms both in the home and foreign markets. However, the creation and development of the ownership advantages of multinationals are closely related to their home countries' technological and innovative capabilities and the overall economic development levels. That is to say, differences in their technological and innovative capabilities and in their levels of economic development will create differences in the nature of the ownership advantages of the multinationals of different countries.

MNCs from developed home countries with high technological and innovative capabilities and high overall economic development level will possess not only more ownership advantages in general but also more ownership advantages in the forms of high technology, product differentiation, managerial and entrepreneurial skills and knowledge-based intangible assets in particular. In contrast, for MNCs whose headquarters are based in developing countries, the ownership advantages they possess

---

[5] In his seminal 1960 doctoral thesis published in 1976, Hymer indicated that since FDI involves the transfer of a bundle of tangible and intangible assets such as know-how, administrative expertise and ownership of a brand name in addition to financial capital, MNCs' motivations to produce across borders are controlled by their anticipated earnings on the entire resources they devote for international production.

are not only relatively small, but also are more concentrated in the forms of labor-intensive production technology, standardized manufacture products and well-established export market networks.

The incentives for multinationals to internalize the use of their ownership advantages through FDI depend not only on the nature of the ownership advantages but also on the degree of imperfections in the target markets[6]. The more technology-intensive the production is, and the higher the imperfections of the markets, the stronger the incentives for the firms to internalize the use of their ownership advantages through FDI and control operations. Since enterprises from the developed source countries possess more technology-intensive and knowledge-based intangible assets of ownership advantages than enterprises from the developing source countries, we may conclude that enterprises from developed source countries have greater incentives to internalize the use of their ownership advantages and a stronger tendency to secure control over the business than enterprises from the developing source countries.

Based on this, a potential explanation for why the developed countries in general are the source and the developing countries are the destination for FDI can be drawn based on the earlier neo-technology trade theories and the recent endogenous growth theory. The neo-technology theory has showed that a country that is endowed with favorable capital- labor ratio, knowledge inputs and conditions for appropriation

---

[6] The general argument of the internalization theory is built upon the fact that multinationals tend to internalize operations to minimize costs of transactions and increase productive efficiency when faced with imperfect information and other imperfections in the markets for intangible assets (Buckley and Casson, 1976).

of innovation and a large home market becomes a breeding ground for innovation. The cumulative process of technological innovation in developed economies keeps developing economies with a continuous technological lag (Vernon 1966; Krugman, 1979)[7]. The endogenous growth theory, on the other hand, sheds light on how technological change is endogenously generated in developed economies by micro- and macro-level incentives originating from market conditions and institutional system (R. Romer, 1990). Hence, the introduction of new differentiated goods and services in developing countries requires the presence of a whole set of complementary factors such as skilled labor, managerial capability, certain technological institutions and intellectual property protection, most of which are incompetent or completely missing.

2-3-2 Demand-Side Determinants:

As noted earlier, the host country's attractiveness to FDI is determined by the location advantages it possesses, that is, demand side factors. Since resource endowments, social, economic and institutional factors vary from country to another and from region to another, the attractiveness set of factors varies among different host FDI destinations. Given the ownership advantages of the MNCs and the incentive for them to internalize the use of their ownership advantages, the location determinants of host countries, such as market size, economic growth, labor costs, trade barriers, government policy and political stability, are very crucial in determining the distribution of FDI inflows among host countries and regions.

---

[7] According to Vernon's product life-cycle hypothesis, a product is originally invented, then produced in the home country that has comparative advantage in technology and innovative capabilities. At a subsequent stage of the product's life-cycle, the product is exported, then as the technology used in production becomes more standardized, operating overseas will be more appealing. Finally, if conditions in the host country are favorable, the subsidiary branch might replace exports from the parent company (Vernon, 1966).

2-3-2-1 Market Size and Economies of Scale:

Of the literature reviewed in this study, the most robust determinant of FDI is the size of the host market. Real GDP or GDP per capita[8] as proxies for market size are highly significant and positively related to FDI flows in virtually all the studies (Lecraw, 1991; Pfeffermann and Madarassy, 1992; Lucas, 1993; Tsai, 1994; Choi, 1995; Singh and Jun, 1995; Bardesi et al., 1997; Dees, 1998; Fung et al., 2000; Shatz and Venables, 2000; and Asiedu, 2002)[9].

In those studies, the argument for the importance of market size as a locational determinant of FDI is primarily based on the theory of economies of scale. It states that a sufficiently large market can provide more opportunities to realize and explore economies of scale, hence achieving cost minimization on one hand. On the other, it allows for the specialization of production factors and facilitates more efficiently the absorption of the advanced technology brought by large multinationals. This would reflect the so-called "market size hypothesis," which assumes a positive association between FDI and the expected sales of foreign subsidiaries in the host countries, as an indicator of the profitability of FDI. It is not at all surprising that economically large countries such as Argentina, Brazil, China, Indonesia, India and Mexico are consistently among the major FDI recipients among emerging economies.

---

[8] Some of the empirical studies also included the GDP growth rate as one of the explanatory variables in the sense that it reflects a country's development potential that may encourage attracting higher levels of FDI (see for example Tsai, 1994; Bardesi et al., 1997; and Dees, 1998). The relationship between economic growth and the magnitude of FDI inflows will be analyzed in detail in a later chapter

[9] This may partially reflect the fact that most of the world's FDI is horizontal in nature.

For market-oriented (horizontal) FDI and FDI in non-tradable sectors, especially in the service sector, obviously the domestic market size is a very important determinant affecting the investment location decision. For export-oriented (vertical) FDI, such as FDI projects located in several developing countries mostly in East and South-East Asia, domestic market size can still be important even though the domestic market is not the ultimate goal of the production. This can be explained in terms of the more opportunities the larger economies can provide for industries and enterprises to benefit from external economies of scale and spillovers effects. This is especially important for high-tech industries and those industries which have a relatively high requirement for well-trained, skilled and semi-skilled workers. Moreover, larger economies not only can sustain more economic activities but also can provide more opportunities for economic diversification, which is an extremely crucial issue for conglomeration and diversification-type FDI.

Economies of scale, especially in capital-intensive sectors, also play an important role in determining the pattern of FDI. If the local market is too small, FDI in capital-intensive goods does not take place, because serving the market through exports would be more efficient than duplicating plants. Existence of large local market facilitates static and dynamic economies of scale, which in turn can also provide an advantage for undertaking exports apart from serving the local market. This advantage can be magnified in a host developing country with a large market for differentiated goods by low cost of skilled and semi-skilled labor. One important condition is that the cost advantage arising from low labor costs and scale advantage

in large developing economies should not be offset by high costs of infrastructure obstacles.

2-3-2-2 Trade Policies and Transportation Costs:

The choice multinationals make between serving a foreign market with exports versus direct investment is a matter of trade-off between plant-level economies of scale and transportation costs in addition to tariffs. In such a case, FDI serves as a substitute for international trade. To the extent that horizontal FDI will tend to replace exports when the cost of market access through trade is high, horizontal FDI will tend to increase the larger the distance between home and host countries, and the higher the transportation costs thereafter. In a study covering a mix of developed and developing countries, Brainard (1997) found that transport costs are positively related to FDI. In addition, the import substitution strategy and protectionism measures pursued by host developing countries make FDI an efficient alternative to trade for MNCs to penetrate local markets. Hence, horizontal FDI undertaken to get behind trade barriers (tariff-hopping) may decrease with a decrease in tariffs, an increase in openness, that is.

Vertical FDI, however, which is mostly export-oriented, may be discouraged by high transportation costs[10]. Instead, it benefits from a liberal and predictable trade environment and will increase with greater openness because it requires substantial flows of intermediate inputs components and final goods in and out of the host country. Unsurprisingly, the net effect of openness on FDI is uncertain and empirical findings tend to be mixed, especially regarding the difficulty of measuring openness empirically.

---

[10] This can be seen from the well-reported large FDI flows between the U.S. and Mexico.

Various measures of openness have been used, including indicators like the ratio of exports or imports or the sum of both to GDP (Kravis and Lipsey, 1982; Akhter, 1993; Singh and Jun, 1995 and Dees, 1998), average tariffs (Branard, 1997) and other BI and BERI indices, which are a mixture of many factors (Lecraw, 1991; Wheeler and Mody, 1992). Most of the studies show a positive correlation between openness and FDI. Dees, Singh and Jun, Lecraw, Akhter and Kravis and Lipsey all find their measure of openness to be positively correlated with FDI. However, Branard finds higher average tariffs increasing U.S. FDI, and Wheeler and Mody find total U.S. manufacturing FDI correlated with greater restrictions. Their results suggest that U.S. FDI was mostly horizontal and undertaken in part to get behind trade barriers. This was indicated when Wheeler and Mody estimated their model using only electronics-related FDI, instead of total manufacturing, as the endogenous variable, to isolate the effect on vertical FDI and the coefficient on openness became insignificant.

2-3-2-3 Factor Cost:

Factor prices, including the price of capital, natural resources and wage rates, that largely determine the cost of production, play an important role in attracting foreign direct investment. By definition, efficiency-seeking vertical FDI will be stimulated directly by lower factor cost[11]. Also, lower costs should also be viewed favorably by horizontal FDI since higher factor cost reduces profitability and therefore may discourage foreign investors (Woodward and Rolfe, 1995). Among other factor costs, wage rate is found to be the most important determinant, especially when FDI is

[11] Maquiladoras, U.S.-owned assembly plants built in Mexico specifically to take advantage of low labor cost, are good example (Feenstra and Hanson, 1997).

export-oriented (Mody and Srinivasan, 1998). Similarly, Wheeler and Mody (1992) find labor costs to be a significant influence on U.S. electronic assembly manufacturers.

Nevertheless, Pfefferrnan and Madarassy (1992) note that direct labor costs in particular are less important than they formerly were, while the significance of executive and supervisory labor costs has been rising. Along with these results, Mody et al. (1998) find raw labor costs not to be an attractor of Japanese FDI while labor quality is. Likewise, Fung et al. (2002) indicate that for U.S. and Japanese FDI in Chinese provinces, even though the average wage cost is insignificant, labor quality proxied by educational attainment is significant. These findings strongly suggest that perhaps the better variable should have been unit labor cost, but such data are usually not available.

Consequently, it is increasingly attractive for MNCs to invest in countries that offer a well-educated pool of labor. More generally, companies focus increasingly on competence, education and high skills. Not surprisingly, the major recipients of FDI, especially in manufacturing, among the emerging economies also tend to be regions and countries with relatively high literacy rates and skill levels in the work force.

2-3-2-4 Agglomeration:

Another important determinant of FDI is the presence of technologically dynamic industry clusters. To the extent that agglomeration effects make clustering attractive, their impact on both horizontal and vertical FDI will be positive. If specific industries in a developing economy are organized in terms of technologically dynamic

clusters, the external economies of cluster activity[12] can magnify the comparative advantage that the economy may possess in skilled labor. In addition to low labor costs, factors contributing to agglomeration effects include the host country's infrastructure conditions, the degree of industrialization and the size of the existing FDI stock. Those last two factors are reflection of the relative availability of specialized support services and competition status in the host country.

The technologically dynamic clusters in developing economies might differ in some features from those in developed countries. According to Porter's theory of clusters that characterizes the technologically dynamic clusters in developed economies, the microeconomic basis of innovation in a country-specific industrial cluster depends on the interactions between input supply and local demand conditions, the presence and orientation of related and supporting industries and the nature of local competitive rivalry (Porter, 1990). In developing countries, however, technologically dynamic industry clusters could be export-driven due to comparative advantage reasons, essentially the low costs of skilled labor or to serve a large growing local market.

One good example is the software industry cluster in Bangalore in the southern part of India, which is export-driven with minimal domestic market (Ghemawat and Patibandla, 1999). In such case, local competitive rivalry is not a necessary condition. Most MNCs have set up development centers in Bangalore for supporting R&D activities in home base and for software development for global market. The relevant

---

[12] External economies of cluster activity implies that for given inputs, the output of an individual firm is larger the larger is the aggregate output of other firms producing the same good in a cluster or a region.

point here is that MNCs investment in Research and Development in India's software industry is motivated by taking advantage of the low cost of skilled labor and also the strong external economies of a dynamic industry cluster (Patibandla and Petersen, 2001).

The automobile industry cluster in Tamil Nadu in the southern part of India is another example of a local-market-seeking cluster that was created by the entry of quite a few MNCs into the Indian automobile industry in the recent years. Several MNCs such as Hyundai, Ford Motors, General Motors and Mitsubishi have set up plants in that location. Unlike the case of the software industry cluster in Bangalore, the primary motive for the multinationals' entry here is to cater to large growing local market. The location decision of MNCs within India, therefore, is based on economic efficiency considerations, locally available skilled labor and relatively efficient infrastructure compared with other countries within the region. As the local market grows, it provides significant economies of scale, and as the cluster becomes dynamic, it provides significant external economies. Combining these factors with the low cost of skilled labor will give strong comparative advantage to the MNCs to use the location for serving other Asian economies (Patibandla, 2001).

Empirically, the net impact of agglomeration effects on FDI is found to be positive. In a study of capital expenditures by U.S. manufacturing MNCs covering 42 developed and developing countries, agglomeration (clustering) effects are found to be highly significant (Wheeler and Mody, 1992). All three agglomeration-related variables (quality of infrastructure, degree of industrialization, and the stock of FDI) had large impacts on U.S. manufacturing FDI. The quality of infrastructure is the

dominant factor for developing economies, whereas specialized support services are more important for industrial economies. Regarding the positive influence of the existing stock of FDI, foreign investors seemed clearly to be influenced by the presence of other foreign investors. Other findings of positive agglomeration effects include Loree and Guisinger (1995), Moran (1998) and Fung et al. (2000).

2-3-2-5 Regional Economic Integration:

One evident characteristic of today's globalized world economy is the creation, deepening and widening of regional economic integration agreements (REIAs) throughout the world. Indeed, nearly every country in the world is a member of, or in the process of discussing participation in, one or more REIAs, and more than 60% of world trade occurs within such trading blocs (Schiff and Winters, 1998). Since REIAs normally bring about a reduction in intra-regional trade barriers and capital movement restrictions, leading to one large integrated market, they would likely affect FDI inflows to integrated regions in several ways. The obvious effect of REIAs is what they represent of an attempt to "increase the size of the country," to obtain the benefits of large countries over small countries, with all the implications that this carries for investment strategies of MNCs as discussed earlier in section 2-3-2-1. Empirically, Buckley et al. (2001) find that European multinationals have raised their FDI in the USA as a result of the North American Free Trade Agreement (NAFTA) that became effective on January 1st, 1994, following the initial Canada-United States Free Trade Agreement (CUFTA) signed in 1988.

Motta and Norman (1996) developed a theoretical three-country, three-firm model to analyze the effect of economic integration on oligopolists' international trade

and FDI choice. Their findings indicate that economic integration will induce MNCs to invest more in the integrated bloc; however, this is not due to the increase in market sizes as much as it is because of the improvement in market accessibility. They argue that increased country size is likely to lead to dispersed FDI, targeted primarily at local markets. Economic integration, thus, will more likely create intra-regional export platform FDI, with the investing firm supplying the majority of the countries in the regional bloc by intra-regional exports, they concluded.

Blomström and Koko (1997a) distinguish between static and dynamic effects of regional integration on FDI flows. They assert that the static effects on intra-regional FDI are subject to partially two offsetting influences. On one hand, a reduction of regional trade barriers may reduce tariff-hopping FDI; on the other hand however, it could stimulate vertical FDI flows among the relevant trading partners by enabling MNCs to operate more efficiently across borders. The net effect on any specific REIA or individual member country will be determined by the structure of and motives for pre-existing investment, they indicate. For inter-regional FDI, the magnitude of inflows to the region would increase if it was initially restricted by the limited size of individual national markets; the integrated common market may be large enough to bear the fixed costs associated with the establishment of new foreign affiliates.

As far as dynamic effects of REIAs are concerned, Blomström and Koko (1997b) state that the potential improvement in overall economic performance and growth rates for member countries, as a result of enhanced allocative efficiency and increased competition, will make it more attractive to invest in the region. In addition,

the larger integrated market may influence various firm characteristics, such as inducing firms to merge with former competitors in order to better operate in a more competitive environment created by the REIA. As firms become larger, their ability to invest in R&D becomes greater; this eventually may create new intangible assets that stimulate new intra-regional FDI flows as well as inflows from the rest of the world.

REIAs can also improve the credibility of members' policies through mechanisms that are not obtainable through unilateral or bilateral agreements (Fernández and Portes, 1998). An REIA can help guarantee greater commitment to reforms on member-countries governments' side by raising the reform decision from the national to the international level, so as to create a more predictable policy environment for foreign investors.

2-3-3 Institutional Determinants:

Dunning's OLI framework employs the institutional elements of transaction costs for explaining internalization behavior of multinational corporations (Dunning, 1977). Dunning emphasizes the higher costs of transacting via the market as compared to internalizing transactions within the firm because of missing, or imperfect markets for trade, or because of imperfections associated with selling licenses. The institutional aspects in determining investment decisions in developing economies, however, are more complex than those generally formulated in the literature of internalization[13].

[13] There is a large body of theoretical literature on FDI on the issue of internalization, which takes into account institutional elements such as transaction costs and property rights (see for instance: Oxley, 1995 and Caves, 1996).

The new institutional economics makes a distinction between institutional environment and the institutions of governance. The institutional environment is defined jointly by the formal constraints such as constitutions, laws, property rights, and the informal constraints like sanctions, taboos, customs, traditions and codes of conduct. The institutions of governance are markets, quasi-markets and hierarchical modes of contracting and managing transactions in addition to political risks such as governmental corruption and regulatory, bureaucratic and judicial performance (Williamson, 1998). The clarity of the country's laws, the extent and honesty of law enforcement, the efficiency of the bureaucracy and the absence of corruption would all be transaction-cost-reducing factors which could make the host country location desirable. In the following two sub-sections, two crucial institutional determinants of FDI will be discussed to show how they can affect not only the location choice, but also the type of entrepreneurship of the forthcoming investment.

2-3-3-1 Property Rights Protection:

Alike the market for public-goods, the market for intangible assets is imperfect in several ways in the sense that technology developed by one firm can be applied at little cost by other firms. For FDI to take place in a foreign country, it requires strong intellectual property rights protection. Similarity in the intellectual property rights protection institutions in developed countries can very well provide a reasonable explanation for the high magnitude of FDI in modern industries among those countries.

Effective protection of property rights ensures that the owner of an asset has discretion over the uses to which the asset is put and is able to appropriate returns

from the asset. This has implications for FDI at two levels: first, it may determine whether FDI will take place at all in a particular country in a specific industry, and second, it affects the type of ownership modes MNCs would adopt to invest in certain countries. When the value of assets protected by patents and trademarks cannot be fully achieved by the owner, the incentive to make investments involving these technological and marketing-based assets is reduced. Under a weak property rights regime, higher ownership modes are more efficient because of the reduction in cost of unwanted dissemination. Where property rights protection is greater, lower ownership modes are more efficient, as the risk of asset appropriation is less.

In developing countries characterized by weak property rights regimes, the risk of appropriation for MNCs stems from both governments and private agents. Predation by governments arises out of the absence of regulatory predictability and procedural transparency. The government's predation can be at two levels: frequent changes in the policy towards MNCs for political reasons and predation by the state officials. The latter possibility arises when the rules are not clear, which provides scope for discretion of the government agents for extracting bribes.

2-3-3-2 Political Risks:

The effects of political instability on FDI are apparent in two ways. First, and most importantly, there are potential host countries whose histories have been marked by chronic political instability, which has deterred many investors from undertaking projects. Second, even brief periods of governmental instability can cause interruptions in FDI flows as investors wait for a return to normality in the political system.

Aside from political instability, political risks that foreign investors may confront typically emerge from the lack of credibility and effectiveness of a regulatory framework, hence its ability to facilitate private investment in general and foreign direct investment in particular. Such ability varies with the country's political and social institutions (Levy and Spiller, 1995). Under dictatorship systems where there are no independent executive, legislative and judiciary units, predation by the government agent is easier than in a democracy. But the risk of appropriation through changes in the rules and taxing can arise in a democracy also. In a democracy, if there is room for discretion due to ambiguity of the rules and there are high transaction costs of legal process, and if elections, which change power among political parties, determine the status of property rights, political risk escalates to the level of that under a dictatorship.

The degree of political risks differs across different industries depending on the extent of sunk costs of investment, which means that exit from a country involves writing off a large amount of investment. In the case of large infrastructure projects, for example, which are natural monopolies, MNCs have to get into contracts with the government, which in turn provides a possibility for opportunism on the part of local government when a MNC invests huge sunk costs and gets locked in locally. If the prevailing institutions in a specific country increase the transaction costs of contracts, it will discourage FDI in these industries. Transaction costs are higher when it is highly costly to understand and anticipate contingencies and to formulate contracts in a clear manner.

2-3-3-3 Empirical Evidence:

While there has been much research on the "general" economic determinants of FDI, empirical research on the effects of institutional factors on FDI, especially with respect to developing countries, is rather limited. Nigh (1985) analyzed foreign direct investments in manufacturing in 24 countries, including 11 developing countries, during 1954-1975 by multinational corporations based in the United States. He found that for the developing countries in particular FDI flows were related to internal conflicts such as riots and civil war. Whether investors from other industrial countries are as averse to political instability is unclear.

Several more recent studies of FDI determinants mention the potential importance of institutional variables, yet they fail to analyze them. For instance, Tsai (1994) notes the importance of qualitative factors such as political stability, but does not include them in the empirical analysis on the grounds that such variables are difficult to define and quantify.

Lucas (1993) develops an innovative theoretical model based on the derived demand for foreign capital of a profit-maximizing, multiple-product monopolist. Two versions of the model are estimated, a basic form containing only the relative price and other endowment type variables and an extended version that also includes political risk and the regulatory framework[14] and dummy variables representing different regime types. The basic model is estimated in logarithmic and linear form separately for each country with time series data for 1960-1987, whereas the extended model is

---

[14] The relative magnitudes of international reserves and strikes have been used as proxies for political risks.

estimated by pooling the data for several countries of the sample. For four of the countries, the regime change dummy variables have significant effects, indicating that FDI increases with favorable political environment and vice versa.

In his study, Akhter (1993) used a composite measure of political instability, originally developed by Gupta (1990)[15]. Using a pooled cross-section data for 12 countries over a four-year time period, Akhter estimated the parameters of the model. The findings suggest that political instability is significant and negatively related to foreign direct investment.

Among the more recent studies which have attempted to incorporate institutional factors such as host-country political risk and corruption are Wheeler and Mody (1992), Hines (1995), Wei (1997) and Gastanaga et al. (1998). Wheeler and Mody used a composite measure of risk based on thirteen indicators, including corruption, but did not find the hypothized negative effect of risk on FDI. Hines, on the other hand, used only a corruption index, along with GDP growth and other factors, to show that FDI from United States grew more rapidly in less-corrupted developing countries. Wei (1997) examined two-year FDI flows from fourteen OECD countries to forty-five host countries and focused on the effects of corruption. For each of several specifications of the model, two different measures of corruption are shown to have significant negative effect on FDI.

---

[15] This measure captures the different dimensions of political instability, such as the political legitimacy of the government, violence against the regime, violence by the regime and violence within the regime. For more details see Gupta (1990).

Finally, Gastanaga et al. utilized pooled cross-section and time series data for 49 developing countries over the period 1970-1995 to examine the effects of several policy and institutional variables, including exchange rate distortions, contract enforcement, nationalization risk, bureaucratic delay and corruption. They conducted a multivariate analysis of the effects of each of those variables on FDI flows. Despite the methodological problems of estimation, especially the collinearity problems and relatively severe limitations for some of the relevant measures, their results strongly demonstrate the relevance and significance of many of the institutional factors for FDI inflows.

2-4 Concluding Remarks:

The discussion in the previous sections has shown that the explanation of magnitude and pattern of FDI inflows into developing countries requires an analysis of multifaceted sets of factors that reflect differences not only between those countries and developed countries, but also among developing countries themselves. They differ in the level of economic development and human capital, natural resource endowments, infrastructure condition, market structures and mechanisms in addition to political and legal institutions. Those differences will not only determine whether FDI will take place or not, but in fact also explain the rationale behind the choice multinationals make among alternative modes of entry, licensing or exports as compared to direct investment. They also affect the pattern of FDI, that is, the distribution of FDI among different sectors in the host country.

In this concluding section, we try to show how differences in the endowment of the set of determinants (the supply side, the demand side and the institutional

factors) can generate different patterns of FDI in developing countries. For this matter, let us consider five major patterns of FDI projects: *low-tech* manufacturing like garments and shoes; *high-tech* industries such as electronics and semiconductors; *information goods*, particularly software and books; *infrastructure* projects, for example telecommunications and electricity; and *resource extraction*, especially oil industries.

If a developing country, A, has a reasonably effective intellectual property regime, low-cost skilled labor and a growing local market, then country A becomes highly attractive for FDI in the high-tech industries. This is because MNCs can take advantage of low-cost skilled labor to serve the local market as well as the world market. If country A lacks the effective intellectual property rights regime, high-tech FDI probably will not take place in this country. If FDI does come into country A's high-tech industries sector, it will be mainly for utilizing low-cost manpower for serving home and other markets through exports rather than serving the host country market, that is, pure vertical FDI.

Now, let us consider the case of country B that has all necessary institutional conditions of property rights and credible policy commitment, but lacks a skilled work force. It will attract FDI mostly into low-tech industries. In a country that lacks minimum labor skills, that is, poor human capital, but has good intellectual property regime, production of knowledge intensive goods is not viable. If country B has a sufficiently large domestic market for differentiated goods, though, then serving its market with exports is more viable than FDI unless MNCs decide to invest substantially in training and education of local manpower. At this point, MNCs have

to measure the trade-off between the costs of investing in the training and the benefits of locating production closer to the market. The benefits of location are again a trade-off between costs of transportation, tariff barriers and costs of multi-plant operations.

Another interesting case could be a developing country, say country C, which has the legal infrastructure and an intellectual property rights regime in place, but the extent and honesty of law enforcement by the local governments is either missing or rather weak. In such case, MNCs might need to invest in the enforcement costs and cooperate with the local enforcement agencies, especially if the local market is highly attractive. Another possibility is that the host country's government, realizing the importance of FDI, will act voluntarily. A good example for this case is the Indian software industry. The Indian law offers effective protection of copyrighted material based on the Indian copyright act of 1957. This act was revised in 1995 to make it more appropriate for modern regulations in the field. In recent years, India's software industry association in cooperation with the government agencies has started to undertake the enforcement of the act (Ghemawat et al., 2000). The growing importance of the domestic software industry provides an incentive to the government to undertake enforcement in an effective manner. Consequently, it provides the necessary institutional conditions for MNCs to invest in India's software industries for the global market, serving the growing local market (Patibandla and Petersen, 2001).

As for FDI in infrastructure projects, it is all about the favorable institutional, legal and regulatory frameworks that a host-country government can establish, guarantee and commit itself to throughout the fairly lengthy term of these projects. Although developing countries have witnessed remarkably rapid growth in the FDI

inflows to this relatively new industry[16], these projects have been beset with difficulties. These difficulties result primarily from a lack of preparation by governments, trying to attract these new types of investment without having put in place an appropriate policy framework. Institutional structures that could effectively resolve impediments and provide clear guidelines are not available. Legal frameworks tend to address traditional public sector responsibilities and do not accommodate many investor concerns. Regulatory environments either do not exist or are unsatisfactory in ensuring investors that their future operating environment will be sufficiently reliable.

In his comprehensive study, published as a Foreign Investment Advisory Service[17] occasional paper, Sader (2000) pointed out the following as major obstacles foreign investors were blocked by when investing in infrastructure in developing countries:

- Existing state-owned rivals and government biases in favor of official funding or local investors,
- Conflicting government authorities,
- Political and social protest against individual projects,
- Corruption, of course,
- Governments reneging on contracts signed by previous administrations, and

---

[16] Infrastructure services were generally believed to be public goods, with governments responsible for providing them. However, insufficient investments, growing pressures on government budget and the concern about inefficient service provision altogether gave rise for the private sector, domestic and foreign, to become a key player in providing finance as well as operational expertise in various infrastructure areas.

[17] The Foreign Investment Advisory Service (FIAS) is a joint facility of the World Bank and the International Finance Corporation (IFC) that helps developing and transition-economy governments design initiatives to attract foreign direct investors.

- Existing legislation impending effective private sector participation.

Accordingly, the successful implementation of FDI in infrastructure requires a careful review of the business environment for such investments and, if necessary, reform of the policy framework underlying it. New institutional structures often need to be designed, laws must be amended or new legislation created and adopted and regulatory oversight functions must be established and strengthened. Most important, the organization of the existing service provision should be restructured to allow for effective participation and competition by private sector operators.

And finally for resource extraction FDI, world commodity prices are obviously important determinants, particularly since resource-seeking FDI are typically export-oriented rather than for the domestic host market. The host country endowment in the relevant specific natural resource is the most important factor in attracting foreign investors. However, the existence of well-developed infrastructure facilities such as roads, ports and telecommunications would be a plus to make certain host countries more attractive.

CHAPTER THREE

FOREIGN DIRECT INVESTMENT INFLOWS AND GEOGRAPHY: A REGIONAL PERSPECTIVE

3-1 Introduction:

Since the beginning of the 1990s, FDI inflows in the developing countries have increased noticeably. According to UNCTAD (2003), these FDI inflows in 2000 reached $246 billion, though their share in world FDI inflows declined for the second year in a row to 18 percent, compared to the peak of 41 percent in 1994. Unfortunately, global FDI inflows went down by 41% in 2001, then fell by another fifth in 2002 to $651 billion, that is, just about half its level in 2000. This in turn caused FDI inflows to developing countries to decline for two consecutive years, down from $209 billion in 2001 to $162 billion in 2002, 34% less than its level in 2000.

Nevertheless, the developing countries' modest, yet diminishing, share in the world FDI inflows is distributed among them unevenly. The majority of these inflows are concentrated in a small number of countries mostly in South, East and South-East Asia, besides Latin America. In 2002, developing Asian countries received 55% and Latin America and the Caribbean 35%, compared with only 6% and 3% for African countries and the Middle East and North Africa (MENA) countries, respectively (UNCTAD, 2003).

In the previous chapter, major determinants of FDI inflows to developing countries were discussed with the aim of developing a conceptual framework that integrates institutional aspects into market supply and demand factors so as to help explaining the ongoing trends and patterns of the geographical and sectoral distribution of FDI inflows among developing countries and regions. Within this framework, this chapter addresses the changing trends in FDI inflows and studies the recent geographical distribution of FDI inflows among developing regions with an emphasis on MENA region as compared to major FDI-recipient regions (South and East Asia and Latin America).

3-2 History: Changing Trends in World FDI Flows:

As a worldwide phenomenon, FDI began in the late nineteenth and early twentieth centuries; however, for decades it continued to make up only a small portion of foreign capital flows. In 1914, for example, 90% of all foreign investment flows took the form of portfolio investment (Dunning, 1970). Over time, the composition of foreign investment was gradually shifting, and by the end of the 1920s, about a quarter of such flows took the form of FDI. The collapse of the world monetary system in 1930 and the resulting collapse of portfolio investment following World War I and the Great Depression contributed largely to such shift. Despite the sharp decline in the magnitude of foreign investment in general during the interwar years, FDI proved to be more resilient and recovered slightly in the late 1930s, continuing to expand in the post-World War II years.

The increase in FDI flows to developing countries was more prominent after the l960s. They rose from $2 billion yearly on average in the early 1960s to an average

of around $7 billion a year between 1974 and 1982 (Amirahmadi and Wu, 1994). Between 1973 and 1982, and after the oil shock of 1973-74, private loans accelerated and became the largest form of foreign capital flows to developing countries. In 1973, private borrowing was only $16.3 billion, and it reached a peak of $83.5 billion in 1981, that is, more than a 400% increase.

However, the situation changed dramatically after 1982 due to the Latin American debts crisis originating in Mexico. Thereafter, the volume of private borrowing by developing countries declined sharply at a faster rate than its expansion in the 1970s. In fact, the 1980s brought a significant change in the magnitude of FDI inflows to developing countries; they finally turned into double-digit figures. Between 1982 and 1992, developing countries' inward FDI grew by 52% from $19.8 billion to $30.1 billion, with a yearly average above $17 billion. This changing trend reflected the increased share of FDI in total private foreign capital flows to developing countries after 1982, although its absolute volume has remained more or less constant. Yet this trend of FDI flows to developing countries seems less significant when viewed in the context of the global FDI flows. Both developed and developing countries experienced increased FDI flows in the 1980s, but the share of developing countries in the world FDI flows has in fact declined.

The uneven distribution was an evident feature that characterized FDI inflows distribution among developing countries and regions in the 1980s. During that decade, specifically between 1983 and 1990, Asian countries proved to be the largest destination for FDI, receiving a total of $89.61 billion which represented more than half of FDI inflows to all developing countries. The Latin American countries

followed Asia with a share of 23.7%, amounting for $38.21 billion FDI inflows. The Middle East received a share of only 12.3% while Africa had minimal 6.2%. FDI inflows were also concentrated in a small number of developing countries. The largest recipients were Singapore (13%), China (11%), Brazil, Mexico, Saudi Arabia and Hong Kong, (6% each), Malaysia and Egypt (5% each), and together having over 58.8% (Amirahmadi and Wu, 1994).

Within each region, in addition, FDI inflows in the same period were also distributed highly unequally. Argentina, Brazil, Colombia and Mexico received 81.3% of Latin America inward FDI. Eight Asian countries, namely China, Hong Kong, Indonesia, Malaysia, Singapore, South Korea, Taiwan and Thailand, together accounted for more than 84% of total FDI inflows to the region. Even in Africa, Nigeria alone accounted for 46.1 %, whereas Egypt, Saudi Arabia and Turkey together received nearly 90% of FDI flows to the Middle East.

3-3 Current Regional Distribution of FDI Inflows:

As table 3-1 shows, world FDI inflows in 2002 fell for the second year in a row to $651 billion, that is, half the peak of $1394 billion in 2000. As a result, inflows to developing countries continued to decline from $246 billion in 2000 to $209 billion and $162 billion in 2001 and 2002, respectively. This downturn in global FDI, the most significant of the past three decades, was attributed to three key reasons: the weak economic growth world wide, tumbling stock markets which contributed to a plunge in cross-border mergers and acquisitions (M&As) and institutional factors such as the winding down of privatization in several countries (UNCTAD, 2003).

Table 3-1: Distribution of World FDI Inflows, 1999-2002

Years / Countries	1999		2000		2001		2002	
	$ Billion	%	$ Billion	%	$ Billion	%	$ Billion	%
World	**1079.1**	**100**	**1394**	**100**	**823.8**	**100**	**651.2**	**100**
Developed Countries	824.6	76	1120.5	80	589.4	72	460.3	71
Developing Countries	229.3	21	246.1	18	209.4	25	162.1	25
South, East and South-East Asia	105.3	9.8	138.7	9.9	97.6	11.8	88.6	13.6
Latin America and the Caribbean	108.3	10	95.4	6.8	83.7	10.2	56.0	8.6
Central and Eastern Europe	25.1	3	26.4	2	25	3	28.7	4

Source: Adopted from UNCTAD, World Investment Report 2003.

Table 3-2: Regional Distribution of FDI Inflows to Developing Countries, 1999-2002

Years / Region	1999		2000		2001		2002	
	$ Billion	%	$ Billion	%	$ Billion	%	$ Billion	%
Developing Countries	**229.3**	**100**	**246.1**	**100**	**209.4**	**100**	**162.1**	**100**
South, East and South-East Asia	105.3	45.9	138.7	56.4	97.6	46.6	88.6	54.7
Latin America and the Caribbean	108.3	47.2	95.4	38.8	83.7	40.0	56.0	34.6
Africa†	8.7	3.8	5.4	2.2	13.3	6.3	7.5	4.6
MENA††	3.6	1.6	3.8	1.6	10.0	4.8	5.6	3.4

Source: Adopted from UNCTAD, World Investment Report 2003.

† Excluding North African countries, namely: Algeria, Egypt, Libya, Morocco, Sudan and Tunisia

†† Middle East and North Africa countries include the above mentioned North African countries in addition to West Asian countries except for Cyprus.

On average, South and East Asia along with Latin America and the Caribbean regions received more than 90 % of FDI inflows to developing countries during the last three years, with the former dominating the picture and getting 53% and the latter receiving 37%, compared with 4% and 3% for Africa and the MENA regions, respectively (see table 3-2). Furthermore, as described in table 3-3, the top five recipients of FDI inflows to developing countries (China, Hong Kong, Brazil, Mexico and Singapore) captured almost two thirds of the developing countries' total share in world FDI on average over the same period.

Table 3-3: Top Five Recipients of FDI Inflows to Developing Countries, 1999-2002

Country \ Years	1999		2000		2001		2002	
	$ Billion	% (Rank)	$ Billion	% (Rank)	$ Billion	% (Rank)	$ Billion	% (Rank)
Developing Countries	**229.3**	**100**	**246.1**	**100**	**209.4**	**100**	**162.1**	**100**
Brazil	28.6	12.5 (2)	32.8	13.3 (3)	22.5	10.7 (4)	16.6	10.2 (2)
China	40.3	17.6 (1)	40.8	16.6 (2)	46.8	22.3 (1)	52.7	32.5 (1)
Hong Kong	24.6	10.7 (3)	61.9	25.2 (1)	23.8	11.4 (3)	13.7	8.5 (3)
Mexico	12.9	5.6 (5)	15.5	6.3 (4)	25.3	12.1 (2)	13.6	8.4 (4)
Singapore	13.2	5.8 (4)	12.5	5.1 (5)	10.9	5.2 (5)	7.7	4.8 (5)
Total	**119.6**	**52.2**	**163.5**	**66.4**	**129.3**	**61.7**	**104.3**	**64.3**

Source: Adopted from UNCTAD, World Investment Report 2003.

In the following two sub-sections, FDI inflows to South and East Asia and Latin America regions will be analyzed in turn. Then later in this chapter, inflows to the MENA region are discussed in more details.

3-3-1 FDI Inflows to South and East Asia:

As for South and East Asia countries, the world's largest developing region in terms of population and GDP, despite the slump in global FDI flows, their share of those flows rose to 14% in 2002, compared with 10% during the FDI boom years of 1999–2000 (table 3-1). The region's share of FDI flows to developing countries in 2002 also rose to 55% from 47% in 2001 (table 3-2). On the basic economic determinants of inward FDI, this region's total and per capita GDP are higher than any other developing region, making it more attractive for market-seeking FDI. Its higher literacy and education rates suggest that its labor is more skilled, making it more attractive to efficiency-seeking investors. In addition, this region indeed is one of the most rapidly-liberalizing host regions for FDI, making more national policy changes in a direction favorable to foreign investors in 2002 than any other region (UNCTAD, 2003).

In earlier decades, the United States and European countries dominated the FDI activities in the region. However, Japan emerged as major investor in the 1970s, and then the Asian Newly Industrialized Economies (NIEs)[18] started to play a significant role by the second half of the 1980s. In fact, both the Asian NIEs and the ASEAN[19] have benefited significantly from these shifts. The Asian NIEs have been the main recipients of the surge of Japanese outward FDI. In turn, the ASEAN-4

---

[18] Newly Industrialized Economies: Hong Kong, Singapore, South Korea and Taiwan.

[19] The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967 in Bangkok by the five original Member Countries, namely Indonesia, Malaysia, Philippines, Singapore and Thailand.

(Indonesia, Malaysia, Philippines and Thailand) are the main destinations of the upsurge in outward FDI by Asian NIEs. This is concomitant with the flying-geese model of industrial upgrading that explains the evolutionary process of industrial development as introduced by Ozawa (1992, 2001 and 2003). The flying geese model entails the relocation of production and FDI from countries at a higher level of economic development to those at lower levels, resulting in more efficient use of production factors, higher levels of industrialization and economic growth for both groups. Recipient countries utilize their surplus labor and accumulated capital, technology and management skills to advance their industrialization. Investing countries, on the other hand, redirect excessive labor toward more sophisticated industries, thereby moving to an even higher level of industrialization.

During the pre-industrial period, FDI in the region was concentrated in raw material and recourse-based manufacturing[20]. This was followed by a spell of tariff-jumping FDI brought by the import-substitution development strategy restrictions in the 1960s and 1970s of the last century. The revocation of import-substitution policy in the Asian NIEs, followed by the ASEAN-4, and the adoption of outward-oriented development strategies based on export-promotion policies has encouraged investment geared towards export production particularly, export-platform investment. Consequently, relative to primary and tertiary sectors, the manufacturing sector attracted most of the export-oriented FDI inflows. The sectoral distribution of FDI follows the ladders of economic development. For instance, the service sector

[20] The exception was FDI in Singapore, which was directed largely to manufacturing and to commerce, finance and transport since it lacked natural resources and an agricultural base.

dominates in the Asian NIEs, while the manufacturing sector dominates in most of the remaining countries, especially ASEAN countries.

China is the largest recipient of FDI inflows in the developing world. Its giant domestic market, strong economic growth, increasing export competitiveness and membership in the WTO have all increased foreign investors' interest in locating operations in that country. Rapid growth in China has increased the local demand for consumer durables and non-durables, such as home appliances, electronics, automobiles, housing and leisure. This rapid growth in local demand, as well as competitive business environment and the well-developed physical infrastructure, has attracted many market-seeking investors. It has also encouraged the growth of many local indigenous firms that support manufacturing. As for FDI attitudes, policies and procedures, China has more FDI-friendly policies, easier FDI procedures and decisions can be taken without unnecessary bureaucratic delays. In addition to a large pool of skilled and semi-skilled labor, China has more flexible labor laws, a better labor climate and better entry and exit procedures for business. Finally, China provides the foreign firms with legal property rights protection system that goes back to 1979.

This set of determinants endowment shaped the composition of inward FDI flows to China such that it become a key center for hardware design and manufacturing in information and communication technology by major electronics MNCs such as Acer, Ericsson, General Electric, Hitachi Semiconductors, Hyundai Electronics, Intel, LG Electronics, Microsoft, Motorola, NEC, Nokia, Philips, Samsung Electronics, Sony and Toshiba (UNCTAD, 2003).

Another key factor explaining the FDI "phenomenon" in this region is the steps taken by countries in the region unilaterally, bilaterally and collectively to enhance their investment policy frameworks and support their regional integration process. In 2002, India announced a plan to allow foreign companies to own up to 74% equity in print media business. Indonesia declared year 2003 as the "Indonesia Investment Year," introducing the "one roof service" arrangement that will expedite investment approvals for foreign investors, simplify procedures and improve the coordination of various agencies, including regional governments. Bilateral treaties have further strengthened the region's policy framework. By the end of 2002, countries in the region were party to roughly 1000 BITs (UNCTAD, 2003). Bilateral free trade agreements have also been increasing. They contain investment provisions, underlining that investment has become a key consideration in economic cooperation. For example, the Republic of Korea–Chile and the Singapore–United States free trade agreements contain a range of investment provisions.

The regional arrangements, in addition, provide assurances of market access, involve deeper tariff-cutting programs on a wide range of products, address non-tariff barriers and facilitate easier sourcing of production inputs and resources. ASEAN, for example, provides a regional market with more than 500 million people, a combined GDP of $737 billion and an internal tariff rate of no more than 5%. ASEAN countries are also integrating through the ASEAN Investment Area Agreement. FDI flows to the ASEAN have increased steadily, particularly after the signing of ASAN Free Trade Agreement (AFTA) and until the 1997–1998 Asian financial crisis. The ASEAN industrial cooperation scheme encourages MNCs to establish regional production

networks[21]. Such regional production networks attract more efficiency-seeking FDI since MNCs, particularly in the automobile and automotive components industries as well as the electronics industries, rush to take advantage of a regional division of labor and production upgrading through network operations. Major multinationals operating in ASEAN countries are Honda Motor Co, Toyota, Nissan, Ford, Isuzu Motor Co, Samsung Corning, Samsung Electro Mechanics and Sony Electronics (for more details, see UNCTAD, 2003, p. 51). ASEAN countries collectively are taking steps to promote FDI to the region by, for example, holding investment fairs together and organizing an ASEAN Business and Investment Summit in October 2003. Under the ASEAN Investment Area Agreement, the ASEAN countries have phased in the Temporary Exclusion List of manufacturing sectors on 1 January 2003, opening more industries and granting national treatment to ASEAN investors.

3-3-2 FDI Inflows to Latin America:

For the third consecutive year, FDI inflows going to Latin America and the Caribbean decreased in 2002, falling by a third to $56 billion, the lowest since 1996 (UNCTAD, 2003). Despite this trend, in year 2002 the region received 35% of the total FDI inflows to the developing courtiers and has always been the second largest recipient of those inflows after East Asian countries (table 3-2). The decline was concentrated in the services sector, especially in the South American countries where MNCs had been attracted originally by strong privatization activities, the deregulation of telecommunications, utilities and banking. FDI flows into manufacturing were

[21] Several empirical studies at the firm level suggest that the ASEAN Free Trade Agreement (AFTA) has influenced MNCs' decisions to invest in the region, especially in the automotive and electronics industries (UNCTAD, 2003).

similar to those in 2001, as were flows into natural resources, with one exception, Venezuela, where political instability affected flows to the oil industry.

This downturn trend, by and large, can be attributed to currency devaluations, political uncertainties and rivalry from other lower-cost developing countries. Currency devaluations, especially in Argentina, Brazil and Venezuela, affected market-seeking FDI since this reduced markets substantially in dollar terms and consequently the profitability of foreign affiliates. Devaluations also increased the debt burden of these affiliates, denominated in dollars, relative to their revenues earned in local currency. In addition, foreign investment in infrastructure, initially promoted by privatization, was deterred by the effects of the devaluation in the first place and the unfavorable regulations created by a lack of political support or direct opposition. Competition was evident from China and other lower-cost countries as export platforms to the United States. According to the Comisión Nacional de la Industria Maquiladora de Exportación, 60% of the plants that closed in 2002 moved to Asia; the rest relocated to Central America. Among different sectors, electronics was affected most; Canon relocated its production from Mexico to Thailand, and so did Philips to Vietnam and China (UNCTAD, 2003).

The three largest economies of Latin America, Argentina, Brazil and Mexico, have been constantly receiving over 80% of the total inward FDI to the region since the beginning of the 1990s. As table 3-3 demonstrates, Brazil and Mexico have been among the top five recipients of FDI inflows to developing countries as a whole for the last four years. However, between 2000 and 2002, FDI inflows to Brazil fell by 49%. This trend began after the 1998 devaluation and continued amidst the economic

uncertainty of the past two years. Brazil's automobile industry has suffered from weak demand in MERCOSUR[22], but the devaluation, combined with high FDI in some of the most modern plants in the world, increased the industry's competitiveness. Brazilian automobile exports rose by 45% in 2002, and now they are directed more towards NAFTA, taking advantage from a recent agreement that reduces tariffs on trade in automobiles between Brazil and Mexico (UNCTAD, 2003). Ford, Toyota and Volkswagen have all increased their investment in Brazil to export outside MERCOSUR. On the other hand, since the second part of the 1990s Brazil emerged as the largest recipient of infrastructure FDI flows worldwide due to a sizable privatization program that involved the sell-off of state-owned entities, especially in telecommunications and electricity industries. During 1998 alone, the sale of a series of large fixed-wire and cellular telecom operations in Brazil generated nearly $20 billion, more than 68% of Brazil total FDI inflows in that year (Sader, 2000; UNCTAD, 2003).

Mexico has always received substantial FDI since NAFTA came in place, mainly from the United States and largely concentrated on the export-oriented manufacturing for the United States market. In year 2002, with $13.6 billion, representing about 8% of FDI inflows to developing countries, Mexico was the fourth largest recipient of FDI in the developing world and the second in Latin America and the Caribbean region. The combination of better market access and location

---

[22] In December 1994, Argentina, Brazil, Paraguay and Uruguay signed the Protocol of Ouro Preto, implementing the Southern Common Market, known widely as MERCOSUR. Over the following years, Chile and Bolivia have entered into agreements with MERCOSUR as well.

advantages such as cheap labor attracted more MNCs to locate manufacturing activities in Mexico, especially in areas close to the United States border. The integration of Mexico into the production system of the United States, already present with the maquiladoras, the United States-owned assembly plants that were built in Mexico particularly to take advantage of low labor cost, was extended and deepened. NAFTA also consolidated policy reforms that started in the mid 1980s and opened the Mexican economy to foreign investors.

The improved performance of the Latin America and the Caribbean countries in attracting FDI since the beginning of 1990s was basically due to the waves of reforms those countries witnessed, especially regarding the perception and treatment of foreign investors. Macroeconomics stabilization, trade liberalization, privatization programs, deregulations of policies regarding private investment and regional integration all contributed to creating a favorable climate for foreign investments. Aside from the current trend of world FDI, those efforts resulted in an eightfold increase of the level of FDI inflows into the region compared with the end of the 1980s, reflecting that the confidence of foreign investors has recovered after going through the difficult decade of the post debt-crisis.

A particular noteworthy outcome of the change in investment climate is the change in the pattern of FDI throughout the region[23]. Prior to the FDI liberalization, the majority of FDI targeted the manufacturing sector and aimed at penetrating highly protected domestic markets, that is to say, horizontal FDI. By the 1990s, privatization

---

[23] In the 1980s, the majority of FDI inflows to the region, especially larger recipients, were mainly sustained by debt-equity swaps.

and the opening up of industries previously closed to foreign investment induced a much higher growth of investment in services sector. Argentina, Chile, Mexico in the first half of the 1990s and then Brazil in the latter half, as mentioned earlier, owed their growth in inward FDI to their privatization programs especially in the telecommunications and electricity industries. Out of $138.3 billon, the sum of FDI inflows directed to infrastructure in developing world during 1990-1998, Latin American countries received $78.8 billion, more than half that is (Sader, 2000).

Besides the FDI liberalization policies, regional integration agreements, particularly NAFTA and MERCOSUR contributed in forming the magnitude, trend and pattern of FDI inflows to the region; however, the effects of those regional arrangements are not as clear as it was in the case of Asian countries. Since Latin American countries have been changing their regulatory frameworks in favor of FDI unilaterally, the effects of bilateral and regional agreements are hard to assess separately. The proliferation of bilateral agreements further complicates the assessment of regional ones. Mexico, for example, has signed bilateral agreements with Bolivia, Chile, Costa Rica, the EU member countries and Nicaragua, and is negotiating one with Japan. Chile has bilateral agreements with Canada, Mexico and the United States and associate member status with MERCOSUR.

The presumption is that NAFTA benefited its member economies in terms of international trade in goods and services, but less is known about its impact on FDI, for members and non-members (UNCTAD, 2003). An increase in FDI flows to the three member countries has been observed since the late 1980s, but it is unclear to what extent this was due to NAFTA. FDI flows, declining over 1988–1993, rose

rapidly after 1994, peaking at $383 billion in 2000, before falling back to $64 billion in 2002. The gains appeared to come primarily from FDI into the United States, not to Canada or Mexico, however. Still, Mexico benefited to a great extent from integrating the Mexican automobile industry into an already deeply-integrated North American automotive industry[24].

Although FDI boomed in both Argentina and Brazil after the MERCOSUR agreement came into force, it was mainly because of macroeconomic stabilization, openness to foreign investors and privatization transactions. FDI into the smaller members of MERCOSUR, namely Paraguay and Uruguay, has not risen substantially. MNCs operating in MERCOSUR countries might benefit from the flexible exchange rates and the quality and excess capacity of plants, especially in the automobile industry, turning Argentina and Brazil into export platforms for the rest of the region and beyond (UNCTAD, 2003).

Finally, negotiations are ongoing for a Free Trade Area of the Americas (FTAA), meant to cover all states in the region, with one exception, Cuba. However it is too early to evaluate its implications for FDI flows. For Mexico, however, there is concern that its current privileged access to the United States market may be diluted inside the FTAA, even though companies based there will also gain access to other markets. As stated earlier, such agreement can be expected to make the regulatory

---

[24] The Canadian and United States automobiles and automotive components, the most important industry in North America accounting for between a third and a half of the intra-regional trade, had been integrated since the 1965 Auto Pact.

framework for FDI in individual countries more transparent and simplify overlapping sub-regional and bilateral agreements.

3-4 The Middle East and North Africa (MENA) Region:

The Middle East and North Africa (MENA) region discussed in this chapter comprises Arab countries in North Africa (Algeria, Egypt, Libya, Morocco, Sudan and Tunisia) and West Asia (Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Occupied Palestine Territory, Qatar, Saudi Arabia, Syria, United Arab Emirates and Yemen), in addition to Iran and Turkey. With a population of nearly 400 million and a notable strategic position between the North and the South, the MENA region constitutes a distinct region of the developing world. Despite obvious differences within and between its countries, MENA region is cemented by a number of common characteristics related to its distinctive climate, ecology, history, language and culture, which permeate its social fabric, development aspirations and quest for a meaningful future.

Especially after September 11th, MENA region's future social, economic and political development has become a matter of crucial importance to the world and to the United States in particular; it is now a national security concern and a subject no candidate can afford to overlook in the course of the upcoming presidential elections[25]. This is one reason why MENA region was chosen to be the focus of this chapter and the main theme of this dissertation. Another reason is the noticeably poor performance

---

[25] This can also be seen in the "U.S.-Middle East Partnership Initiative" that will provide a framework and funding of more than $1 billion for reform programs within the MENA region in areas such as: ***economic reforms*** and private sector development; ***political reforms*** related to democracy enhancement, strengthening civil society and human rights protection; and finally ***improving education*** through refining school curriculums, promoting the use of modern technology and enhancing the educational opportunities of women.

of the region as an attractive destination for foreign investors. While portfolio investment is virtually nonexistent because equity markets are undeveloped, in 2002 the MENA region as a whole received less than one-half the foreign direct investment inflows to one country as small as Singapore (compare figures in tables 3-2 and 3-3)! Finally, the existing literature on FDI inflows, their determinants and influence seems to be biased toward countries with high levels of those flows. This could partially explain the scarcity of studies dealing with FDI inflows directed to the MENA region despite the potential significant role foreign direct investment can play in promoting economic growth in the region.

3-4-1 MENA Region Economic Overview:

The MENA region benefited greatly from the wealth created by the sharp increase in oil prices in the 1970s. In addition to the explosion of investment and growth in the oil-exporting countries, non oil-exporting countries enjoyed a similar rise in workers' remittances and increased development assistance that led to a remarkable improvement in living standards throughout the region. In addition, financial assets were accumulated abroad as overall national savings exceeded investment, especially in the oil-producing countries. The 1980s decade was a relatively disappointing one for developing countries as a group; the MENA region was not an exception. As oil prices and production dropped, the boom period waned, prompting a slowdown and, in many cases, a decline in growth rates and a significant increase in consumer price index, leaving the governments burdened with deficits and debt. Although the region still dominates the global oil market, the benefits from oil that had brought about a marked improvement in living conditions in the 1970s and

early 1980s failed to generate a sustained growth dynamics that are not dependent on oil market fluctuations or to bring about greater regional economic integration. Even though there is a wide gap between the richest and the poorest countries in the region[26], most of the MENA countries share a common cultural and institutional heritage, along with common economic and social challenges; among them are relatively high rates of growth of population and labor force, slow economic growth and most importantly, the region's inability to take advantage of increasing globalization or face its challenge.

For the MENA region, the challenge of globalization is fourfold. Firstly, the nature of competition is changing from the conventional exclusive invention and innovation to competition for process-technology that includes organization, management, production systems, inventory control and marketing. Secondly, dynamic industries are no longer dominated by natural resources, oil and petroleum products in the MENA region case; instead, key-growth sectors become manufacturing industries based on electronics, new materials and biotechnology. Thirdly, the revolution in information and communications spreads out at an amazing pace and has implications such as reducing transaction costs and the ease with which trade, finance and production decisions can be taken. For the MENA region, however, over the last ten years, the expenditures on information and communications technology as a ratio to GDP in Egypt and Turkey, the only MENA countries for

---

[26] In fact, all different income groups, according to the World Bank classification, are represented in the region! In 2001, with an average of $2,220, per capita GDP levels range from as high as $27,900 for Qatar, to $18,270 for Kuwait, $8,460 for Saudi Arabia, $4,010 for Lebanon, $1,750 for Jordan, to as low as $450 for Yemen (World Bank, 2003).

which this data is available, is 2% and 3% on average compared to 5% for Brazil, and 7% and 8% for Hong Kong and Singapore, respectively (World Bank, 2003).

Finally, international trade has been growing at a much faster pace than world output and become the primary engine of GDP growth for emerging economies, fueled by the demolition of trade barriers and the operations of multinational corporations. Trade performance of the MENA region is below that of other regions. While oil exports continue to be a substantial source of foreign exchange earnings for oil producers, the relative importance of such exports has declined since 1985. The growth of non-oil exports varied during this period but, in general, was slower than for developing countries as a group. As a result, the MENA region's share of the world export market fell by more than half between 1980 and 2000 (the results are the same including or excluding oil exports), whereas the developing countries' share rose slightly during this same period (Abed, 2003).

Despite those challenges, it is widely accepted that countries that undertake policy and institutional reforms in areas such as trade, the financial sector, and governance have better chances to benefit from increased international trade and capital flows associated with integration to world economy and are therefore likely to experience higher growth rates. That is maybe why some MENA countries moved ahead with macroeconomic and structural reforms, mainly IMF-supported reform programs, during the late 1980s and early 1990s. The common components of those programs include fiscal reforms, such as implementation of the value-added tax, phasing out of subsidies and expenditure-management reform, in addition to the introduction of indirect monetary policy instruments, liberalization of the trade and

foreign direct investment environment and introduction of some flexibility in exchange rate regimes. Those countries that did pursue reforms, such as Egypt, Jordan, Morocco, Tunisia and Turkey, enjoyed the region's most rapid growth rates over the past two decades. However, the early optimism about the depth of the reform commitment of governments in the region has faded, and the expected impact on economic growth has not been fully realized. One reason may be that the reforms did not achieve a necessary critical mass or did not go deep enough to address long-standing structural rigidities and distortions.

3-4-2 FDI Inflows to the MENA Region:

The MENA region, despite some limited improvements, appears to be still lagging behind on its FDI performance within the context of dramatic changes taking place in this new world investment scene. Foreign Investment in a good number of countries, such as Iraq, Libya, Occupied Palestinian Territories, Sudan and Algeria in the first half of the 1990s has been frightened away by political turmoil and wars. Yet even for stable countries, despite their efforts loosening their restrictive regulations in favor of FDI, the share is still far below par (table 3-4).

Countries in the North Africa sub-region received roughly 75% of the total FDI inflows to the MENA counties on average for the period of 1999-2002. However, countries in the West Asia sub-region still enjoy most of the inward FDI stock, nearly 65% of the MENA entire stock on average between 1990 and 2001 (table 3-5).

Table 3-4: FDI inflows to MENA countries, 1999-2002†

Country \ Years	1999		2000		2001		2002	
	$ Million	%	$ Million	%	$ Million	%	$ Million	%
MENA	**3 637**	**100**	**3 843**	**100**	**10 025**	**100**	**5 590**	**100**
North Africa	**3 569**	**98.1**	**3 125**	**81.3**	**5 474**	**54.6**	**3 546**	**63.4**
Algeria	507	13.9	438	11.4	1 196	11.9	1 065	19.1
Egypt	1 065	29.3	1 235	32.1	510	5.09	647	11.6
Libya	-118	- 3.2	-142	- 3.7	-101	- 1	-96[a]	- 1.7
Morocco	1 376	37.8	423	1.1	2 808	28	428	7.66
Sudan	371	10.2	392	10.2	574	5.73	681	12.2
Tunisia	368	10.1	779	20.3	486	4.85	821	14.7
West Asia	**69**	**1.87**	**719**	**19**	**4 559**	**45.4**	**2 044**	**36.6**
Bahrain	454	12.5	364	9.47	81	0.81	218	3.9
Iran	35	0.96	39	1.01	50[a]	0.5	37[a]	0.66
Iraq	-7[a]	- 0.2	-3[a]	- 0.1	-6[a]	- 0.1	-9[a]	- 0.2
Jordan	158	4.34	787	20.5	100	1	56	1
Kuwait	72	1.98	16	0.42	- 174	- 1.7	7	0.13
Lebanon	250	6.87	298	7.75	249[a]	2.48	257[a]	4.6
Oman	21	0.58	44	1.14	42	0.42	40[a]	0.72
Occupied Palestine Territory	19	0.52	62	1.61	11[a]	0.11	41[a]	0.73
Qatar	113[a]	3.11	252[a]	6.56	296[a]	2.95	326[a]	5.83
Saudi Arabia	- 780	- 21	-1 884	- 49	20	0.2	- 350[a]	- 6.3
Syria	263	7.23	270	7.03	205[a]	2.04	225[a]	4.03
Turkey	783	21.5	982	25.6	3 266	32.6	1 037	18.6
United Arab Emirates	- 985[a]	- 27	- 515[a]	- 13	275[a]	2.74	95[a]	1.7
Yemen	- 328	- 9	6	0.16	136	1.36	64	1.14

Source: Adopted from UNCTAD, World Investment Report 2003.

† FDI flows with a negative sign indicate that at least one of the three components of FDI (equity capital, reinvested earnings or intra-company loans) is negative and is not offset by positive amounts of the other components. These are instances of reverse investment or disinvestment. (UNCTAD, 2003, p. 232).
a Estimates.

With more than $25 billion in 2001, equivalent to almost 24% of FDI stock in the MENA region, Saudi Arabia remains the prime holder of this stock in the region. As table 3-6 shows, between 1999 and 2002, more than 90% of FDI net inflows to the MENA region were concentrated in only five countries, namely Algeria, Egypt, Morocco, Tunisia and Turkey. In the following sub-sections, individual cases of major FDI destinations in the MENA region will be analyzed in detail.

Table 3-5: FDI inward stock in selected MENA countries, 1990-2001

Country \ Years	1990		1995		2000		2001	
	$ Million	%	$ Million	%	$ Million	%	$ Million	%
MENA	**56 953**	**100**	**76 386**	**100**	**104183**	**100**	**108696**	**100**
North Africa	**16 903**	**29.7**	**26 300**	**34.4**	**38 082**	**36.6**	**43 191**	**39.7**
Algeria	1 355	2.4	1 465	1.9	3 441	3.3	4 637	4.3
Egypt	11 043	19.4	14 690	19.2	19 589	18.8	20 099	18.5
Morocco	917	1.6	3 032	4.0	6 758	6.5	9 566	8.8
Tunisia	7 615	13.4	10 967	14.4	11 545	11.1	11 667	10.7
West Asia	**40 050**	**70.3**	**50 086**	**65.5**	**66 101**	**63.4**	**65 505**	**60.3**
Iran	2 039	3.6	2 297	3.0	2 474	2.4	2 524	2.3
Jordan	615	1.1	627	0.8	2 258	2.2	2 358	2.2
Oman	1 723	3.0	2 210	2.9	2 501	2.4	2 543	2.3
Saudi Arabia	22 500	39.5	22 423	29.4	25 963	24.9	25 983	23.9
Turkey	11 194	19.7	14 977	19.6	19 209	18.4	17 521	16.1
United Arab Emirates	751	1.3	1 770	2.32	1 061	1.0	1 318	1.2

Source: Adopted from UNCTAD, World Investment Report 2003.

Table 3-6: Top recipients of FDI inflows to MENA region, 1999-2002

Country \ Years	1999		2000		2001		2002	
	$ Million	% (Rank)	$ Million	% (Rank)	$ Million	% (Rank)	$ Million	% (Rank)
MENA Countries	**3 637**	**100**	**3 843**	**100**	**10 025**	**100**	**5 590**	**100**
Algeria	507	13.9 (4)	438	11.4 (5)	1 196	11.9 (3)	1 065	19.1 (1)
Egypt	1 065	29.3 (2)	1 235	32.1 (1)	510	5.1 (5)	647	11.6 (5)
Morocco	1 376	37.8 (1)	423	1.1 (6)	2 808	28 (2)	428	7.7 (6)
Tunisia	368	10.1 (7)	779	20.3 (4)	486	4.8 (6)	821	14.7 (3)
Turkey	783	21.5 (3)	982	25.6 (2)	3 266	33 (1)	1 037	18.6 (2)

Source: Adopted from UNCTAD, World Investment Report 2003.

3-4-2-1 The case of Algeria:

Algeria was quite successful during the 1970s, attracting substantial FDI inflows with which it was the major destination of foreign investors in the MENA region. As table 3-7 indicates, those inflows, particularly from France, reached $303.9 million annually on average in the second half of the 1970s, up from about $145 million on average between 1970 and 1974. In spite of its exceptionally advantageous geographical location, its historically close links with Europe, its fairly well-developed physical and human infrastructure and its relatively high level of private fixed investment, Algeria was unsuccessful in attracting FDI during the 1980s as well as the first half of the 1990s. Starting in 1981, FDI inflows almost ceased; in fact, in the early 1980s there were two large disinvestments by French companies, and for the rest of the decade FDI inflows stagnated at insignificantly low levels.

Table 3-7: FDI inflows to selected MENA countries, 1970-1990†

Periods / Country	1970-74	1976-80	1981-85	1986-90
Algeria	144.55	303.90	-10.94	7.49
Egypt	2.77	40.70	200.51	173.20
Morocco	31.73	92.24	71.47	99.61
Saudi Arabia	18.85	85.07	137.38	195.76
Tunisia	22.70	102.39	118.66	79.07
Turkey††	57.8	32.8	81.6	388.2

Source: El-Rifai, 1993.

† Annual average in million U.S. dollars; 1990 prices.

†† Data for Turkey are calculated from: World Bank, 2003.

This lack of success by one of the largest and relatively more developed MENA countries can be attributed, by and large, to the economic slowdown accompanied by the political uncertainty Algeria witnessed over that period. First, the overall economic growth slowed to 2.6% a year compared with more than 7% yearly during the 1970s. Particularly after the 1986 oil price collapse, the balance of payments became a major bottleneck, with the current account balance moving from a surplus of 0.6% of GDP in 1980 to a deficit of 4.3% in 1989, and foreign debt accumulated rapidly with foreign debt service charges increasing from less than 27% of exports in 1980 to nearly 64% in 1991 (El-Rifai, 1993). Second and as important, starting in late 1989, the political situation in Algeria became increasingly unstable, unpredictable and volatile, turning ever more violent through the early 1990s. Together, this created a most unattractive climate for foreign investors.

Table 3-8: Algeria Inward FDI Indicators

Indicator \ Years	91-96†	1997	1998	1999	2000	2001	2002
FDI Inflows ($ millions)	63	260	501	507	438	1196	1065
FDI Inflows/ Gross Fixed Capital Formation (%)	0.5	2.4	4.0	4.3	3.8	8.6	8.1
Indicator \ Years	**1980**	**1985**	**1990**	**1995**	**2000**	**2001**	**2002[a]**
Inward FDI Stock ($ millions)	1320	1281	1355	1465	3441	4637	5702
Inward FDI Stock/ GDP (%)	3.1	2.2	2.2	3.5	6.4	8.5	10.5

Source: Adopted from UNCTAD, World Investment Report 2003.

† Annual Average.

a Estimates.

As table 3-8 shows, towards the end of the 1990s, due to the regained political stability that fueled economic improvements, Algeria started to recover its attractiveness to foreign investments and became, once again, among the top recipients of inward FDI in the MENA region (table 3-6). Over the last few years, FDI inflows to Algeria grew consistently, from $507 million in 1999 to $1196 million in 2001, that is, more than 12% of MENA total inward FDI on average (table 3-4). In 2002, despite the slight decrease in FDI inflows to Algeria, its share in the region's FDI total inflows was more than 19%, and for the first time since the 1970s, Algeria has become the top recipient of FDI in the entire MENA region. Algeria is expected to continue to play a significant role in FDI operations in the region since it was part of two major intra-regional FDI projects in 2003. First, Egypt's "Orascom Telecom" won the bid for Algeria's global system of mobile communication (GSM) at a cost of $737 million.

The Egyptian company plans to invest $500 million over the next five years. Second, the Algerian national oil company "SonaTrack" participated in oil ventures in Egypt and Lebanon (UNCTAD, 2003).

3-4-2-2 The case of Egypt:

Given the relatively large Egyptian market, its considerable export potential, attractive geographical location and fairly well-developed physical infrastructure, Egypt's performance on the FDI front is disappointing, especially when compared with countries of similar potentials in other regions (compared, for example, with Indonesia in East Asia or Brazil in Latin America). However, compared with other MENA countries, Egypt did reasonably well in the last few years. It has always been among the top five recipients of FDI in the region, ranking as number one in 2000, two in 1999 and coming in the fifth place in years 2001 and 2002 (table 3-6).

After a long hiatus during the 1950s and 1960s, Egypt very slowly and gradually managed to attract some FDI starting in 1975, the beginning of the open-door policy implementation. FDI has increased considerably since then, from virtually zero up to 1975 to $200 million yearly on average during the first half of the 1980s, before declining slightly to $173 million a year during the late 1980s (table 3-7).

By early 1991, Egypt started to implement an ambitious economic reform program, supported by both the IMF and the World Bank. The reform package included monetary policy reforms, tight fiscal policy, liberalization of foreign trade and investment and allowing the private sector a leading role in economic activities. The stabilization component in this program could realize its goals, especially improving the current account deficit, as well as cutting back the budget deficit

significantly to less than 2% of GDP in the fiscal year 1994-95, down from 17% in 1989-90. The inflation rate fell from 27% in 1990 to less than 10% in 1995 and for the first time in long while, the real interest rates became positive. However, this was not paralleled with similar success on the structural adjustment front, especially with regard to labor force reforms and the pace of the privatization program. The size of State Owned Enterprises remained more than 40% of GDP, considerably higher compared with only 11% for other developing economies on average.

Table 3-9: Egypt Inward FDI Indicators

Years / Indicator	91-96†	1997	1998	1999	2000	2001	2002
FDI Inflows ($ millions)	714	887	1076	1065	1235	510	647
FDI Inflows/ Gross Fixed Capital Formation (%)	8.3	5.2	5.5	5.2	5.9	3.4	4.6
Years / Indicator	**1980**	**1985**	**1990**	**1995**	**2000**	**2001**	**2002[a]**
Inward FDI Stock ($ millions)	2260	5703	11043	14690	19589	20099	20746
Inward FDI Stock/ GDP (%)	9.9	16.4	25.6	24.4	20.1	20.4	24.3

Source: Adopted from UNCTAD, World Investment Report 2003.

† Annual Average.

a Estimates.

Between 1991 and 1996 Egypt's share of FDI inflows to the region was about 20%, amounting for $714 million and representing more than 8% of gross fixed capital formation in the Egyptian economy yearly on average (table 3-9). In 1998, Egypt attracted the highest amount of FDI in the North Africa sub-region and the

second highest in the MENA as a whole after Saudi Arabia. Inflow of FDI to Egypt in 1999 increased significantly to $1065 million, up from $887 million in 1997, with a growth of 20% and a share of almost 29% of total MENA FDI inflows. As illustrated in tables 3-4 and 3-9, Egypt was the largest recipient of FDI in the MENA region in year 2000 with about $1235 million worth of inflows, boosting total inward FDI stock to $19.6 billion, a little over 20% of Egypt's GDP that year and the highest in the region after Saudi Arabia.

Recent trends in global FDI, coupled with escalated regional instability, have negatively influenced Egypt's inward FDI flows, which declined by 59% to $510 million in 2001, representing only 5% of FDI inflows to the region. This put the country in front of a liquidity crisis, and the massive foreign currency outflows led to a 30% nominal devaluation of the Egyptian pound in 2001. Despite the slight improvement in 2002, Egypt's FDI inflows were as low as $647 million, a little over 11% of MENA's inward FDI. A significant share of this FDI is directed to the manufacturing sector. Sectors like chemicals, especially pharmaceuticals, building materials, food, metals and textiles benefited the most from the FDI inflows. The services sector also benefited, especially tourism.

3-4-2-3 The case of Morocco:

Over the period between 1970 and 1990, Morocco experienced relatively steady but rather mediocre inflows of FDI, fluctuating between as low as $31.7 million annually on average in early 1970s and as high as nearly $100 million on average in the late 1980s (table 3-7). Yet, Morocco's limited success in attracting FDI, in comparison with developing countries in other regions, is fairly surprising, especially

with regard to the country's attractive geographic location for European investors as well as its potential to serve as an exporting platform for other investors interested in the European market. Unlike most countries in the MENA region, Morocco enjoyed long years of political stability, supported by successful implementation of an economic stabilization and structural adjustment program starting during the first half of the eighties that made Morocco one of the best performing developing countries (Haddad and Harrison, 1993).

Table 3-10: Morocco Inward FDI Indicators

Years / Indicator	91-96†	1997	1998	1999	2000	2001	2002
FDI Inflows ($ millions)	406	1188	417	1376	423	2808	428
FDI Inflows/ Gross Fixed Capital Formation (%)	6.3	17.2	5.3	16.5	5.3	37.2	4.8
Years / Indicator	**1980**	**1985**	**1990**	**1995**	**2000**	**2001**	**2002[a]**
Inward FDI Stock ($ millions)	189	440	917	3032	6758	9566	9994
Inward FDI Stock/ GDP (%)	1.0	3.4	3.5	9.2	20.3	28.0	26.9

Source: Adopted from UNCTAD, World Investment Report 2003.

† Annual Average.

a Estimates.

As illustrated in table 3-10, between 1991 and 1996 Morocco received $406 million FDI inflows yearly on average, representing more than 6% of its gross fixed capital formation. In 1997, Morocco's inward FDI flows increased dramatically, by more than 192%, to reach $1188 million. The situation changed significantly between

1997 and 1998, when inflow of FDI dropped substantially to $417 million, due to reduced inflows to privatization projects. With $1367 million FDI inflows in 1999, Morocco was the top recipient of FDI not only in North Africa, but in the MENA region all together, capturing almost 38% of the region's FDI inflows that year. Discouraged by the drought that attacked the country in year 2000, the magnitude of FDI inflows to Morocco dropped significantly by nearly 70% to $423 million; however, inward FDI stock continued to increase to a record value of $6758 million, which is equivalent to 20.3% of Moroccan GDP. Not before 2001 did Morocco's inward FDI exceed $2.8 billion, a peak never attained before by any other MENA country in North Africa, with which it was the second largest recipient of FDI in the region after Turkey. In fact, in 2001 FDI inflows to Morocco were more than 51% of FDI inflows to the North Africa sub-region and 28% of total MENA region total FDI inflows. In 2002, inward FDI stock in the Moroccan economy was estimated to be almost $10 billion, or 27% of the GDP that year.

3-4-2-4 The case of Saudi Arabia:

By the late 1970s, especially after the sharp increase in oil prices, Saudi Arabia stared to receive considerable volume of FDI inflows that placed it among top recipients of FDI in the region (table 3-7). Although the economy has grown little since the oil price collapse of 1982, FDI inflows to the Saudi economy continued to increase throughout the eighties decade to reach more than $195 million yearly on average between 1989 and 1990. Saudi Arabia was the preferred host country for U.S. and Japanese investors in the MENA region. During the 1980s, over 70% of all U.S. and 68% of all Japanese direct private investment in the region was made in Saudi

Arabia, and close to 90% of all foreign investment in Saudi Arabia was made by U.S. and Japanese companies (El-Rifai, 1993).

This successful performance was to a certain extent due to the Saudi substantial domestic market, widened by export possibilities to other MENA countries, specially the countries of the Gulf Cooperation Council (GCC). With a total GDP of more than $100 billion annually on average, equivalent to the sum of the GDP of Algeria, Egypt, Morocco and Tunisia altogether, and nearly $8500 average per capita income, Saudi Arabia indeed was the largest economy in the MENA region during the 1980s. In addition, Saudi Arabia has an abundance of cheap energy, a strong industrial base in petrochemicals, excellent and inexpensive infrastructure and an amble supply of capital to co-finance foreign investments. Saudi Arabia's well-known political stability and predictability, at that time, made it even more attractive to invest there, particularly for highly capital-intensive investments, with lengthy payback periods. Except for oil extraction, Saudi Arabia has always been a largely free-enterprise-oriented economy, with little government interference and control. Moreover, foreign trade is mostly free, and the foreign exchange regime is free and stable, including capital transfers. The government further stimulated FDI by introducing a number of tax incentives.

After several years of disinvestment in early 1990s, Saudi Arabia became the largest recipient of inward FDI in the MENA region in 1997 and 1998 with inflows of $3.0 billion and $4.3 billion respectively (table 3-11). Despite two years of reverse investment in 1999 and 2000, the total stock of inward FDI in the country continued to increase to reach $25.9 billion, representing 13.8% of GDP in 2000.

Table 3-11: Saudi Arabia Inward FDI Indicators

Years / Indicator	91-96†	1997	1998	1999	2000	2001	2002
FDI Inflows ($ millions)	-201	3044	4289	-780	-1884	20	-350[a]
FDI Inflows/ Gross Fixed Capital Formation (%)	-0.7	10.4	14.2	-2.5	-5.7	0.1	...
Years / Indicator	**1980**	**1985**	**1990**	**1995**	**2000**	**2001**	**2002[a]**
Inward FDI Stock ($ millions)	...	21828	22500	22423	25963	25983	25633
Inward FDI Stock/ GDP (%)	...	25.2	21.5	17.5	13.8	13.9	13.4

Source: Adopted from UNCTAD, World Investment Report 2003.

† Annual Average.

a Estimates.

... Data are not available.

Most of the Saudi inward FDI was directed to the petrochemicals projects, and some foreign investment had also been directed to the Saudi offset program, whereby military and some commercial contracts require foreign firms to invest a portion of the proceeds of a contract back into local industry.

FDI flows to West Asia sub-region, in general, declined in 2002 to $2 billion, from $4.6 billion in 2001 compared with $3.5 billion and $5.5 billion for the North Africa sub-region correspondingly. Despite the recent efforts of some countries in this sub-region to relax FDI restrictions, flows continue to be low, with geopolitical tensions being a major factor; Saudi Arabia was no exception. Turkey, however, remained the main recipient and the second largest in the MENA region as a whole after Algeria (table 3-6).

3-4-2-5 The case of Tunisia:

Since the beginning of 1980s, Tunisia has started to attract a considerable share of FDI inflows to the MENA region as the third-largest recipient of FDI in the region after Egypt and Saudi Arabia (table 3-7). Between 1991 and 1996 Tunisia received $425 million FDI inflows yearly on average compared with $119 million in the first half of the 1980s and $79 million during 1986-1990 (table 3-12).

Table 3-12: Tunisia Inward FDI Indicators

Years / Indicator	91-96†	1997	1998	1999	2000	2001	2002
FDI Inflows ($ millions)	425	365	668	368	779	486	821
FDI Inflows/ Gross Fixed Capital Formation (%)	10.3	7.8	13.6	7.0	15.2	9.3	15.0
Years / Indicator	**1980**	**1985**	**1990**	**1995**	**2000**	**2001**	**2002[a]**
Inward FDI Stock ($ millions)	3341	4917	7615	10967	11545	11667	14061
Inward FDI Stock/ GDP (%)	38.2	58.5	62.0	61.0	59.3	58.4	66.2

Source: Adopted from UNCTAD, World Investment Report 2003.

† Annual Average.

a Estimates.

FDI inflows increased from $365 million in 1997 to reach $668 million, representing 13.6% of gross fixed capital formation in the Tunisian economy in 1998. By the second half of the 1990s, Tunisia, as well as Morocco, started to act as an export platform for MNCs to the European Union (EU), with which both countries

signed free trade agreements in 1995 as part of the Mediterranean initiative aimed at creating a Mediterranean free-trade area.

At $779 million inward FDI in 2000 representing more than 20% of MENA total FDI inflows, the total stock of FDI in Tunisia reached a peak of nearly $12 billion, equivalent to 59.3% of Tunisia's GDP that year. Despite the downturn in global FDI, Tunisia's inward FDI continued to increase in 2002 to $821 million, the second-highest amount of FDI in the North Africa sub-region and the third highest in the MENA as a whole after Algeria and Turkey. FDI inflows to Tunisia in 2002 contributed to gross fixed capital formation by 15%, boosting inward FDI stock to more than $14 billion, representing 66.2% of GDP (table 3-12).

Most of the foreign investment has been directed to the energy-related industries, prospecting and developing oil and gas fields and building pipelines. Foreign investment in textiles has also been considerable, as well as other sectors like leather products, vehicle parts, electronics, pharmaceuticals and computer software, which have benefited from FDI to Tunisia. The tourism sector also attracted about 9% of total Tunisia inward FDI.

3-4-2-6 The case of Turkey:

From the early 1920s through the late 1970s, Turkey pursued an inward-oriented economic policy with heavy reliance on government intervention and import substitution. During that time foreign direct investment in Turkey was virtually negligible. The September 1980 coup marked the beginning of the transformation of Turkey's political and economic environment. It signaled a move toward a comparatively open, orthodox and export-oriented economy where the need to attract

FDI was seen as an essential element of Turkey's radical economic liberalization program, designed to sustain economic development and improve the balance of payments' situation.

The Foreign Capital Framework Decree (8/168) was issued and a separate governmental institution, the Foreign Investment Directorate, was established in order to simplify administrative procedures and handle investment applications with speed. Two more decrees were issued in 1983 and 1984, which further liberalized FDI conditions in Turkey. More fundamental FDI-related legislation came into effect in 1985 and 1986 (for more details, see Tatoglu and Glaister, 1996; Glasser, 2001). This led to the establishment of free trade zones (FTZs), the removal of restrictions on foreign equity participation and the ending of minimum export requirements. These legislative changes contributed to a significant increase in FDI in Turkey. As table 3-7 indicates, Turkey was the largest recipient of FDI inflows in the MENA region in the second half of the 1980s, with more than $388 billion yearly on average.

Promoted by the emerging potential of Turkey's domestic market, its strategic location between the European, Central Asian and other Middle Eastern markets as well as the political stability it witnessed, this successful performance continued throughout the 1990s. Turkey has been the fastest-growing economy since the Second World War, not only in the region but also among the Organization for Economic Cooperation and Development (OECD) countries. Between 1986 and 1993 Turkey recorded a growth rate of 5.3%, which was about two percentage points higher than the OECD average (Tatoglu and Glaister, 1996). The high growth rate of the economy, a fast-growing population, coupled with the country's fairly stable

democratic regime, on top of being a member of NATO and the OECD in a highly volatile region like the MENA region, have been the main driving forces for Turkey to be the location of choice in the region by many large multinationals.

Table 3-13: Turkey Inward FDI Indicators

Years / Indicator	91-96†	1997	1998	1999	2000	2001	2002
FDI Inflows ($ millions)	751	805	940	783	982	3266	1037
FDI Inflows/ Gross Fixed Capital Formation (%)	1.9	1.6	1.9	1.9	2.2	12.4	...
Years / Indicator	**1980**	**1985**	**1990**	**1995**	**2000**	**2001**	**2002[a]**
Inward FDI Stock ($ millions)	8845	9253	11194	14977	19209	17521	18558
Inward FDI Stock/ GDP (%)	12.9	13.8	7.4	8.8	9.6	11.9	10.2

Source: Adopted from UNCTAD, World Investment Report 2003.

† Annual Average.

a Estimates.

... Data are not available.

With annual average FDI inflows of $751 million, Turkey remained the top recipient of FDI in the MENA region over the first half of the 1990s. Cumulative inward FDI stock also rose substantially from $9.3 billion in 1985 to almost $15 billion in 1995, indicating the significance of foreign investments in the Turkish economy (table 3-13). Following Turkey's entrance to the customs union with Europe in January 1996, FDI activities became dominated by European MNCs, which account for more than 60% of the total Turkey inward FDI. Turkey's emerging role as a springboard for MNCs to access the newly emerging markets of the MENA region

through the Turkish "gateway" also makes the country an even more attractive location for foreign investments.

In effect, in 2001 Turkey alone received one third of the total FDI inflows to the MENA region, amounting for $3.3 billion that contributed more than 12% to fixed capital formation in the economy. With $17.5 billion, Turkey was the third largest holder of inward FDI stock in the MENA region after Saudi Arabia ($25.9 billion) and Egypt ($20.1 billion). In addition to tourism, FDI in Turkey is concentrated in Turkey's highly competitive industries, such as glass, textiles and ceramics that greatly benefited from the European custom union arrangements.

More recently, in June 2003, a new FDI legislation, Law 6224, was enacted to replace the old Turkish FDI law that dates back to 1954. The old FDI approval and screening system has changed under the new law to a simplified notification and registration system. In addition, this new law does not restrict FDI in any sector or impose any performance requirements, and even it eliminates the old minimum-capital limit. As for foreign investors, the new law grants them full convertibility in their transfers of capital and earnings, allows them to own property without restrictions and recognizes their right to international arbitration (Erdilek, 2003).

The preceding analysis of the geographical distribution of FDI inflows among developing regions sets the stage for the discussion in the following chapter. Chapter four is an attempt to put all the pieces together: the conceptual framework introduced in chapter two and FDI-inflows facts discussed in chapter three so as to identify the underlying causes of such evident uneven distribution and assess MENA region attractiveness of FDI.

CHAPTER FOUR

MENA REGION ATTRACTIVENESS FOR FOREIGN DIRECT INVESTMENT

4-1 Introduction:

The ongoing trend of uneven distribution of FDI inflows among developing regions as discussed in chapter three is the result of many factors. Any single-determinant explanation, such as the argument for domestic market-size or the availability of low-cost labor, is of extremely limited use. Three interrelated sets of causes are thought of to be important in explaining differences in attractiveness for foreign direct investment across developing world, and consequently are responsible for such trend: the changing nature of FDI supply, varying levels of economic development and different investment climates in developing regions.

As for the MENA countries, the analysis in the previous chapter proves the poor performance of them individually and as a group in attracting FDI, especially when compared with other developing regions. The region receives only one-half the foreign direct investment expected for a developing country of an equivalent size[26]. That is why the focal point of this chapter will be factors that deter foreign investors away from the region, or what I refer to as "anti-FDI" determinants that all countries in the MENA region experience. Specifically, four determinants are considered responsible the most for

---

[26] See "Inward FDI Performance Index" in UNCTAD, World Investment Report, 2003, annex table A.I.6., p.196.

crowding FDI out of the region: political risks, lagging institutional reforms, absent regional arrangements and adverse human capital condition.

To this end, this chapter is structured in four sections. Following this introduction, section 4-2 discusses the underlying causes of regional differences in attractiveness for FDI. Section 4-3 in turn focuses on indicators that determine the behavior of MNCs operating in the MENA region. Finally, section 4-4 is devoted to highlighting the basic anti-FDI determinants that counteract efforts in the region to attract a more significant share of world FDI.

4-2 Causes of Disparity in Attractiveness for FDI:

Three sets of factors collectively have produced this trend of uneven distribution of world FDI among developing regions. The first is related to the supply side, that is, sources of FDI. The second and the third are demand-side factors, namely the host-region's level of economic development and investment environment.

4-2-1 FDI-Supply Transformation:

Since developed countries have been always the major source of FDI flows to the developing countries, economic changes in the former (home countries) have major impact on flows to the latter (host countries). One major change has been the technological innovations, most of which were labor-saving. The resulting change in the structure of production systems has led to a reduction in production costs, particularly those of the labor component. Technologically-advanced industries, rather than labor-intensive manufacturing industries, therefore, became an increasingly important component of FDI by MNCs. Consequently, countries with low-cost unskilled labor partially lost their attractiveness as foreign investment destinations.

This new pattern of FDI required not only relatively cheaper labor, but also a certain level of skills and reliable supporting services, including a well-developed infrastructure. This is why, as discussed earlier in chapter three, the NIEs have emerged from the labor-intensive industries to high-technology manufacturing and benefited greatly from this shift. They kept receiving a significant magnitude of FDI from more developed countries, especially Japan, and gradually pushed labor-intensive industries into other developing countries with a lower level of technological development and cheaper labor, specifically China and the ASEAN countries (Ozawa, 1992, 2001 and 2003).

As for the MENA region, the big three direct investors are the United States, the European Union and Japan, whose FDI is becoming increasingly horizontal, specializing mostly in differentiated services products[27]. Therefore, they hold most of their investments among their own large markets, where high purchasing powers are coupled with similar market institutions. Even their efficiency-seeking vertical FDI is taking place in their neighboring regions: Latin America, especially Mexico, for the United States, East and South Asia for Japan and Central and Eastern Europe for the European Union. Here lies the dilemma of the MENA region. On one hand, the MENA market is neither deep nor big enough to attract market-seeking horizontal FDI. Its average GDP per capita is as low as $2220, and despite its large population figure of 400 million, its market does not constitute a full-fledged free trade area[28]. On

---

[27] For more on this evidence, see Wheeler and Mody (1992) and Shatz and Venables (2001).

[28] The missing regional integration among the MENA countries will be addressed in detail later in this chapter.

the other hand, economic structures of MENA countries are disjointed from the production chain of major foreign direct investors, preventing them from being the chosen location for certain production stages or playing a significant role in the "inter-process" trade associated with vertical FDI. This is because MENA labor is neither cheap nor highly skilled. For example, labor cost adjusted to productivity in Egypt, the biggest country in the region population-wise, is 30% higher than in either China or Poland (Sadik and Bolbol, 2001). Moreover, in 2001, the value added in manufacturing sector per worker in the MENA region is less than one half of that in MERCOSUR countries, and 27% of that in the ASEAN countries[29].

In addition, the change in the sectoral composition of FDI over time, specifically the shift from extractive sector to manufacturing industries to high-tech industries to services, has also rendered certain developing countries more attractive than others. This can partly explain the pattern of inward FDI in the MENA region in contrast with other regions. Promoted by the sharp rise in oil prices in the 1970s, the extractive sector, especially in the oil industry, picked up a momentum and oil-producing countries in the region enjoyed a high magnitude of FDI inflows. However, the move towards trade liberalization within economic reform contexts, especially in large-market countries such as Egypt, Morocco and Turkey, made it unappealing for tariff-hopping FDI in differentiated goods to operate in those locations, particularly given the immature institutional environment in the region.

---

[29] Here I use the value added per worker in manufacturing sector as a proxy for productivity, by dividing value added in manufacturing by number of workers in this sector. Those figures are calculated from the date available in World Bank, World Development Indicators CD-ROM, 2003.

Finally, MENA region's share in the worldwide expansion of FDI in services remains far below par. This expansion has occurred largely in producer services and is the result of the growing technological complexity of products and the increasing share of service inputs in final goods. These producer services are often high-tech in nature, and quite-capital intensive, ranging from design and marketing to banking and insurance. These services, like high-tech manufacturing activities, demand a highly-educated work force as well as support industries and infrastructures, both of which are scarce in most countries in the MENA region.

4-2-2 Differential in Host-Countries' Level of Development:

The degree of economic development in host countries is an important factor influencing the location choice of MNCs. A higher degree of economic development implies not only higher per capita income and greater purchasing power, but also better conditions in both physical and human infrastructures, all of which are fundamental for attracting inward FDI. This explains the steady growth of FDI inflows to South and East Asian countries since the 1970s until the present. Even during the financial crises of 1997-98, their inward FDI has proved to be resilient, and despite the recent severe drop in global FDI, the region's shares in world FDI and in developing world FDI inflows surprisingly increased (review tables 3-1 and 3-2).

Unlike any other developing region, the performance of the Asian tigers was exceptional, with sustained GDP per capita growth rate above 6% on average in the last three decades. The fastest growing economies in the Asian region have been China, Hong Kong, South Korea, Singapore, Taiwan, Indonesia, Malaysia, Thailand and Philippines, each of which is receiving a considerably high share of developing

world FDI inflows and altogether have continued to capture more than 80% of those inflows up until the 1997 financial crisis (UNCTAD, 2003). The average GDP per capita growth in the MENA region, on contrary, was constantly declining from 4% in the 1970s to 0.5% in the 1980s[30], despite the slight "improvement" to 1.3% during the 1990s[31]. Relatively "top" performers among MENA countries have always been the main recipients of FDI in the region, namely Algeria, Egypt, Morocco, Saudi Arabia, Tunisia and Turkey. Yet, their share in developing-world inward FDI has continued to be significantly negligible, ranging from 7.7% in the 1970s to 3.3% in the 1990s, except for the period 1983-90 when it reached a rare peak of 12.3%[32].

As for Latin America and the Caribbean countries, although the entire region was hindered due to the debt crisis during the 1980s, they attracted about 23% of total FDI inflows to developing countries. More than one half of those inflows were directed to only two countries, Brazil and Mexico, the best growth performers in the region. With the improvement of growth rates throughout the region during the 1990s, its share in developing-world FDI has continued to increase to reach more than 40% yearly on average. Again, countries with higher growth rates, Brazil and Mexico, were among the top recipients of FDI not only in the region, but also within the developing countries as a whole (review table 3-3).

---

[30] The main reason for such low average per capita income growth rate during the 1980s is the high negative rates in Iraq, Lebanon and Libya due to wars and political instability (World Bank, 2003).

[31] Yearly average calculated across the MENA countries identified in chapter three. Data collected from World Development Indicators CD-ROM: World Bank, 2003.

[32] However, more than 90% of those FDI inflows to the region during the 1980s were directed to a small number of countries, namely Egypt, Saudi Arabia and Turkey.

4-2-3 Business Climate Variations:

Differences in investment environment among host countries are crucial in determining not only the choice of business location, but also the choice of direct investment over alternative modes of entry: licensing or exports, for example. The most important component of an investment environment is the regulatory framework or FDI regime in the host country. This regulatory framework which determines the degree of hospitality and openness toward foreign investors varies among developing host countries and regions.

Developing countries nowadays compete in liberalizing their policies to establish a welcoming regulatory framework for foreign investors by relaxing limitations on foreign ownership, liberalizing sectoral restrictions rules, streamlining approval procedures and loosening up foreign exchange controls. Those measures are important because FDI will simply not take place where it is forbidden or strongly impeded. Equally important, with regulatory framework, host countries interested in encouraging FDI inflows ought to be focusing on measures that facilitate business. These include investment promotions and guarantees, investment incentives, after-investment services and improvements in amenities.

The most successful countries in this perspective are, again, the South and East Asian countries! For example, China relaxed foreign shareholding limitations in the domestic airlines industry from 35% to 49%, while in the meantime the Shenzhen Municipal Government in China launched a center to address and solve foreign investors' problems. South Korea offered new tax incentives to attract FDI, whereas Malaysia announced incentives for operational headquarters and R&D centers.

Indonesia declared the year 2003 as the "Indonesia Investment Year," with a number of favorable policy changes to be introduced, including the innovative "one roof service" plan that will expedite investment approvals for all foreign investors, existing and new. It will, in addition, simplify procedures and improve the coordination of various agencies, including other governments in the region. In parallel, the Indonesian Investment Coordinating Board will improve its pre- and post-investment services at the national and regional levels (UNCTAD, 2003).

Since the beginning of the 1990s, governments in Latin America and the Caribbean have been increasingly pursuing foreign investment promotion policies that go beyond simply opening to foreign investors by targeting investments in line with their development strategies. As indicated in a survey carried out by UNCTAD, most countries in the region are planning to increase promotions and targeting efforts to attract FDI (UNCTAD, 2003, p. 55). Chile, for instance, has recently developed an aspiring initiative in an attempt to promote the country as a place for high-tech investment. By attracting FDI into the software industry and information technology services, such an initiative will transform the country's production base in a direction consistent with the country's changing economic conditions and comparative advantage. Proceeding along similar lines, the Mexican state-owned bank Bancomext launched an investment promotion service in 2003.

However, as countries such Argentina, Brazil and Venezuela went through periods of financial instability and political uncertainty, both their domestic and foreign investments were negatively affected. For example, due to the unfavorable regulations, FDI in electricity and telecommunication in Brazil, as well as Mexico,

continued to be deterred. As a result, privatization is no longer an important source of FDI in the region. Although openness to FDI is not being reversed, the enthusiasm for privatization has diminished.

Before the 1990s, the MENA countries followed very restrictive regulatory policies and, in general, were not very hospitable to foreign investment. Foreign ownership was allowed in few countries and few sectors. Foreigners were banned from owning real estates. Local inputs, such as row materials, intermediate goods, energy and labor, were also subject to price controls and administrative boundaries. Firms were subject to minimum-local-content requirements that severely restricted the use of imported intermediate goods or foreign labor expertise. Regularly, intermediate goods could not be imported if a "similar" good was being produced domestically. In addition, labor regulations restricted flexibility of worker compensation and made it very difficult to discipline workers. As a consequence of all this, there was very little foreign investment in the region except in oil and mining sectors, where the rents were high and the technological requirements made MNCs involvement inevitable.

In Egypt, a frequent concern of foreign investors has been the lengthy and complicated investment approval procedures which involve authorization from different agencies. In addition, the customs procedures are unclear and encompass imposing high and often arbitrary costs on imported inputs required for production. The government in Saudi Arabia has not been very clear on whether full-scale private sector involvement in strategic sectors is welcome or not. For instance, in 1993 the government cancelled, without much explanation, a proposed joint venture between Mobil Corporation and a private Saudi company that had reached the commercial

registration stage. In 1996, the Turkish government requested Turkcell, a Finnish, Swedish, and Turkish joint venture cellular company, to stop selling new subscriptions. The reason given for the regulatory action was that Turkcell's infrastructure was insufficient. However, Turkcell was investing at a very rapid rate and, at the time, it was the fastest growing cellular telephone network in the world. It is believed that the real reason for the ban on Turkcell is to give an opportunity for the state telephone company, Turkish Telecom, to catch up (Esfahani, 1998).

Policy uncertainty by and large may be due to the absence of a clear strategic vision on the governments' side or inadequacies in the decision-making process. However, what makes potential policy changes particularly hazardous for investors are the benefits that the host government can derive by taking away the returns to sunk assets. Particularly, this is a serious problem in many of the MENA countries because there are few institutional mechanisms to restrain the opportunistic use of the intricate and numerous regulatory instruments at the governments' disposal. Having in mind the regulatory hazards of investing in the MENA region, MNCs engage in projects that are expected to yield sufficient profits after discounting for various forms of rent extraction. Recently, a few MENA countries have loosened their regulatory controls over business and have managed to attract more foreign investment. In particular, Egypt, Morocco, Tunisia and Turkey have been more successful in this respect; however, many restrictions and hazards remain. While the threat of direct rent takeover by the government has diminished, the rules and regulations allow local entrepreneurs who form joint ventures or contract with foreign investors to extract rents (ERF, 2002).

4-3 MENA Region Attractiveness for FDI:

The germane question that this section is trying to address is whether the MENA region a good place to invest. Well, according to the UNCTAD Inward FDI Performance Index, the region's performance has been disappointing. As table 4-1 illustrates, the Latin America and the Caribbean region remains the best performer in the decade of the 1990s, with a better performance in the final period. South, East and South-East Asia maintains an index value of over one, but has not recovered its performance of before the financial crisis. African counties improve their position, but their indices' values remain below unity. With an index as low as 0.58, the MENA region remains the poorest performer among developing regions.

Table 4-1: Inward FDI performance index by region, 1988-1990†

Region \ Periods	1988-1990	1993-1995	1998-2000	1999-2001
World	1.00	1.00	1.00	1.00
Developed Countries	1.03	0.76	0.99	1.00
Developing Countries	0.99	1.98	1.04	1.01
South, East and South-East Asia	1.31	2.70	1.08	1.02
Latin America and the Caribbean	0.90	1.62	1.42	1.41
MENA	1.12	1.41	0.53	0.58
Africa	0.76	1.15	0.62	0.82
Central and Eastern Europe	1.02††	1.31	1.01	0.99

Source: UNCTAD, World Investment Report 2003, annex table A.I.6., p. 196.

† Three-year average.

†† 1992-1994. As most of the countries in this region did not exist in their present form before 1992, the period for the index is adjusted.

The Inward FDI Performance Index ranks countries by the FDI they receive relative to their economic size, calculated as the ratio of a country's share in global FDI inflows to its share in global GDP. A value greater than one indicates that the country receives more FDI than its relative economic size, a value below one that it receives less and a negative value means that foreign investors disinvest during that period. The index thus captures the influence on FDI of factors other than market size, assuming that, other things being equal, size is the "base line" for attracting investment. These other factors are diverse, ranging from the business climate, economic and political stability, the presence of natural resources, infrastructure, skills and technologies, to opportunities for participating in privatization or the effectiveness of FDI promotion (UNCTAD, 2003). As for the MENA region, there are five groups of indicators or factors that determine the behavior of MNCs operating there and indicate the potential for attracting FDI. Those indicators are discussed next.

4-3-1 Societal Attractiveness:

Societal attractiveness mirrors a society's general attitude toward foreign investment, foreign-owned property and foreigners on the whole. Bahrain, Egypt, Morocco, Oman, Tunisia, Turkey and the UAE have reasonably good societal attractiveness (ERF, 2002). Yet, despite a certain belief among policy makers of the need for foreign investment, a portion of the political elite and of the population in some MENA countries is wary of foreigners in general and foreign investment in particular. Due to such basic problems, attempts to improve the attractiveness of other factors are bound to be less effective than they would be otherwise.

4-3-2 Infrastructural Attractiveness:

This reflects the quality and coverage of the physical infrastructure, property rights systems and their administration and the stock of existing FDI. MENA countries implementing privatization programs with relatively well-developed stock markets, such as Egypt, Morocco, Jordan, Tunisia and Turkey, do well on physical infrastructure, especially in road networks, electricity and telecommunications[33]. Nevertheless, according to the ERF (2002), foreign investors believe most MENA countries have disregarded the administrative aspects of government services. Despite significant improvements, this discourages foreign investors in Morocco and Egypt especially. Most countries have been improving their scores and reforming their bureaucracies. One example is in build-operate-transfer (BOT) contractual arrangements implemented in a handful of countries. In Saudi Arabia, a recent FDI law established the General Investment Authority, a one-stop shop to speed up approval for foreign investors' projects. In addition, both Iran and Kuwait have moved to allow foreign participation in the oil industry.

4-3-3 Factors Attractiveness:

This includes the availability and quality of raw materials and intermediate goods, in addition to physical and human capital resources. Most MENA countries fare well in raw materials and energy, are average in human resources and lag behind in technology. However, the human capability factor in particular is more problematic, posing a real obstacle to investors in some countries of the region. Even if we assume

---

[33] Review key privatization efforts in the MENA region in ERF, Economic Trends in the MENA Region Report, 2002, pp. 36-40.

that the level of education in the MENA region is somewhat comparable to other developing regions, the "attitude" remains a challenge. A more positive attitude is most likely to emerge with improved situations on the political front, especially the Arab-Israeli chronic conflict, war in Iraq and instability in Sudan. However, with recent developments in the region following the September 11 terror attacks, a paralyzed peace process and deterioration in the Iraqi situation, distrust of foreign investors' agendas in the region may yet again be mounting.

4-3-4 Governability Attractiveness:

Governability, or the general ability of the governing elite to achieve consensus within a rule of law, is of great importance. MENA societies, with few exceptions, are in transition and lack consensus on which direction political development should take. The consequent huge social problems interact with the other factors to create an endemic instability, which discourages foreign investors. Governability is still seen as a major problem in the region, but recently there have been interesting developments. Following the declaration of the U.S.-Middle East Partnership Initiative and the American president's call for the establishment of a free trade zone with the Middle East[34], a noticeable wide-spread movement towards political reforms is on the rise throughout the region. Democracy and free expression enhancement, the expansion of the role of civil society and the protection of human rights are top priorities on the reform agenda. However, it is too early now to judge whether those agendas are genuine and is the commitment of governments is real.

---

[34] In a speech at South Carolina University on May 9th, 2003, U.S. president George W. Bush declared his intention to establish a free trade zone with the Middle East which, he said, would help secure peace, stability and prosperity for the peoples of the region.

4-3-5 Competitive Attractiveness:

Finally, and most importantly, the competitiveness attractiveness. It reflects the comparative significance of the MENA countries' stand, individually and en bloc, and their competence in the competitive "game" in which MNCs and other developing regions are key players. This may include particular FDI-related deregulations, incentives and arrangements taken by MENA countries unilaterally, bilaterally and multilaterally. Some MENA countries, mostly the previously-identified top FDI recipients in the region, have been doing reasonably well. They have successfully conducted or are conducting forceful economic restructuring programs. They have liberalized their FDI rules and procedures significantly and provided generous incentives to potential investors. However, this unilateral trend is not dominant throughout the region on one hand. On the other, unlike the South-East Asia region, bilateral or regional multilateral investment arrangements are dramatically rare.

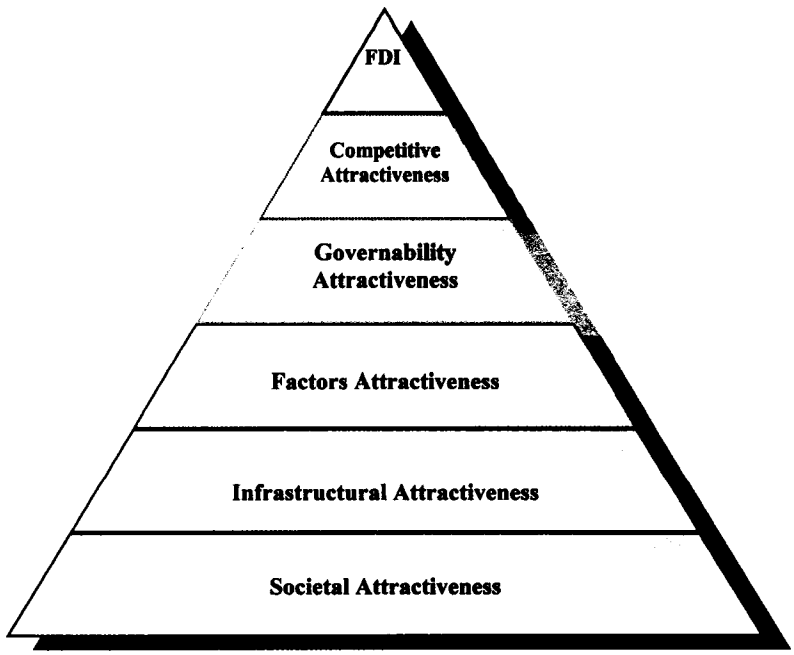

Figure 4-1: MENA Region Attractiveness for FDI

As figure 4-1 suggests, those indicators ought to be thought of as a hierarchy in which the highest-level indicator, that is, competitive attractiveness, does not become influential before the lower-level indicators reach acceptable levels for the country concerned. The MENA countries appear to concentrate their efforts on getting the higher-level factors right, but these efforts are undermined by problems in lower-level factors. For instance, as table 4-1 illustrates, all five MENA countries included in the Economist Intelligence Unit's Business Environment Index lag behind most other countries in the world, with mediocre index values that range from 4.16 for Iran and 6.13 for Saudi Arabia.

Table 4-2: MENA EIU Business Environment Ranking

Index / Country	**Overall Ranking** (out of 60 countries)		**Value of the Index** (Score out of 10)	
	1996-2000	2001-2005	1996-2000	2001-2005
Egypt	39	44	5.44	6.07
Saudi Arabia	40	42	5.53	6.13
Turkey	43	46	5.35	6.02
Algeria	57	57	4.02	5.07
Iran	60	60	3.24	4.16

Source: Economist Intelligence Unit, Country Forecast Reports, 2001.

This EIU Business Environment Index measures the attractiveness of the business environment based on how conducive to business a country is in ten separate categories: political environment, macroeconomic environment, market opportunities, openness to free enterprise and competition, foreign investment policy, foreign trade

and exchange controls, taxes, financing, labor markets and infrastructure (Economist Intelligence Unit, 2001).

Likewise, the Business Competitiveness Index (BCI) presented in the latest Global Competitiveness Report suggests similar rankings for MENA countries (World Economic Forum, 2004). Table 4-2 shows the rankings according to the overall BCI and its two sub-indexes that measure the sophistication of company operations and strategy and the quality of the national business environment for the six MENA countries included in the report.

Table 4-3: MENA Business Competitiveness Indexes Ranking†, 2003

Indexes / Country	Business Competitiveness Index (BCI)	Sophistication of Company Operations and Strategy	Quality of the National Business Environment
Algeria	88	93	86
Egypt	58	55	62
Jordan	41	59	35
Morocco	49	49	49
Tunisia	33	38	29
Turkey	52	51	55

Source: World Economic Forum, Global Competitive Report, 2004.

† The number of countries surveyed in this year's report is 102 countries.

The foundations of the BCI rest on two interrelated areas: the sophistication with which domestic companies or foreign subsidiaries operating in the country

compete, and the quality of the microeconomic business environment in which they operate. For an economy to be competitive, firms operating there ought to be competitive, whether they are domestic or subsidiaries of foreign companies. However, the sophistication and productivity of firms is closely linked to the quality of the national business environment in which they operate. More productive firm-strategies require more highly skilled people, better information, more efficient government processes, improved infrastructure, more advanced research institutions and more intense competitive pressure, among other things; and this is exactly what the BCI tries to capture.

Except for Algeria[35], all MENA countries surveyed fall pretty much where geography and name suggest that they should; in the middle! Tunisia has the best ranking due to its improved business environment quality. On contrary, Egypt enters the ranking at 58, showing a significant decline compared with its ranking in the 1998–2001 period, and indicating the need to improve its national business environment where the lack of transparency and a cumbersome bureaucracy keep institutions inefficient.

4-4 Anti-FDI Determinants in the MENA Region:

In the light of presentation in this chapter thus far, and keeping in mind the status of FDI inflows to the MENA region as discussed in chapter three, it would make more sense to identify factors that discourage foreign investors from doing

---

[35] Algeria's rankings are hurt by the civil war, instability and violence that took place until recently. The economy has started to heal with the wide-range reforms the Algerian government committed itself to; however, it will take sometime to see the effects of those reforms on entrepreneurs' opinions from which BCI is compiled.

business in the region rather than investigating the existence of traditional FDI determinants in MENA countries[36]. The four anti-FDI determinants in the MENA region are discussed in this section.

4-4-1 Political Uncertainty Risks:

It is evident that political stability and predictability are of vital importance for attracting foreign direct investment. A major reason for the MENA inward FDI underperformance is anxiety about stability in the region. The MENA region, indeed, is one of the world's most turbulent conflict-ridden regions. MENA is the only region in modern history that had witnessed at least one war almost every decade and continues to endure prolonged conflicts and political instability. In fact, during the past three decades only one MENA country, Tunisia, has experienced neither war, nor sustained internal unrest, nor a serious unsettled border dispute. Not only have all other countries experienced turmoil, but in many cases, their conflicts have still not achieved a final satisfactory "closure" of root problems.

The Western Sahara sovereignty problem, Islamic uprising in Iran, civil wars in Sudan and Lebanon, chaos in Algeria, first and second Gulf wars, the current war in Iraq are only a few examples! Yet, the Arab-Israeli struggle remains the most obvious regional example of such an intractable conflict, and the most poisonous in its far-reaching effects. Since the Madrid Conference in 1991, the 1993 Oslo Accords, up until the Road Map of 2002, the question of genuine peace in the region remains unanswered. Recent Israeli reoccupation of Palestinian territories has inflicted

---

[36] Basically, there is no need to provide a proof that traditional FDI determinants as described in chapter two are literally irrelevant in the MENA case; it is more than enough to glance through table 3-2 one more time!

horrifying human casualties and material destruction, thereby committing what one well-respected human rights organization called "war crimes" (Human Rights Watch, 2002). In response, acts of violence by Palestinians, whether they took place for revenge or resistance, inflamed the conflict further. Not only does the crisis impede development in the occupied Palestinian territories and hurt the Israeli economy, but, to varying degrees, it affects the entire region. Scarce resources have been systematically diverted to defense for half a century and the unsettled conflict has obviously dampened foreign investment seriously. The tensions generated by the conflict directly affect citizens of Israel, "Palestine" and four surrounding countries: Egypt, Jordan, Lebanon and Syria, including more than two million Palestinian refugees whose dilemma is far from reaching soon settlement. Frustration has led to anger, then hatred, all of which created hostile attitude towards foreign investors, foreign products and even foreigners in general[37]. This state of opposition to and confrontation with the west, in particular, reached its peak following the events of September 11, 2001.

This edgy political climate, moreover, has supported forms of government that abandon meaningful democracy and sound human rights, particularly with respect to freedom of thought and expression, the interpretation of judgments and the perception of accountability of governments to the their own peoples. In the absence of peaceful and effective political channels for dealing with injustices in the region, at the country, regional and global levels, some extreme political movements, identifying themselves

---

[37] For example, calls for boycott of American products in the Arab countries following any American veto in the UN Security Council in favor of Israel are very common.

as "Islamic," have resorted to restrictive interpretations and violence as means of political activism; this has complicated the situation even further. The effect of such security-obsessed situation has been to keep private investment, domestic and foreign, below world norms, since investors tend to be as wary of governments that exert pervasive controls as they are of potential unrest.

4-4-2 Lagging Institutional and Political Reforms:

Unlike trade, or even portfolio investment in this perspective, foreign direct investment has such a unique nature as a dynamic activity that crosses the borders of sovereign countries and hence upsets the whole structure of the host economy, particularly when it interacts with any given institutional environment. Thus, the consideration of institutions in the host country that support, or impede, the investment is of extreme importance for foreign investors when making the decision of locating their investment. The credibility of institutions in host countries is determined by constitutions, laws that define such things as property rights, contracts, as well as regulatory, bureaucratic and judicial performance and finally practices of democracy and the degree of transparency and accountability of governments. The clarity of a country's laws, the extent and honesty of law enforcement in a democratic climate, the efficiency of the bureaucracy and the absence of corruption would all be transaction-cost reducing factors which could make host country location desirable.

Partly because of the MENA region's geopolitical significance, external hegemonic influences prevail over weak state systems governed largely by dictatorial regimes. Weak political structure has hindered the development of democratic institutions and remains a major obstacle to political, institutional and economic

reforms. Moreover, one of the worst consequences of freedom-constraining measures adopted by developed countries in the aftermath of September 11th terror attacks is that they gave authorities in some countries in the region another excuse to enact new laws limiting civil and political freedoms. Considering the lack of restraint on governments, it is hardly surprising that MENA is probably the bleakest region of the world in terms of human-rights issues such as civil and political freedoms, gender equality, and, more generally, opportunities for the full development of human capabilities and knowledge (UNDP, 2003).

While there are few exceptions, transparency in MENA governments is poor and accountability is rare. The absence of representative, accountable, and truly democratic governments in addition to bureaucratic bottlenecks threatens the already vulnerable development prospects, especially with respect to private capital (domestic and foreign) participation. The demarcation lines between the public and the private sectors are often unclear, encouraging conflict of interest, rent seeking, and widespread corruption[38]. Corruption is defined as "the intentional noncompliance with arm's length relationship aimed at deriving some advantage from this behavior for oneself or for related individuals" (Tanzi, 1995). In fact, in many countries some of the proceeds of corruption go to finance the political parties (Tanzi, 1998). In the Global Corruption Barometer survey, political parties, the courts and the police were identified as the three areas most in need to reform (Transparency International, 2003).

---

[38] The most popular and simplest definition of corruption is that of the World Bank which defines corruption as "the abuse of public power for private benefit." For other definitions, see Theobald, 1990. However, no matter the definition, there is no doubt that corruption of the "best" is the "worst"!

The 2003 Corruption Perceptions Index (CPI) reveals that nine out of ten developing countries score less than five against a clean score of ten[39]. Oman ranks the best in the region (26), whereas Libya ranks the worst (118). Table 4-4 shows rankings and CPI scores for selected MENA countries in addition to some other developing countries in South East Asia and Latin America for comparison purposes.

Table 4-4: Transparency International Corruption Perceptions Index 2003

Rank†	Country	CPI Score††	Surreys Used‡	Standard Deviation‡‡	High-Low Range†‡
5	Singapore	9.4	12	0.1	9.2-9.5
14	Hong Kong	8.0	11	1.1	5.6-9.3
20	Chile	7.4	12	0.9	5.6-8.8
30	Taiwan	5.7	13	1.0	3.6-7.8
37	Malaysia	5.2	13	1.1	3.6-8.0
39	Tunisia	4.9	6	0.7	3.6-5.6
46	Saudi Arabia	4.5	4	2.0	2.8-7.4
50	South Korea	4.3	12	1.0	2.0-5.6
54	Brazil	3.9	12	0.5	3.3-4.7
64	Mexico	3.6	12	0.6	2.4-4.9
66	China	3.4	13	1.0	2.0-5.5
70	Egypt	3.3	9	1.3	1.8-5.3
70	Morocco	3.3	5	1.3	2.4-5.5
77	Turkey	3.1	14	0.9	1.8-5.4
78	Iran	3.0	4	1.0	1.5-3.6
88	Algeria	2.6	4	0.5	2.0-3.0
92	Argentina	2.5	12	0.5	1.6-3.2
106	Sudan	2.3	4	1.3	2.0-2.7

Source: Transparency International website: http:// transparency.org/cpi

†The number of countries surveyed is 133 countries.
†† Relates to the perception of the degree of corruption as seen by businessmen, academic and risk analysts, and ranges between 10 (highly clean) and 0 (highly corrupt).
‡ Refers to the number of surveys that assessed a country's performance.
‡‡ Indicates the differences in the values of the sources.
†‡ Provides the highest and lowest values of the different sources.

[39] A more detailed description of the Transparency International CPI 2003 is available at http://transparency.org/cpi/index.html#cpi

In Egypt, for instance, a report by the Administrative Prosecution Department indicates that in year 2003 alone, 78 corruption lawsuits were filed daily against governmental agents and corruption proceeds reached EGP 99 billion, of which EGP 4.1 billion was seized in one famous court case known as the "El-Nasr Lel-Masbokat" case[40]. Bribes and commissions amounted for EGP 400 million, funds seized as illegal profits exceed EGP 600 million, and more than EGP 5 billion were confiscated in money-laundering crimes. This may be disturbing, but at least the government is taking serious steps to fight corruption, and media-coverage of corruption cases is not banned or prohibited[41].

In addition to corruption, the rate of elite circulation, including the possibility of regime replacement as a result of free electoral process, is another imperative indicator in the assessment of the degree of democracy of a polity. Where leaders remain in power for long as a result of uncontested elections, or when they are elected and re-elected by a plebiscite in which they invariably won well over 90% of the votes cast, it is an indication of a system highly restrictive to opposition forces aspiring to the top posts. Unfortunately, this is the case in the majority of MENA countries where leadership tenure in office is mostly indefinite, since there is no limit to the number of terms in which they can seek re-election.

Politicians unrestrained by democratic institutions are less likely to foster the conditions necessary for the security of property and contract rights that guarantee

---

[40] "El-Nasr Lel-Masbokat" is the Arabic name for the "El-Nasr Foundry", a state-owned company in which this case took place, and twenty of its officials at the higher-management level were convicted.

[41] The report was published in "Iktesadi" magazine on January 5th, 2004.

economic growth over the long run (North and Weingast, 1989; Olson, 1993). Likewise, in the case of FDI, MNCs look for markets characterized by long-term stability. Markets governed by democratic institutions will more likely provide the necessary level of credibility and stability.

Finally, legal systems in most MENA countries are inefficient and unpredictable. The overwhelming dominance of non-elected governments allows for considerable interference in the judicial process. Even where courts have a tradition of some independence, such as in Egypt and Lebanon, justice is often painfully slow. Because of the absence of serious and open debate, legislation is often introduced in arbitrary fashion, leading to tangled and contradictory laws.

Not only will the institutional reforms, if truthfully adopted, improve the MENA region's attractiveness for foreign direct investment, but they also boost the region's development opportunities. Assured that their assets will be protected under healthy institutional ambiance, foreign investors are more likely to invest in the region, thereby spurring economic growth.

4-4-3 Absent Regional Integration:

From studying the cases of South and East Asia as well as Latin America regions in a previous chapter, it is quite fair to argue that regional integration and linkages are of great importance when it comes to attractiveness of a region for FDI. Perhaps no other group of countries in the world has been endowed with the same potential for cooperation, even profound integration, as have the MENA countries, especially Arab states that constitute the overwhelming majority of MENA region. Motivated by their unique common characteristics related to history, culture, language

and political challenges, MENA countries' quest for economic integration lays behind the launch of numerous regional initiatives aimed at deepening trade and investment links in the region.

Attempts at economic cooperation in the region date from as early as 1950, when the Arab Joint Defense and Economic Cooperation Agreement was signed, followed by the Economic Unity Agreement in 1957. Other agreements include the resolution to form the Arab Common Market (1965), the Strategy for Joint Arab Economic Action (1980), the Joint National Economic Action Covenant (1980), the Convention to Facilitate and Develop Trade Exchanges among the Arab States (1981), the Standard Convention for the Investment of Capital in the Arab States (1981). More recently, 14 Arab countries established the Greater Arab Free Trade Agreement (GAFTA) under which tariffs should be reduced for members by 10% annually, with the target of completely free trade by 2007. These various efforts have been undertaken within an institutional structure provided by the Arab League Council, the Economic and Social Council and the Council for Arab Economic Unity, in addition to a very large number of other governmental and non-governmental bodies.

In addition, other regional bodies have been set up outside the purview of the Arab League. These include the foundation of the United Arab Republic (UAR) in 1958, the Gulf Cooperation Council (GCC) in 1981, the Council of Arab Cooperation and the Arab Maghreb Union (1989). Again, however, the record has been mixed. The UAR dissolved in 1961 due to geographic separation and wide variation in labor cost, infrastructure and economic base between Syria and Egypt in favor of the latter, which

made Egypt inevitably the stronger partner in the union[42]. Although the GCC has all the requirements for successful cooperation and integration among its members, including an abundance of financial resources and similar regimes and economic policies, it has been unable to adopt unified investment or industrialization programs across its member countries. The other two initiatives have fared worse, with difficulties that caused the Arab Maghreb Union to stumble and the Arab Cooperation Council to freeze its activities one year after its inception, owing to differing political positions among its members following the second Gulf War.

While many regional institutions apparently exist, they are characterized by feebleness and ineffectiveness, where national considerations take priority over wider regional ones, leading to disregard of broader regional interests. The end result, therefore, has been far from commensurate with the massive institutional superstructure that has been erected and the expectations and aspirations that have surrounded the cooperation efforts over the last five decades. These efforts evidently have failed to adopt well-defined, long-lasting practicable mechanisms to promote intra-regional trade and investment, relying instead on developing more and more ambitious-on-paper, yet unworkable, institutional frameworks.

The most striking evidence of the lack of economic integration among MENA countries is the fact that intra-regional trade accounts for no more than 7% to 10 % of the region's total foreign trade, a figure that has not changed since the 1950s. The high concentration of MENA's exports to a few markets is mainly due to its abundance of

---

[42] In addition, Syrians resented having their economic plans dictated by Nasser. Particularly, they wanted to build a steel industry of their own, rather than importing from Egypt's Helwan plant (Wilson, 1994).

oil, most of which goes to industrialized countries. In fact, the intra-regional trade figure improves when oil is excluded. It is suggested that 30 % of all non-oil MENA exports go to other countries within the region, compared to only 7% when oil is included[43]. The absolute and relative size of intra-MENA trade remains low compared to that of other regions in the world. For instance, intra-regional trade as a ratio of total trade in the European Union and in NAFTA is more than 20 times higher than it is in MENA. Moreover, in the 1990s, trade among ASEAN countries increased by more than 25% and among MERCOSUR countries by 15%, while intra-MENA trade actually decreased despite the move towards more open trading regimes in several MENA countries (ERF, 2002).

Another example is the limited flows of capital among Arab countries. Intra-regional investment can be measured against specific numerical targets or against the level of flows one might expect by comparison to other countries with similar economic characteristics in other regions. By either measure, the level of intra-MENA capital flows is awfully low. This indicates that regional schemes for economic integration have been not successful. MENA capital has instead flowed to the industrial countries, making intra-MENA investment flows far lower than MENA capital outflows to foreign markets[44]. The failure to achieve comprehensive, coherent, integrated development in the region, and the consequent reliance on limited domestic

---

[43] See the Economics Trends in the MENA Region Report, published by the Economic Research Forum for the Arab Countries, Iran and Turkey (ERF), 2002, pp. 55-56.

[44] For several MENA countries, this reflects historical and political ties. For example, investors from Saudi Arabia and other rich Gulf states prefer to invest in the United States rather than in any other MENA country.

markets or integration with foreign markets has adversely affected the region's economic and social development. MENA countries would benefit from liberalization of their trade, possibly in the context of greater regional integration (ERF, 2002). Free trade would boost growth not only by allowing regional producers to benefit from economies of scale but also by encouraging FDI and deepening capital markets.

4-4-4 Adverse Human Capital Condition:

In addition to the low efficiency of physical capital, growth in the MENA countries has been seriously hampered by low and declining human capital productivity. The Endogenous (or New) Growth Theory literature provides strong empirical evidence of the role of human capital in long-run growth (Barro, 1991; Mankiew et al., 1992)[45]. This theory implies that when differences in technological capabilities among countries do exist, these differences are likely to cause permanent differences in long-run growth path of countries; this is the so called "path-dependence" hypothesis. Empirical evidence, in addition, suggests that there exists a positive contribution for international technological spillovers, mainly through FDI or trade to some extent, to productivity and growth and conversely a lack of such growth in the absence of technological spillovers (see for example: Coe et al., 1995; Gittleman and Wolff, 1995; Blomström and Kokko 2001; Kinoshita, 1999; Saggi, 2000; and Chung, 2001).

---

[45] New Growth Theory suggests that growth mechanisms depend on the technological capabilities associated with education and human capital. Such mechanisms include, for instance, Romer's innovation mechanism (P. Romer, 1990) and Lucas's learning by doing mechanism (Lucas, 1988).

Benhabib and Spiegel (1994), however, argue that human capital is essential in facilitating the host-country adoption of technology brought by means of MNCs. They developed a model in which the productivity growth rate depends on both the current level of human capital and the disparity from a "technology leader country," or what they refer to as "catch-up" term. Their findings support the hypothesis that the greater the human capital stock that developing countries possess, the more likely they grow faster. Borensztein et al. (1998) showed that FDI is an important vehicle for the transfer of technology, contributing to growth relatively more than domestic investment. However, their conclusion concerning FDI efficacy in transferring technology, and consequently its contribution to economic growth, holds only if the host country has a minimum threshold stock of human capital. In short, for a country to be capable of first attracting sizable FDI inflows, and second utilizing them to boost economic growth, proficient human capital is a "must."

As for the MENA region's stand on human capital front, low human capital stock and poor productivity are quite a challenge for the region. During the 1990s, GDP per worker in MENA countries on average was 37% that of NIEs, a little over 60% that of the ASEAN countries and 85% of the GDP per worker in the four MERCOSUR countries (Figure 4-2). Dividing MENA countries according to the share of oil in GDP sharpens this picture even more. In the oil-producing countries, these ratios improve slightly, whereas in the non oil-producing MENA countries, those ratios are 22%, 38% and 51% respectively. Equally important with the "level" measures of productivity is the rate at which it grows (changes) over time. Again, as figure 4-2 illustrates, productivity in MENA region was almost constant since 1980; in

fact, it showed a decline at 1.4% yearly on average compared with 4.3% and 3.9% average growth rates a year in NIE's and ASEAN correspondingly[46].

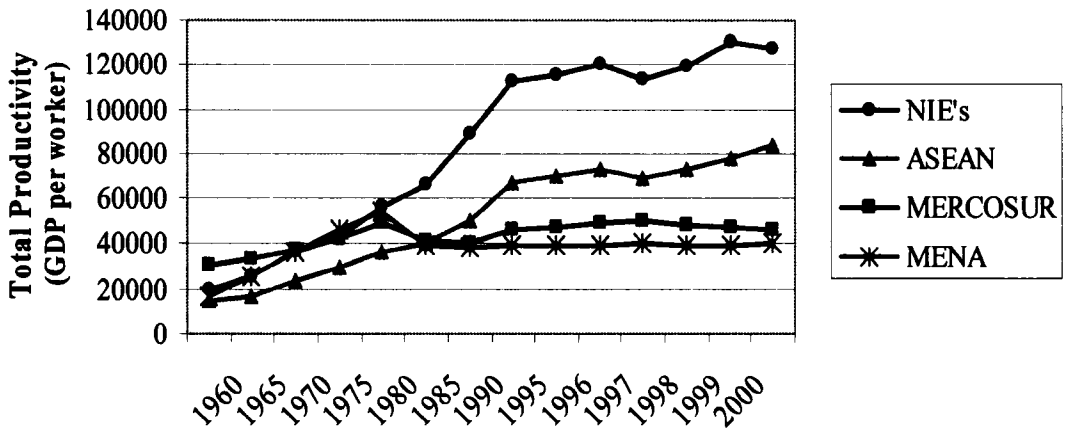

Figure 4-2: Total Productivity Differences across Regions

At the sectoral level, industrial labor productivity differential among regions becomes more evident; it reveals the wideness of the gap between the MENA region and other competitor developing regions. Industrial labor productivity in MENA countries, measured as value added per worker in the manufacturing sector, diminished steadily over the past two decades after a period of flourish that lasted for a few years following the oil-price boom in the late 1970s (figure 4-3). On contrary, other developing regions witnessed a remarkable growth in labor productivity in manufacturing sector, especially in NIEs and ASEAN where industrial productivity grew by 6.5% and 7% yearly, on average. These ratios could have been much higher if the 1997 financial crisis effect was disregarded.

---

[46] Figures and ratios in this section are calculated from the World Bank data available on World Development Indicators CD-ROM, 2003.

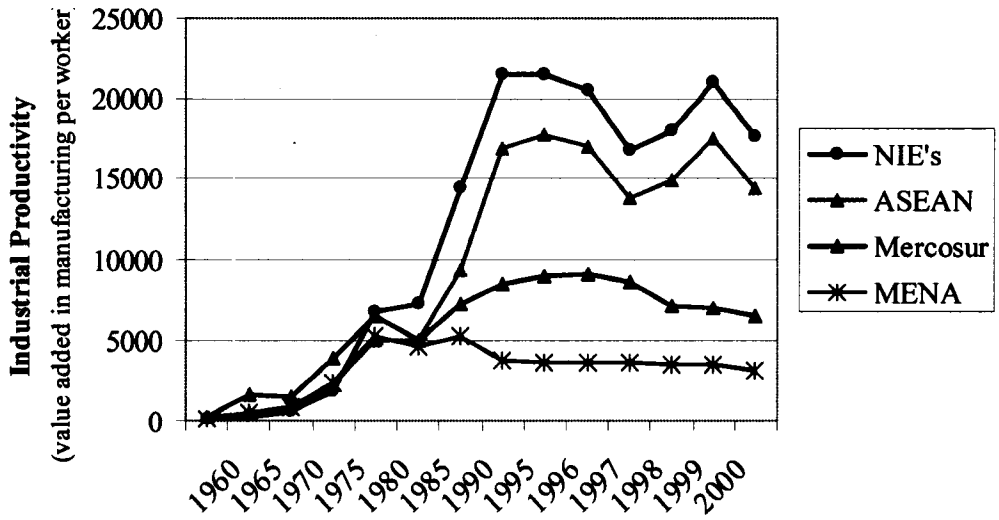

Figure 4-3: Industrial Productivity Differences across Regions

As figure 4-3 shows, since labor productivity per worker in the manufacturing sector in the MENA region was permanently declining, while it was on the rise in other developing regions, the relative productivity gap continued to widen considerably, explaining to a certain extent the modest share of MENA countries in world FDI, and their limited ability to benefit from it. This growing knowledge gap, indicated by low levels of growth and productivity, can be partly explained by the fact that MENA countries lag behind faster-growing developing countries in key human capital essentials, namely education and scientific research and technological development (R&D), both of which will be discussed in turn.

The assessment of the state of education in the MENA region, even using traditional criteria such as enrollment and illiteracy rates and per capita expenditure, reveals tangible success, but also significant areas for further progress. The estimated rate of illiteracy among adults dropped from about 60 % in 1980 to around 40 % by

the end of the 1990s, yet illiteracy rates in MENA countries are still higher than the international average and are even higher than the average in developing countries. Alas, MENA countries embark upon the twenty-first century burdened by such high number of illiterate adults, where computer illiteracy across the globe is receding[47]. Per capita expenditure on education in MENA countries dropped from 20 % of that in industrialized countries in 1980 to 10 % in the mid-1990s (UNDP, 2003). The slowing rate of growth of education spending took place in the context of the macroeconomic difficulties which many countries in the region faced after the mid-1970s, together with the implementation of the IMF-supported structural adjustment programs, in which substantial reduction of public expenditures is a cornerstone; spending on education was not an exception.

Nonetheless, the real problem is the "quality" of education in the MENA region. Problems of quality have led to a significant mismatch between the labor market and development needs on the one hand and the output of education systems on the other. Poor productivity, the prevalence of unemployment among the educated and the deterioration in real wages for the majority of them exemplify this problem. The relevant aspect of the education-quality dilemma in the region lies in its inability to eliminate MENA countries' isolation from global knowledge, information and technology at a time when accelerated acquisition of knowledge and formation of advanced human skills become prerequisites for economic growth and prosperity.

---

[47] There are just 18 computers per 1000 people in the region, compared to the global average of 78.3 computers per 1000 persons. Only 1.6% of the MENA population has Internet access, compared with 68 % in the UK and 79% in the US (UNDP, 2003).

While education deals with the process of building human capabilities, scientific research and technological development (R&D) provides the means through which these capabilities can be utilized to serve development purposes. An effective system of R&D in a country is both the cause and the effect of efficient education systems, especially higher education. The latter is the main source of knowledge for those who are employed by the former, while advanced R&D can, in turn, promote learning especially with respect to advanced knowledge in the higher-education sector. The progress of R&D in the MENA region lies at a critical and fragile juncture. Major obstacles pertaining to producing, accessing and using of knowledge in the region can be summarized in three major problems: weak research performance and poor scientific management, financial difficulties and the lack of research visions and strategies in the absence of an autonomous and liberal research environment.

The outcome of R&D is quantifiable and measurable in terms of number of scientists and scientific papers per unit of population. In MENA region, there are an estimated 371 research scientists and engineers working in R&D per million citizens, compared to a global rate of 979 per million (UNDP, 2003). According to the World Science Report of the United Nations Educational, Scientific and Cultural Organization (UNESCO, 1999), about 3.5 million research papers were published over the last five years worldwide; only 0.3% of them originated in MENA countries[48]. While the region's scientific output increased from 11 research papers per million in 1985 to 26 papers per million in 1995, Korea's output, for example, climbed from 6 to 144 papers per million inhabitants over the same period. In addition to thin production,

[48] Compared to 37% in the EU, 34% in USA and 21% in Asian countries.

quality of scientific research in MENA countries is held back by weak basic research and the almost total absence of advanced research in fields such as information technology and molecular biology. It also suffers from tight R&D expenditures, some of the lowest levels of research funding in the world. Currently, state spending on R&D does not exceed 0.2 percent of GDP, most of which pays only for salaries.

In addition, R&D in MENA countries is not institutionalized, nor is it a part of well-defined, coherent national and regional research strategies or pertinent conceptual frameworks. One of the main results of that has been the subjection of scientific institutions to political strategies and power conflicts. In managing these institutions, political loyalties take precedence over efficiency and knowledge. Research management has been also influenced by decades of experiences with crippling bureaucracies that have hindered creativity and enterprise. Consequently, the link between research and practices of economic, scientific and social development is very weak, and action-oriented research is not well articulated.

What about imported technology? Well, MENA countries' experiments with the transfer and adoption of technology have neither achieved the desired technological advancement nor yielded attractive returns on investments. Importing technology has not led to its adoption and internalization in the region's host countries, let alone to its diffusion and production. This is largely due to MENA countries' failure to attract FDI in a magnitude and type that allow such adoption of advanced technology, which in turn is due to their current poor human capital, a vicious circle that is! Yet, knowledge acquisition, and technological development in general, is influenced by the nature of the production pattern prevailing in the region.

Production in MENA countries is mostly based on traditional, primary commodities, such as agriculture, that do not require advanced skills or technology, and industries specializing in the production of consumer goods, which depend mainly on production licenses obtained from foreign companies, in addition to the depletion of raw materials, chiefly oil. This production pattern, especially the overwhelming dependence on oil extraction, stimulates knowledge development abroad and stifles it in the region whose oil-producing countries, for example, relinquished key knowledge-intensive aspects of oil production to foreign firms, ignoring the need to establish effective national innovation and knowledge production systems.

The transfer, embedding and production of knowledge that can generate new technologies through inward FDI, similar to the experience of the NIE's following the footpath of Japan, then in the ASEAN countries going after NIE's, require an organizational context that provides incentives for knowledge production. Such a context that would promote national capabilities for innovation and consolidate linkages between R&D institutions on one hand and different production sectors on the other is recognizably immature in the MENA region.

The preceding analysis of MENA region's attractiveness for foreign direct investment looks at FDI in a broader context of social, political and economic development. This view is consistent with the theory of the MNC, as discussed in Wilkins (1997) and Rugman (1999), that uses economics as a base, but its application requires the use of analysis from disciplines other than economics, such as political science, sociology and psychology. This "multiple perspectives" approach of using the

lenses of different disciplines to focus on and analyze investments by MNCs, FDI that is, has become the standard for international business theory, Rugman indicated.

Bearing in mind the magnitude and type of FDI MENA countries receive and considering the region's attractiveness for FDI, it seems reasonable now, yet interesting, to explore the relationship, if any, between inward FDI and economic growth as key development indicator. In order to pursue the investigation, chapter five will provide both the theoretical framework and empirical evidence on the FDI-growth relationship in the region.

CHAPTER FIVE

FOREIGN DIRECT INVESTMENT CONTRIBUTION TO ECONOMIC GROWTH IN HOST COUNTRIES: EMPIRICAL STUDY OF CAUSALITY

5-1 Introduction:

The phenomenon of economic growth by and large is quite complex, and the direction of causality typically runs both ways from supposed causes to growth and vice versa. Since FDI is often associated with more than one growth-promoting factor, such as deepening capital formation, greater degree of openness and export proceeds, and certainly the knowledge/technology spillovers, assessing the precise contribution of FDI to economic growth is problematic. In essence, the core of this chapter, and this dissertation to a great extent, is to contribute to the literature on FDI-growth relationship.

The relationship between FDI and growth has been intensely debated in theory, yet empirically, the precise nature and direction of the causality linkage between both variables and the mechanisms through which it works remain insufficiently investigated. The central questions in the empirical analysis of the FDI-growth nexus therefore are: does FDI significantly affect the rate of economic growth, and if it does, through what channels this effect takes place, and finally how would those channels vary from country to country and from region to another?

Investigating causality linkages between FDI and growth in the MENA countries is of crucial importance for the implications it provides for development strategies in the region. If a unidirectional causality from FDI to growth is found, this will support the FDI-stimulated growth hypothesis and provide a strong reason for which countries in the region must strive to improve their attractiveness for FDI. If, on the other hand, the causality process runs in the opposite direction, this would imply that the growth-motivated FDI hypothesis prevails, where the magnitude of FDI inflows depends on the absorptive capacity of the host country. This will indicate the urgency of reforms required in the region to achieve higher growth rates that may be a perquisite to attracting more FDI.

For this purpose, the chapter is organized as follows. Section 5-2 reviews theoretical considerations, including a brief summary of different growth theories and how FDI comes to play within each framework, as well as hypotheses of linkage between FDI and economic growth as suggested in previous empirical studies. Section 5-3 describes the econometrics methodology, data set and hypotheses to be examined. Empirical findings are gathered and interpreted in the following chapter.

5-2 Theoretical Considerations:

The theoretical foundation for research on FDI and growth derives mainly from either the neoclassical growth models or the endogenous (new) growth theory. As theory of growth evolves, the channels through which FDI is seen to influence economic growth also evolve. Discussing how FDI is linked to growth within each of these two frameworks will provide a much-needed conceptual basis for pursuing

empirical testing of FDI-growth causality linkage, especially when it comes to proposing hypotheses and the choice of variables and proxies.

5-2-1 FDI and Growth Theories:

FDI, as an economic growth determinant, has been viewed differently under different growth theories. In the standard neoclassical models, FDI enters the production function as an additional input to production and is treated as additional investment that increases domestic capital stock. According to the endogenous growth theory, on the other hand, the influence of FDI on growth depends crucially on knowledge externalities and the existence of human capital in the host country. In this section, both views are discussed in turn.

5-2-1-1 The Neoclassical Growth Theory:

In the conventional neoclassical growth models, embodying constant returns to scale (CRS) production functions and standard utility maximization behavior, an increase in capital accumulation will create diminishing returns to capital (Solow, 1956). Given such diminishing returns, growth can only occur in the presence of labor force growth or technological advancement, both of which are assumed to be exogenous[49], with the former altering the slope of the production function and the latter shifting it upwards (D. Romer, 1996). In the traditional Cobb-Douglas "production function" approach pioneered by Solow (1957), long-run growth can only result from advances in technology.

$$Y(t) = F(K(t), A(t) \cdot L(t)) \qquad (5.1)$$

---

[49] That is why D. Romer (1996) finds it only a small exaggeration to say that "we have been modeling growth by assuming it."

As equation 5.1 shows, the Solow growth model focuses on four variables: output *(Y)*, capital *(K)*, labor *(L)* and knowledge or the effectiveness of labor *(A)*. Since *A* and *L* enter the production function multiplicatively, *AL* is referred to as "effective labor," and the technological progress that enters in this function is known as labor-augmenting or Harrod-neutral. Time *(t)* enters the function through *K*, *L* and *A*; that is to say, the magnitude of *Y* obtained from given quantities of *K* and *L* rises over time when there is technological progress or knowledge accumulation.

Accordingly, an exogenous increase in investment, whether domestic or foreign, would increase the capital and output per worker, but this would only be temporary as diminishing returns would impose a limit to this growth. Hence, if FDI inflows to the host country generate an addition to the physical capital accumulation, presumably more advanced and more efficient, the economy will be able to produce more output with the same number of workers. In such a case, FDI is linked to growth through generating a net increment in capital per worker. However, the increases in the volume of investment and/or its efficiency as a result of inward FDI will lead to long-term "level" effect and medium-term transitional increases in growth. Due to the diminishing returns to capital conventional assumption, the recipient economy would converge to its steady state, as if FDI had never taken place, leaving no permanent impact on output growth.

Yet, for FDI to have such a level effect on output through capital accumulation, it is important to evaluate the relationship between FDI and domestic investment, specifically the degree of substitutability and complementarity between them. A simplistic Schumpeterian view of FDI-related innovative investment that

emphasizes creative destruction through substitution may overlook the possibility for complementarity between FDI and domestic investment. Innovations embodied in FDI may very well create, rather than reduce, rents accruing to existing technologies (Young, 1993). In addition, if FDI is expected to affect growth positively, it may be argued that it requires some degree of complementarity with domestic investment, at least in the short run, given that the existing factor endowments in the host country act as FDI determinants (de Mello, 1999). Along these lines, Borensztein et al. (1998) found no evidence that FDI "crowded out" domestic investment. On contrary, FDI appeared to encourage capital formation by domestic firms so that a one dollar increase in the net inflow of FDI is associated with an increase in total investment in the host country of more than one dollar.

According to the neoclassical theoretical framework, the only vehicle for growth-enhancing FDI would be through permanent technological shocks. Without technological progress, the diminishing marginal returns to capital (domestic and foreign) would eventually limit economic growth. The problem, though, is that the treatment of technological progress or knowledge or the effectiveness of labor, represented by the variable *A*, is highly incomplete. The model indeed takes as given the behavior of the variable that it recognizes as the driving force of growth. It does not specify what the "effectiveness of labor" is; instead, it identifies *A* as a catchall for factors other than labor and capital that affect output. This way of looking at *A* is not precisely the one that manifests the connection between FDI and growth.

D. Romer (1996) suggested some alternative interpretations of *A*, occasionally referred to as "Solow residual," as a measure of the contribution of technological

progress to output growth. For instance, *A* can be thought of as abstract knowledge, the education and skills of labor, the strength of property rights, the quality of infrastructure or the cultural attitudes toward entrepreneurship. We might also add to the list political stability and institutions' maturity and efficiency. Given these possible interpretations, one can draw a conclusion that might make the connection between FDI and growth in the neoclassical growth theory context become more apparent. Not only can all of these factors be initiated and nurtured through FDI, they are in fact the very same determinants of attractiveness for FDI as analyzed in the previous chapter. That is to say, to the degree the term *A* can explain differences in economic growth across countries and regions, differences in FDI volume and efficacy in promoting growth can be comprehended.

5-2-1-2 Endogenous Growth Theory:

The basic shortcoming of the neoclassical growth models is that while capital accumulation cannot account for long-run growth, the one and only growth determinant is the effectiveness of labor, whose exact meaning is not specified and whose behavior is taken as exogenous. The endogenous growth models, on the other hand, focus on mechanisms which prevent the unbounded diminishing marginal productivity of capital. According to these models, this could come about through virtually two channels, knowledge/technology spillover effects and investment in human capital. The "accumulation of knowledge" proposition is consistent with the Solow model conclusion that capital accumulation is not central to growth, yet here the production (and growth) of knowledge is explicitly modeled rather than taken as

given[50]. The "human capital" strand of the new growth theory, contrary to the Solow model and other neoclassical growth models, sees capital as central to growth; however, it takes a broader view of capital that includes human capital in addition to physical capital (for instance, models presented by Lucas, 1988; P. Romer, 1990; and Mankiw et al., 1992).

P. Romer (1986) suggests that growth rates differ because the positive feedback created by technology diffusion may exceed the negative feedback engendered by diminishing returns to physical capital. He introduces a technology parameter in the production function such that allows the model to generate growth through learning-by-doing and knowledge spillovers. In this context, FDI can play an important role in facilitating these knowledge spillovers across boundaries. The technology gap between developed and developing countries can be bridged through the increase of the stock of knowledge brought about by FDI in the form of creating new products and processes, introducing new administrative arrangements and improving skills of the labor force.

Models by Grossman and Helpman (1991) and Aghion and Howitt (1992) generate growth in a similar way; however, they consider technological progress as an improvement in the quality of the existing products. Grossman and Helpman (1991) represent this process as a quality ladder that firms climb depending on the stochastic nature of R&D process. By incorporating new technologies, and maybe new inputs, in

[50] Basically, these models introduce a research and development (R&D) sector and then model the production of new technologies and the allocation of resources between conventional goods production and R&D. See, for example, Grossman and Helpman (1991) and Aghion and Howitt (1992). Another version of these models is the "learning-by-doing" or "$Y=AK$" models in which the rate of knowledge accumulation depends on how much new knowledge is generated by conventional economic activity (P. Romer, 1986).

the production function, firms obtain monopoly profits as lower-quality products will be forced to exit the market. The inclusion of FDI into the model increases the range of factor endowments where price equalization is possible. International knowledge spillovers occur as MNCs with high technological capabilities and high factor prices find it profitable to locate high technology production in a country with lower capabilities and lower factor prices. Eventually, the home country may become a net importer of high-tech products as the affiliates export their finished products home.

Yet, the role of FDI in prompting growth in host countries is better understood in P. Romer (1990). In this model, Romer generates growth through the creation of human capital, differing from Lucas (1988) in that his model represents the endowment of human capital as the intensity of R&D[51]. Romer indicates that an increase in the intensity of R&D generates growth through a cumulative rise in product innovation. This model also suggests that research and development activities embody positive feedback that increases the variety of intermediate inputs by creating general knowledge and inducing the amount of human capital needed for subsequent innovations. Human capital augmentation via technology or knowledge transfers leads to "process" innovations, by which old goods are produced using newer technologies transferred by means of FDI, leading to increasing returns.

Thus, the new endogenous growth theory in its various formulations provides a framework in which FDI, usually thought of as a composite bundle of capital stocks, know-how and technology, can permanently increase the rate of growth in the host

---

[51] In his paper, Lucas (1988) presented two models of human capital; the first emphasizes human capital accumulation through schooling, and the second emphasizes specialized human capital accumulation through learning-by-doing.

country. As a technology parameter, FDI can generate growth and increasing returns through technology transfers and domestic knowledge spillovers. It is the ability of FDI to transfer not only production know-how but also managerial skills that distinguish it from other forms of foreign capital flows, including portfolio investment, loans and aid. Admittedly, the knowledge transferred to developing countries is most likely to be the preserve of the MNC undertaking the investment; however, knowledge and technology could "spill-over" from the foreign firms to the domestic firms through labor training and skill acquisition and through the introduction of alternative management practices and organizational expertise and through links between foreign firms and local suppliers of components. Haskel et al. (2002) found a significantly positive correlation between a domestic plant's total factor productivity and the foreign-affiliate share of activity in that plant's industry [52]. Moreover, the very presence of foreign firms in the economy with their superior endowments of technology may compel domestic firms to invest in R&D if only to keep abreast of the competition. In turn, increased competition from local firms may compel foreign firms to bring in even more superior quality competition, and so on.

In sum, the new growth theory provides powerful support for the thesis that FDI could be a potent factor in promoting economic growth. Specifically, to the extent that FDI is believed to transfer knowledge, promote learning by doing and result in technology spillovers and human capital augmentation, it should promote growth in the host country. More importantly, policies to attract FDI pursued by developing

---

[52] See also Chuang and Lin (1999), Aitken and Harrison (1999) and Kathuria (2002) for the cases of Taiwanese, Venezuelan and Indian firms, respectively.

countries would have positive effects on economic growth in the host countries if and only if they include incentives to encourage innovation and human capital development.

5-2-2 Potential Directions of Causality:

Following the preceding discussion, one can argue that the direction of causality between FDI and growth may very well depend on the determinants of FDI. If the determinants have strong links with growth in the host countries, growth may be found to cause FDI. Furthermore, it is quite reasonable to think that "growth" itself may be an important determinant of inward FDI volume and efficacy. FDI may be drawn to countries or regions of faster growth or greater potential because their growth prospects have made it more attractive to foreign investors. On the other hand, given capital accumulation and technology transfer associated with FDI inflows, output may grow faster when FDI takes place in other circumstances. Consequently, three possible directions for causality between FDI and economic growth are hypothesized here: FDI-stimulated growth, growth-motivated FDI and the bi-directional causal link; each will be discussed in turn.

5-2-2-1 FDI-Stimulated Economic Growth:

Theory predicts that FDI plays a positive role and effectively contributes to economic growth. Endogenous growth theory in particular provides added persuasive reasons to link R&D, investments in human capital and scale economies, all of which can be created and augmented by MNCs, to the rate of economic growth. The contribution of FDI to host economies' growth can be analyzed in the context of effects of FDI on the basic growth-promoting factors within the framework of

different growth theories, as discussed earlier. The impact of FDI on growth is expected to be manifold and through many different channels. If one were to single out a couple of these major channels suggested by the literature, capital accumulation, productivity and exports would be the leading candidates.

Inward FDI benefits the economy not only by raising its productive capacity, but also because FDI productivity is much higher than domestic investment. It can encourage growth through its impact on capital accumulation by augmenting the quantity and the quality of capital formation. For this matter, to the extent that FDI adds to the existing capital stock, FDI may have growth effects that are analogous to that of domestic investment.

FDI, in addition, can stimulate economic growth due to improved productivity ensuing from adopting the latest technological know-how and managerial skills it brings to the recipient countries. As indicated by the new growth theory, the positive externalities or spillover effects of FDI in host economies may be more crucial than its direct impact mentioned above. The spillover effects occur when advanced technologies and managerial skills embodied in FDI are transmitted to domestic plants simply because of the presence of multinational firms. The technology and productivity of local firms may improve as FDI creates backward and forward linkages and foreign firms provide technical assistance to their local suppliers and customers. More importantly, the competitive pressure exerted by the foreign affiliates may also force local firms to operate more efficiently and introduce new technologies earlier than what would otherwise have been the case (Blomström and Zejan, 1992; Kokko, 1994).

Also, FDI may affect the balance of payments directly and by promoting exports. Not only can FDI alleviate partly or totally the balance-of-payments deficit in the current account, but it also functions to remove that deficit over time if the foreign-owned enterprises can generate net positive flows of export earnings. One way FDI can encourage exports is by setting up assembling plants and helping host firms' access international markets for exports (Aitken et al., 1997).

Empirical studies, nevertheless, have not offered unambiguous conclusion with respect to the FDI-stimulated growth hypothesis. For example, studies by Saltz (1992), Karikari (1992), Kasibhatla and Sawhney (1996) and Carkovic and Levine (2000) do not support this general conclusion of positive relationship between FDI and economic growth.

Saltz presents an empirical analysis of cross-national data for 75 developing countries from 1970-1980. As equation 5.2 shows, the neoclassical growth model used in this study is modified to include the stock of FDI as an independent variable in OLS regressions on growth rates.

$$y = \beta_0 + \beta_1 [I/Y] + \beta_2 LF + \beta_3 OIL + \beta_4 SAH + \beta_5 ln [FDI'/GDP] \qquad (5.2)$$

where y is GDP growth rate, I/Y is gross investment as a ratio to GDP, LF is the growth rate of labor force, OIL and SAH are dummy variables that were added to reflect resource endowment (oil net exporters), and exogenous growth factors (drought is Sahel region), and finally FDI'/GDP is the stock of non-banking FDI as a ratio to GDP. The regression coefficient of FDI was negative and statistically significant, and Saltz concluded that countries with a larger presence of FDI had generally slower rates of growth than expected. In addition, it was noted that although the level of investment

is positively correlated with the stock of FDI, the additional investment that results from FDI does not contribute to growth.

Using data for Ghana for the time period 1961-1988, Karikari employs causality tests proposed by Granger (1969) in examining the relationship between FDI and economic output and finds that FDI did not affect economic output, but increases in economic output did cause a slight decrease in the inflow of direct foreign investment. Besides the limitation of data, Karikari attributes his results to the small size of FDI inflows to Ghana during that period and the import-substitution strategy the government of Ghana used at that time.

Kasibhatla and Sawhney (1996) employ the cointegration and error-correction modeling and test for Granger causality to examine the relationship between GDP and FDI in the USA. The hypothesis that FDI inflows cause GDP is not supported by USA data. However, the alternate hypothesis that GDP causes FDI inflows receives considerable support using causality tests.

Similarly, Crankovic and Levine (2000), whose panel data include 72 countries covering the period 1960-1995, find no significant impact of FDI on growth. The exogenous component of FDI does not exert a significant positive impact on growth or enjoy a strong link with productivity growth. However, the impact on capital accumulation is found to be significant. Yet, the relationship between FDI and capital accumulation is not robust due to the specification of regressions for other capital growth determinants.

Blomström et al. (1994), in contrast, find that inflows of FDI are associated with a higher rate of economic growth for a cross section of countries. Examining

changes over successive 5-year periods, they also found that causality runs from FDI to growth rather than the other way around. They also examined various interactions among education and FDI, education investment and the physical investment ratio and found no significant relationship between these variables and rates of economic growth.

In a new growth theory framework, Balasubramanyam et al. (1996) investigate the role of FDI in the growth process of developing nations under different trade policy regimes. Specifically, they used the cross-sectional data for a sample of forty-six countries for the period 1970-1985 to verify the hypothesis as postulated by Jagdish Bhagwati (1978). According to Bhagwati's hypothesis, the countries with higher degrees of outwardness and openness benefit more from the inflow of FDI than the countries with inwardly-oriented policies. Another important emphasis in their study is the significant role of FDI and human capital interactions in the growth process.

Borensztein et al. (1998) showed that FDI is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment. They used a cross-country regression framework using data on FDI flows from OECD countries to 69 developing countries to estimate the following equation:

$$G = c_0 + c_1 FDI + c_2 FDI * H + c3\ H + c_4 Y_0 + c_5 A \qquad (5.3)$$

where FDI is foreign direct investment, H is the stock of human capital, Y_0 is the initial GDP per capita and A is a set of other variables that affect economic growth such as government consumption, the black market premium on foreign exchange, a measure of political instability, a measure of political rights, a proxy for financial

development, the inflation rate, and a measure of quality of institution. However, their conclusion of higher productivity of growth holds only if the host countries have a minimum threshold stock of human capital.

Olofsdotter (1998) analyzes growth effects of FDI for a cross-section of 50 countries between 1980-1990 using data from the World Investment Directory provided by the United Nations. Her results reveal a positive impact of the growth of FDI on the economic growth rates of the countries, and it appears to be robust with regard to the specifications. This study, however, does not shed any light on the role of FDI on growth related to the overall openness of the country or that of the level of human capital.

More recently, Nair-Reichert and Weinhold (2001) apply a causality-testing framework for panel data to test the effect of FDI on growth in a panel of 24 developing countries over 25 years. They propose the use of mixed fixed and random (MFR) coefficient approach as an alternative estimation method that allows for heterogeneity in the causal relationship between FDI and growth. In particular, they construct a test for causality that allows the strength of causality to vary from country to country and permits heterogeneity of dynamics that is characteristic of a developing country panel. The key results of this econometric analysis indicate that there is indeed considerable heterogeneity across developing countries regarding the impact of FDI and other conditioning variables on economic growth. Their paper also highlights the fact that allowing for heterogeneity in the MFR model produces substantially different results from the traditional panel estimators and suggests that results from models that assume homogeneity across countries should be treated with some caution.

5-2-2-2 Growth-Motivated FDI:

According to the widely accepted framework on the existence of multinational enterprises, Dunning's OLI framework, a firm in one country with a certain "ownership" advantage would open a subsidiary in another country with a "location" advantage, and both advantages can be best captured by "internalizing" production via direct investment. Studies focusing on the location factor, given the other two factors, investigate how the economic performance in a host country, along with other factors, determines the amount and type of FDI flows into that country. As shown earlier in chapter two, in virtually all the empirical studies of demand-side determinants of FDI, real GDP or per capita GDP, as proxies for market size, are found to be highly significant and positively related to FDI flows. In addition, when GDP growth rate was included as one of the explanatory variables, it was proven to be a key location determinant of FDI, in the sense that it reflects a country's development potential that may encourage attracting higher levels of FDI.

Higher growth rate in a country induces higher FDI by expanding markets more rapidly on one hand, and on the other, by signaling to multinational corporations that this country is following favorable policies towards entrepreneurship, FDI included. Export-led high growth rates, supported by export-promotion trade strategy, will most likely result in even higher volume of foreign investment. FDI is expected to increase in a country once investors learn that the country has the potential to export more and has a technological base needed to feed its exporting sector, which in turn guarantees advantageous production relocation. In such case, the major incentive for foreign investors is the perception they get about the distortion-free business

environment such country provides. The absence of artificial policy-imposed barriers to trade promotes the efficient allocation of both imported and domestic resources and the competition it engenders provides a powerful stimulus for foreign investment. It also provides climate for specialization and the generation of economies of scale.

The growth-motivated FDI hypothesis can also be explained, in a more dynamic framework, in the context of the stages models introduced by Dunning (1991) and Ozawa (1992, 2001 and 2003). It is postulated that as the economy continuously grows, new comparative advantages are developed by shifting from technologically less-sophisticated, low-productivity products to more sophisticated, higher-productivity industrial activities, and consequently different stages-based patterns of FDI appear over a certain span of time, a span that is determined by how rapidly a given economy industrializes. These four stages are discussed below briefly.

1- Scarce human capital and the expansion of labor-intensive low-wage manufactures would attract modest "elementary" FDI, which is a low-wage labor-seeking type of FDI in standardized, labor-intensive industries.

2- Adoption and adaptation of advanced technologies would give rise to vertical FDI, induced by factor-price differentials, to take place in resource-extractive and processing industries.

3- Continuous adaptation of imported technology, stepped-up domestic R&D and accumulated human capital on one hand, and expanding market size due to growth on the other, would make the host country attractive to market-seeking horizontal FDI in "differentiated goods," At the same time the share of vertical FDI in total investment falls due to a rise in the host's wage rates.

4- As host economies continue to grow, vertical FDI may disappear entirely and horizontal FDI rises sufficiently such that total FDI is higher than that in previous phases, mainly concentrated in more advanced sophisticated industries.

In sum, although FDI can cause growth, causation can run the other way round as well. Other things being equal, better economic performances in host countries provide a better investment environment and greater opportunities for making profits, and therefore attract greater FDI.

5-2-2-3 A Virtuous Circle:

The most interesting economic circumstances suggest a two-way causal link between FDI and host country's economic growth rate. Countries with fast economic growth not only generate more demand for FDI but also provide better opportunities for making profits and hence may very well end up attracting greater FDI. On the other hand, inward FDI flows may foster economic growth of host countries through positive direct effects and indirectly through spillover effects. Both FDI and economic growth in such case are positively interdependent, leading to a bi-directional causality linkage or a "virtuous circle" (Cantwell, 1987). The virtuous circle is hence nothing but a powerful engine of FDI-driven endogenous growth, fueled by the growing innovative industries with local R&D facilities and rising indigenous technological capacity. The newly established foreign affiliates will in turn increase technological diffusion to suppliers and spur local rivals to a higher rate of innovation (Ozawa and Castello, 2003).

5-3 Empirical Testing for Causality:

The existing studies on the subject have made useful contributions toward an understanding of the role of FDI in economic growth and the effect of economic performance on inward FDI flows. The statistical approach in these studies, however, raises a critical methodological issue. The methodology generally applied in empirical studies of FDI and growth is regression analysis. Only a handful of studies follow alternative approaches, such as growth accounting, as an intermediate step to regressions (de Mello, 1997). Most of those studies estimate, more or less, a simplified version of a growth equation derived from a production function (e.g. Balasubramanyam et al., 1996 and Lipsey, 2000). The most simplified version would link the rate of growth of output to an FDI variable, the rate of growth of capital and labor inputs, and to a set of other variables and interaction terms that help explain growth. Besides the problem of simultaneity and omitted variable biases in the growth equation, all of these investigations make a priori presumption that FDI responds to or causes economic growth, and few studies have considered the feedback and the long-run equilibrium relationship between FDI and economic growth (de Mello, 1997; Zhang, 2001).

Likewise, while estimates obtained from cross-section data are useful in many ways, there is evidence of tremendous parametric variation across countries in regard to estimates of the growth and FDI equations typically used in such contexts (e.g. Blomström et al., 1994; Olofsdotter, 1998; Hermes and Lensink, 2003). Therefore, the main argument against the use of cross-section data and in favor of the use of time-series has been that cross-country studies implicitly impose a common economic

structure and similar production technology across countries which is most likely not true (Zhang, 1999). In addition, the significance of the conclusions drawn from cross-section data is claimed to be insufficient in finding a long-run causal relationship (Enders, 1995 and Marin, 1992). At a more general level, Solow (1994) criticized using the cross-section regressions for growth analysis as being conceptually weak.

Similarly, studies employing panel date techniques, such as Carkovic and Levine (2000) and Reisen and Soto (2001), are criticized for the assumption they make about homogeneity across countries, which makes their results somehow ambiguous (Nair-Reichert and Weinhold, 2001). Some studies have attempted to overcome the problems of cross-section data analysis and the simultaneity bias by utilizing simultaneous-equations models (e.g. 1986; Tsai, 1994; Sharif, 1997 and Bende-Nabende et al., 2000). However, these models were also criticized for their inadequate theoretical foundations and poor econometric methodology (Shan et al., 1999).

It seems more appropriate, therefore, to investigate the FDI-growth nexus for individual countries on the basis of time-series techniques that specifically look into issues of causality between FDI and growth, its mechanism and direction (see, for instance, Tsai, 1991; Khan and Leng, 1997; Ericsson and Irandoust, 2001; Chakraborty and Basu, 2002). In the traditional time-series analysis framework, researchers employ cointegration and error-correction modeling to test for Granger causality, a concept developed by Granger (1969) and later popularized by Sims (1972). The next section presents the methodology adopted in this dissertation to empirically test for causality linkages between FDI and economic growth.

5-3-1 Methodology:

As indicated in section 5-2-2, we have three possible FDI-growth causality linkages: FDI-stimulated growth, growth-motivated FDI and the bi-directional causality scenario. A fourth possibility would be the nonexistence of any causality linkage between inward FDI and growth. In addition, the theory suggests three potential key channels through which the effect can run from FDI to growth, namely capital accumulation and productivity improvement as well as the increase in export earnings. In view of that, the cointegration and error-correction modeling will be utilized, together with testing for Granger-causality, to test the causality in pair-wise relationships drawn from time series data for five variables: inward FDI, exports, productivity, capital accumulation and, of course, economic growth.

5-3-1-1 Granger Causality and the Concept of Cointegration:

The need to examine the assumptions underlying an econometric model estimated from non-experimental time series data, led to the development of the concept of "Granger causality." Basically, the notion of causality is a statistical one and it does not imply any cause-and-effect relationship in a *philosophical* sense. It refers strictly to the concept of predictability (Granger 1980), meaning that a variable X is said to "Granger-cause" a variable Y, if taking into account past values of X and Y together, rather than past values of Y alone, enables better predictions to be made for Y, ceteris paribus. For a simple bivariate model, the pattern of causality can be tested using the following model.

$$Y_t = a_0 + \sum_{i=1}^{k} a_i X_{t-i} + \sum_{j=1}^{l} b_j Y_{t-j} + u_t \qquad (5.4)$$

$$X_t = c0 + \sum_{i=1}^{m} c_i Y_{t-i} + \sum_{j=1}^{n} d_j X_{t-j} + v_t \qquad (5.5)$$

where u_t and v_t, the random error terms, are assumed to be mutually uncorrelated white noise series, and *a*, *b*, *c* and d are parameters to be estimated. According to this approach, four patterns of causality can be distinguished (Anwar et al. 1996):

(1) Unidirectional causality from *X* to *Y*, if $\sum_{i=1}^{k} a_i \neq 0$ and $\sum_{i=1}^{m} c_i = 0$;

(2) Unidirectional causality from *Y* to *X*, if $\sum_{i=1}^{k} a_i = 0$ and $\sum_{i=1}^{m} c_i \neq 0$;

(3) Bi-directional causality relationship, if $\sum_{i=1}^{k} a_i \neq 0$ and $\sum_{i=1}^{m} c_i \neq 0$; and

(4) No causality indicated, if $\sum_{i=1}^{k} a_i$ and $\sum_{i=1}^{m} c_i$ are not statistically significant.

An important requirement for Granger causality testing is that series included in the analysis should be distinct stationary stochastic processes. If one non-stationary time series is regressed on another, the least-squares regressions can generate misleading results, or what Granger refers to as "spurious regression" (Granger and Newbold, 1974). In this case the least-squares estimator is not consistent and the standard t-tests of significance can be misleading.

It is therefore necessary to establish the stationarity properties of the selected data series as well as to test whether they are cointegrated. A series X_t is integrated of order *d*, denoted by *X~I(d)*, if it becomes stationary after differencing d times and X_t contains *d* unit roots. To determine the stationarity of the levels of a time series, unit-root tests need to be conducted. Two widely used unit root tests, the Dickey- Fuller

(DF) tests and the Augmented-Dickey-Fuller (ADF) tests, can be used for checking the probability structure of the data (Dickey and Fuller 1979, 1981). According to the ADF procedure, the following regression is estimated.

$$\Delta X_t = \alpha_0 + \alpha_1 X_{t-1} + \sum_{i=1}^{n} \alpha_{1+i} \Delta X_{t-i} + \varepsilon_t \qquad (5.6)$$

where X_t denotes the variable under consideration, Δ is the first-difference operator, and α_1 is the parameter of the interest. The null hypothesis of non-stationarity is not rejected if α_1 is not significantly different from zero. If the null hypothesis is rejected with the level of the time series, then X_t is said to be integrated of order zero, i.e., *I(0)*. If it is found that several series are integrated of order one, *I(1)* or non-stationary, the next step is to examine the cointegration among series.

A core concern of economic theory is the existence of long-run relationship between variables. The concept of "cointegration," first introduced in the literature by Granger (1981) and further extended and formalized by Engle and Granger (1987), captures such a relationship. Generally, a set of variables is said to be cointegrated or "to move together in the long run" if a linear combination of their individual integrated series, which are *I(d)*, is stationary. One procedure of testing for cointegration and estimating the cointegration vectors is provided by the Johansen test (Johansen, 1991; Johansen and Juselius, 1992). In a bivariate model, the long-run equilibrium relationship between two variables is represented as follows.

$$Y_t = \gamma_1 + \gamma_2 X_t + \varepsilon_t \qquad (5.7)$$

If the residuals from the regression, ε_t, are *I(0)*, then Y_t and X_t are cointegrated and hence interrelated with each other in the long run.

5-3-1-2 Error Correction Models (ECM):

Granger (1988) argues that the standard Granger-causality tests are invalid if the time series are cointegrated, but why? It is the very nature of the cointegration technique which implies that variables are ordered in the model according to their exogeneity. Therefore, if cointegration is established, this would indicate that we may have Granger causality running only in one direction since the other one is already eliminated. As a result, error-correction models (ECM) should be used to investigate causality since ECMs study the short-run dynamics of the variables in the system that are influenced by the deviation from the long-run equilibrium by analyzing how each variable in the cointegrated system responds (or corrects) itself to the residual (or error) from the cointegrating vector. The error-correction term, hence, captures the "speed of adjustment" of each variable in response to a deviation from the long-run steady state. A variable with zero speed of adjustment is Granger non-causal in determining the short-run dynamics of other variables. The precise direction of Granger causality can thus be detected by testing how significantly the error-correction term for each variable differs from zero. A simple bivariate error-correction model, for two series X_t and Y_t that are cointegrated, can be represented as follows.

$$\Delta X_t = \alpha_0 + \beta_0 \, z_{t-1} + \sum_{i=1}^{p} \lambda_{0i} \, \Delta X_{t-i} + \sum_{i=1}^{p} \delta_{0i} \, \Delta Y_{t-i} + \varepsilon_{0t} \qquad (5.8)$$

$$\Delta Y_t = \alpha_1 + \beta_1 \, z_{t-1} + \sum_{i=1}^{p} \lambda_{1i} \, \Delta Y_{t-i} + \sum_{i=1}^{p} \delta_{1i} \, \Delta X_{t-i} + \varepsilon_{1t} \qquad (5.9)$$

where z_{t-1} is the error-correction term lagged one period, which is *I(0)* since X_t and Y_t are cointegrated. The z_{t-1} is equivalent to the ε_t in equation 5.7 and thus represents the disequilibrium residuals of a cointegrating equation. Engle and Granger (1987) argue

that there must be causality running in at least one direction if there is cointegration, since the term z_{t-1} must have a significant coefficient in either 5.8 or 5.9 for the relationship to be valid, that is, for one of the variables to move appropriately to bring the relation to a long run equilibrium.

In the ECM there are two possible sources of causation for X_t and Y_t: lagged X_t and Y_t; that is, the traditional Granger test and the error term z_{t-1}. For example, changes in Y_t might be Granger-caused by X_t either through z_{t-1}, which itself is a function of the linear combination of X_t and Y_t, or through lagged values of the other variable, or both. Inference concerning causality between X_t and Y_t is therefore based on the statistical significance of β_0, β_1, δ_0's and δ_1's. For instance, if both $\beta_1 \neq 0$ and δ_1's $\neq 0$ holds significantly, then X Granger-causes Y. Otherwise, X does not Granger-cause Y.

The advantage of causality inferences drawn from the ECM over the conventional Granger test is that by including the error-correction terms, the information about variables in levels is retained, and the stationarity properties of the variables in the system are taken properly into consideration (Johansen, 1991; Johansen and Juselius, 1992). Yet, the analysis of causality in the ECM is not that straightforward; instead it requires three-step test (Anwar et al., 1996). First, tests are done on the following null hypotheses: $\delta_{0i} = \beta_0 = 0$ and $\delta_{1i} = \beta_1 = 0$ for equations 5.8 and 5.9, respectively. If we fail to reject the null hypothesis, no further testing could be performed, and no causality is detected. If, on contrary, the null hypothesis is rejected, causality is inferred; however, an assessment of the source of causality is needed. Specifically, we need to investigate whether the causality is related to short-run

stationary variation or to the error-correction term, z_{t-1}. The second step, therefore, is to test the significance of the δ_0's and δ_1's to check for the possibility of a short-run causality. The final step is the analysis of the direction of the β's to see if they infer a long-run equilibrium relationship. Furthermore, testing for causality in ECM framework focuses on the speed of adjustment coefficients, β_0 and β_1, that is. A comparison of the sign of a coefficient in the cointegrating equation with the sign of the corresponding β is required to determine whether a variable's long-run movement is consistent with a real economic relation (Anwar et al., 1996).

5-3-1-3 ECM and Causality in Multivariate Systems:

While most of the empirical work on causality between FDI and growth is based on bivariate systems, this type of modeling suffers from specification error. Bivariate causality tests may attribute causality to one or the other of the included variables when in fact an omitted variable may very well have a better claim. This is very true especially when it comes to testing for causality between two variables; GDP is one of them. That is why, as mentioned earlier, the empirical work in this dissertation considers all variables that are thought of by growth theorists to deliver the effect from FDI to growth.

The multivariate ECM specification exploited in this dissertation for causality testing can be considered as major departure from the bivariate equation systems that have been widely used in the literature to examine the causality between FDI and growth. Not only does this specification test for direction of causality between both variables, but also, maybe more importantly, it allows identifying the channels through which this causality, if detected, runs. For the (n x 1) vector of cointegrated series, Y_t=

(Y_{1t}, Y_{2t}, Y_{3t}...Y_{nt}), the error-correction model introduced in equations 1.5 and 1.6 can be generalized to the multivariate version as follows:

$$\Delta Y_{it} = \pi_{it} + \beta' z_{t-1} + \sum_{i=1}^{p} \pi_{1i} \Delta Y_{1,t-i} + \sum_{i=1}^{p} \pi_{2i} \Delta Y_{2,t-i} + \sum_{i=1}^{p} \pi_{3i} \Delta Y_{3,t-i} + \ldots \ldots +$$

$$\sum_{i=1}^{p} \pi_{ni} \Delta Y_{n,t-i} + \epsilon_{it} \qquad (5.10)$$

For the multivariate ECM introduced in equation 5.10, the Granger causality tests are performed by testing whether the coefficients of $\Delta Y_{2,t-i}$, $\Delta Y_{3,t-i}$, ..., $\Delta Y_{n,t-i}$ are significantly different from zero, as well as testing for the significance of the error-correction term coefficients, β'. With this specification, changes in Y_t can be attributed not only to changes in the rest of the variables included in the model, that is, the traditional Granger causality inference, but also to the long-run relationship among all variables, implied in the first place by the existence of cointegration.

This unique feature of the ECM allows for any previous deviation from the long-run equilibrium, measured by the error-correction term z_{t-1} to exert potential influences on the movement of Y_t. Toda and Phillips (1994), thus, indicate that this latter type of causality may be termed "long-run causality," while the former type of causality can be referred to as "short-run causality." In sum, the ECM conveniently combines the short-run dynamics as well as the long-run adjustment, introducing two sources of causality that can better model the linkages between FDI and growth.

5-3-1-4 Impulse Response Function and Variance Decomposition:

The interpretation of individual coefficients in the error-correction models is quite difficult, especially in multivariate systems when more than one cointegrating equation is present. Therefore, researchers using this technique depend mainly on two

tools to inspect the dynamic relationship among variables included in the model (see Lutkepohl and Reimers (1992) for a good discussion). The Impulse Response Function (IRF) technique was introduced by Sims (1980) as a tool to investigate the direction and channels of interrelationship among variables. The IRF traces the effect of a one-time shock to one of the innovations on current and future values of the endogenous variables. The IRF for two-variable case can be presented in the following matrix form:

$$\begin{bmatrix} Y_t \\ X_t \end{bmatrix} = \begin{bmatrix} \mu_y \\ \mu_x \end{bmatrix} + \sum_{i=0}^{\infty} \begin{bmatrix} \phi_{11}(i) & \phi_{12}(i) \\ \phi_{21}(i) & \phi_{22}(i) \end{bmatrix} \begin{bmatrix} \varepsilon_{yt-i} \\ \varepsilon_{xt-i} \end{bmatrix} \qquad (5.11)$$

This representation, the moving average representation, is a useful means to analyze the interaction between the Y_t and X_t sequences. Enders (1995) refers to the four elements $\phi_{jk}(0)$ as "impact multiplier," and the coefficients of ϕ_i can be used to generate the effects of ε_{yt} and ε_{xt} shocks on the entire time paths of Y_t and X_t. For instance, the coefficient $\phi_{12}(0)$ is the instantaneous impact of one-unit change in ε_{yt}. Similarly, the elements $\phi_{11}(1)$ and $\phi_{12}(1)$ are the one period responses of Y_t to unit changes in ε_{yt-1} and ε_{xt-1} respectively. The four sets of coefficients $\phi_{11}(i)$, $\phi_{12}(i)$, $\phi_{21}(i)$ and $\phi_{22}(i)$ are the IRF's. Plotting the IRF's, that is, the coefficients of $\phi_{jk}(i)$ against i, is a practical way to visually represent the behavior of Y_t and X_t series in response to various shocks.

Forecast Error Variance Decomposition (FEVD or VD), on the other hand, separates the variation in an endogenous variable into the component shocks to the ECM. Therefore, VD provides information about the relative significance of each

random innovation, or shock, in affecting the rest of the variables in the model. Specifically, it tells us the proportion of the movements in Y_t, for example, due to its own shocks versus shocks to other variables (Enders, 1995). If ε_{xt} shocks failed to explain any of the forecast error variance of Y_t at all forecast horizons, then Y_t sequence is said to be exogenous; that is, it would evolve independently of ε_{xt} shocks and X_t sequence. On contrary, Y_t would be entirely endogenous if ε_{xt} shocks could explain all the forecast error variance of Y_t at all forecast horizons. Empirically, it is typical for a variable to explain almost all its forecast error variance at short horizons, and smaller proportions at longer horizons. Using the same notation of 5.10, the proportions of $\sigma_y(n)^2$ due to shocks in the ε_{yt} and ε_{xt} at forecast horizon n are as follows:

$$\frac{\sigma_y{}^2[\phi_{11}(0)^2 + \phi_{11}(1)^2 + ... + \phi_{11}(n-1)^2]}{\sigma_y(n)^2} \qquad (5.12)$$

$$\frac{\sigma_x{}^2[\phi_{12}(0)^2 + \phi_{12}(1)^2 + ... + \phi_{12}(n-1)^2]}{\sigma_y(n)^2} \qquad (5.13)$$

The results based on IRF and FEVD are generally found to be sensitive to the lag length used and the ordering of the variables in the system. By construction, the errors in any equation in the ECM are usually serially uncorrelated; however, there could be contemporaneous correlations across errors of different equations. In the case where there is more than one common trend, alternative orderings of the trends may affect the results of IRF and FEVD if the common trends are themselves not absolutely uncorrelated (Masih and Masih, 2001). In standard applications of IRF and FEVD, these errors are orthogonalized through Choleski decomposition, which is not

unique, since the number of moving average representations for any given ECM is not finite. In order to circumvent this problem, in this dissertation we implement the generalized impulse response analysis provided and applied in Lee et al. (1992), Lee and Pesaran (1993) and Pesaran et al. (1993). Unlike standard IRF, generalized IRF's are not sensitive to the ordering of the variables and do not assume that when one variable is shocked, all other variables are switched off.

5-3-2 Data and Variables Definitions:

The source of data used in this study is the World Development Indictors (WDI) CD-ROM (World Bank, 2003). The database available on this CD-ROM has yearly data on 575 time-series indicators, compiled from various sources, covering the period 1960-2001. However, the availability of data, especially for FDI, varies across countries. FDI data are only available after 1970, yet for many countries even 1970 is not the earliest year[53].

As mentioned earlier, the set of relevant variables for this study includes the following: GDP, capital accumulation, exports, inward FDI and productivity. Except for the productivity proxy, all other series were collected directly from the WDI CD-ROM. All data are expressed in real terms (1995 prices), and as is common in the literature, each variable is used in the logarithmic form[54].

---

[53] The statistics on FDI are based mainly on balance of payments data reported by the International Monetary Fund (IMF), supplemented by data reported by the Organization for Economic Cooperation and Development (OECD) and official national sources. Therefore, FDI data suffer from deficiencies relating to definitions, measures, coverage and cross-country comparability.

[54] The WDI reports annual net FDI inflows in current US dollars. The series was converted to real value to match the rest of the variables, using appropriate deflator for 1995.

For real GDP, ***GDP (constant 1995 US$)*** series is used. WDI defines this series as "the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 1995 U.S. dollars. Dollar figures for GDP are converted from domestic currencies using 1995 official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used,"

Gross capital formation (constant 1995 US$) is used as a proxy for real capital accumulation. The definition provided on WDI for this series is "Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and 'work in progress.' According to the 1993 SNA, net acquisitions of valuables are also considered capital formation. Data are in constant 1995 U.S. dollars."

As for real exports, ***exports of goods and services (constant 1995 US$)*** is used. This series is described as "the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight,

insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude labor and property income (formerly called factor services) as well as transfer payments. Data are in constant 1995 U.S. dollars."

As indicated on the WDI CD-ROM, the original sources of the previous three series are World Bank national accounts data and OECD National Accounts data files, whereas the IMF International Financial Statistics and Balance of Payments databases, as well as the World Bank's Global Development Finance Report are the initial sources for FDI inflows data. The WDI working definition of ***foreign direct investment, net inflows (BOP, current US$)*** based on the IMF guidelines is "net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows in the reporting economy." Since this series is expressed in current U.S. dollars, it was converted to real terms by using the appropriate deflator for 1995.

The ***value added per worker in manufacturing sector*** is our proxy for productivity. This series was generated by using other preliminary series collected from the WDI CD-ROM; specifically, it is the ratio between value added in manufacturing and number of workers in industrial sector. ***Manufacturing, value added (constant 1995 US$)*** series refers to "industries belonging to ISIC divisions 15-37. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of

fabricated assets or depletion and degradation of natural resources. The origin of value added is determined by the International Standard Industrial Classification (ISIC), revision 3. Data are expressed constant 1995 U.S. dollars." The sources of this series are World Bank national accounts data and OECD National Accounts data files.

The number of workers in the industrial sector is calculated by multiplying the total labor force times the percentage of employment in industry. ***Total labor force*** comprises "people who meet the International Labor Organization definition of the economically active population: all people who supply labor for the production of goods and services during a specified period. It includes both the employed and the unemployed. While national practices vary in the treatment of such groups as the armed forces and seasonal or part-time workers, in general the labor force includes the armed forces, the unemployed and first-time job-seekers, but excludes homemakers and other unpaid caregivers and workers in the informal sector."

Employment in industry is "the proportion of total employment recorded as working in the industrial sector. Employees are people who work for a public or private employer and receive remuneration in wages, salary, commission, tips, piece rates, or pay in kind. Industry includes mining and quarrying (including oil production), manufacturing, electricity, gas and water, and construction, corresponding to major divisions 2-5 (ISIC revision 2) or tabulation categories C-F (ISIC revision 3)." The labor statistics source is International Labor Organization, Key Indicators of the Labor Market database.

5-3-3 Hypotheses:

Not only is this study concerned with investigating the existence of causal relationships between FDI and economic growth, or the direction of such causality, but also with the channels through which this relationship takes place. Moreover, we argue that these channels vary from one country to another due to region-specific factors even more than country-specific factors. Therefore, the analysis in this study will include eleven countries representing three major developing regions. The sample countries are: four ASEAN countries (Malaysia, Philippines, Singapore and Thailand), three MERCOSUR countries (Argentina, Brazil and Paraguay) and four MENA countries (Egypt, Morocco, Tunisia and Turkey). In this context the major hypotheses are:

- H_1: A causal relationship running from FDI to growth exists in both ASEAN and MERCOSUR countries.
- H_2: FDI is insignificant for growth in MENA countries because of the anti-FDI factors discussed earlier that limit the magnitude of inward FDI they receive and make its contribution to growth minimal.
- H_3: A bi-directional causal relationship between FDI and growth is most likely to exist in ASEAN sample countries due to higher purchasing power, faster technology changes and export-promotion policy.
- H_4: The export channel is expected to be dominant in ASEAN, whereas in MERCOSUR the capital accumulation channel plays the leading role.
- H_5: There is some degree of complementarity between FDI and domestic capital formation, at least in the short run, given the fact that some of the

investment-promoting factor endowments in the host country act as FDI determinants. In short, FDI and domestic investment reinforce each other; that is, no crowding-out effect is expected to be found.

- H_6: FDI does not, in itself, transfer sufficient volumes of human capital; instead, it augments the existing human capital stock countries possess. That is, FDI will always enhance labor productivity; however, this effect is stronger in countries with higher level of human capital endowments.

Since the methodology is identified, hypotheses are proposed; empirical findings are gathered and interpreted in the next chapter, together with main conclusions and policy implications.

CHAPTER SIX

EMPIRICAL FINDINGS AND POLICY IMPLICATIONS

6-1 Introduction:

This chapter is devoted to reporting findings of empirical analysis based on the methodology explained and data described in the previous chapter. Interpretations of these findings will help clarify the effect of foreign direct investment on growth as well as illuminate important policy implications, particularly from a regional perspective. Specifically, the purpose of the empirical study carried out in this dissertation is to examine the dynamic relationships among the key five macroeconomic variables, suggested by theory that determine the nature of the causality between inward FDI and growth in host countries, namely: FDI inflows, exports, domestic investment, productivity and GDP.

The Error Correction Model (ECM) is the main technique used to investigate these interrelated relationships in eleven sample countries representing two major developing regions, South East Asia and Latin America, in addition to the MENA region, over the period 1970-2001. The first step of the analysis involves testing for stationarity of each series in the model. For this purpose, the Augmented Dickey-Fuller (ADF) unit root test is performed. If the non-stationary series are found to be integrated of the same order, the second step is to conduct Johansen cointegration test to check if there is a long-run relationship (equilibrium) between the variables.

If cointegration is established, this will imply that the time paths behavior of the cointegrated variables is influenced by the deviation from the log-run equilibrium. That is to say, if the system is out of equilibrium, the movements of at least one of the variables must respond to the magnitude of the disequilibrium so as to bring the system back to the long-run steady state. These dynamics are best captured by estimating the Error-Correction Model (ECM), which is the third step of the analysis. Testing for causality in the ECM context, as a fourth step, allows us to examine the direction of causality between FDI and GDP, as well as provides some insight with regard to the mechanism through which this causality runs in each country. Finally, we conduct two explanatory tests to further investigate the dynamic relationships among the variables, namely Impulse Response Functions (IRF) and Forecast Error Variance Decomposition (FEVD). While the IRF traces the effects of a shock to one variable on to the other variables in the model, FEVD separates the variation in a variable into the component shocks to the ECM so as to provide information regarding the relative importance of each random innovation in affecting the variables in the ECM. The econometric analysis in this dissertation is performed using the Econometric Views (EViews 5) software package.

Following this introduction that summarizes the methodology applied in this study, chapter six is organized as follows. Section 6-2 presents the unit root test results. Johansen cointegration test results are described in section 6-3. The validity of our hypotheses is examined in the light of causality testing findings that are explained and interpreted in section 6-4. IRF and FEVD findings are discussed in section 6-5.

6-2 Unit Root Tests:

The starting point to pursue the empirical analysis is to study the integration properties of series. The order of integration in each series, in every country, is tested using the Augmented Dickey-Fuller (ADF) test. The variables included in the model are defined as follows:

LFDI: logarithm of real net inflows of foreign direct investment

LEX: logarithm of real exports

LINV: logarithm of real gross capital formation (domestic investment)

LPRO: logarithm of real manufacturing productivity

LGDP: logarithm of real gross domestic product

ADF test results for both levels and first difference for each series are presented in table 6-1. For the series levels, comparing the ADF test statistics with the test critical values[55] reported at the bottom of the table indicates that the null hypothesis of non-stationarity cannot be rejected at any significance level; that is to say, all the series are found to be non-stationary. For the series' first difference, the null hypothesis can be rejected, implying that those series are integrated of order one, *I(1)*. The lag length for each series is computed in EViews automatically based on Schwarz info criterion test (SIC)[56].

---

[55] Dickey and Fuller (1979) show that unit root test statistic does not follow the standard t-distribution, and they derived asymptotic results and simulated critical values for various test and sample sizes. MacKinnon (1991 and 1996) implement a larger set of simulations and estimate response surfaces for the simulation results, allowing for the calculation of Dickey-Fuller critical values for arbitrary sample sizes. EViews 5 uses MacKinnon's (1996) critical value calculations in constructing unit root test output.

[56] For more details, see EViews 5 User's Guide, 2004, pp. 506-507 and pp. 513-514.

Table 6-1: Augmented Dickey-Fuller Unit Root Test Results†

Series	ADF Test Statistics		Series	ADF Statistics	
	Levels	1st Difference		Levels	1st Difference
Argentina			**Philippines**		
LFDI	-1.336	-5.468	*LFDI*	-1.907	-7.055
LEX	-0.205	-6.861	*LEX*	-0.518	-5.802
LINV	-1.770	-5.438	*LINV*	-1.871	-4.525
LPRO	-1.474	-7.148	*LPRO*	-0.717	-5.493
LGDP	-1.120	-5.465	*LGDP*	-1.386	-3.373*
Brazil			**Singapore**		
LFDI	-0.837	-5.879	*LFDI*	-1.590	-5.754
LEX	-0.378	-6.476	*LEX*	-1.573	-4.245
LINV	-1.561	-5.139	*LINV*	1.066	-4.719
LPRO	-1.992	-4.601	*LPRO*	-1.962	-3.185*
LGDP	-1.577	-3.605*	*LGDP*	-1.326	-4.786
Egypt			**Thailand**		
LFDI	-1.775	-6.184	*LFDI*	-1.188	-6.820
LEX	0.039	-5.241	*LEX*	0.263	-6.048
LINV	-1.297	-3.687	*LINV*	-2.150	-4.649
LPRO	-0.315	-6.560	*LPRO*	-1.351	-4.039
LGDP	-0.739	-3.656	*LGDP*	-1.399	-3.537*
Malaysia			**Tunisia**		
LFDI	-1.719	-4.209	*LFDI*	-2.016	-5.700
LEX	2.440	-4.893	*LEX*	-0.848	-6.863
LINV	-1.060	-5.757	*LINV*	-1.749	-6.795
LPRO	-0.923	-4.600	*LPRO*	-2.501	-4.761
LGDP	-0.347	-5.235	*LGDP*	-1.384	-6.742
Morocco			**Turkey**		
LFDI	-1.751	-7.465	*LFDI*	-0.627	-8.658
LEX	0.918	-7.090	*LEX*	-1.473	-5.342
LINV	-1.897	-6.276	*LINV*	-1.069	-5.633
LPRO	-2.111	-3.693	*LPRO*	-1.812	-5.442
LGDP	-2.272	-9.247	*LGDP*	-0.813	-5.805
Paraguay					
LFDI	-1.683	-5.756			
LEX	-0.919	-5.972			
LINV	-1.403	-5.004			
LPRO	-1.611	-3.381*			
LGDP	-1.299	-3.085*			

† Constant and linear trend are included in test equations. The critical values for ADF test at 1%, 5% and 10% level of significance are -3.654, -2.957 and -2.617, respectively.
(*) denotes statistical significance at 5%.

6-3 Evaluating the Long-Run Relationships:

Since all series are found to be integrated of the same order, the next step of analysis entails testing for the long-run relationships; in other words, for the presence of cointegrating equations (vectors) among the set of variables considered in this study. Johansen's cointegration test results for all eleven countries are reported in table 6-2. For each country, the first row gives the "eigenvalues" (E_i) or the characteristics roots. Based on these values, this test involves calculating two statistics, Trace statistics (λ_{trace}) and Max-Eigen statistics (λ_{max}), as follows:

$$\lambda_{trace}(r) = -T\sum_{i=r+1}^{n}\ln(1-E_i) \qquad \lambda_{max}(r, r+1) = -T\ln(1-E_{r+1})$$

where E_i is the estimated values of the characteristics roots and T is the number of usable observations. Both statistics are given in table 6-2 on the second and third row, respectively, under all possible hypothesized number of cointegrating equations, r.

The first statistic, (λ_{trace}), tests the null hypothesis that the number of cointegrating equations is less than or equal to r against a "*general*" alternative. For example, in case of Argentina, in order to test the null hypothesis of $r = 0$ against the general alternative of $r = 1, 2, 3$ or 4, we compare the calculated value of λ_{trace} (80.74) with the critical values of λ_{trace} reported at the bottom of the table, (68.52) and (76.07) at 5% and 1% level of significance, respectively. In such a case, we reject the null hypothesis of $r = 0$ at both levels. For $r \leq 1$, we fail to reject the null hypothesis at 5% and 1% since the calculated value of λ_{trace} (39.06) is less than the corresponding critical values, (47.21) and (54.46). Therefore, the Trace test in the case of Argentina indicates the existence of one cointegrating equation, which is reported in table 6-2 on the furthest column to the right.

Table 6-2: Johansen Cointegration Test Results*

Countries	Test Statistics	Hypothesized Number of Cointegrating Equations (CE), *k*					No. of CE(s)	
		$(r) = 0$	$(r) \leq 1$	$(r) \leq 2$	$(r) \leq 3$	$(r) \leq 4$	5%	1%
Argentina	Eigenvalue	0.76	0.53	0.34	0.16	0.00		
	λ_{trace} †	80.74	39.06	17.20	4.99	0.01	1	1
	λ_{max} ††	41.68	21.85	12.21	4.99	0.01	1	1
Brazil	Eigenvalue	0.66	0.53	0.44	0.20	0.00		
	λ_{trace}	76.26	44.94	23.15	6.51	0.04	1	1
	λ_{max}	31.32	21.79	16.64	6.48	0.04	0	0
Egypt	Eigenvalue	0.84	0.51	0.33	0.25	0.00		
	λ_{trace}	77.62	33.37	16.35	6.89	0.06	1	1
	λ_{max}	44.25	17.02	9.46	6.83	0.06	1	1
Malaysia	Eigenvalue	0.60	0.59	0.50	0.29	0.14		
	λ_{trace}	86.28	60.06	34.09	14.18	4.30	3	2
	λ_{max}	26.22	25.97	19.92	9.88	4.30	0	0
Morocco	Eigenvalue	0.70	0.56	0.42	0.21	0.12		
	λ_{trace}	82.15	48.29	25.40	10.12	3.48	2	1
	λ_{max}	33.86	22.88	15.29	6.64	3.48	1	0
Paraguay	Eigenvalue	0.67	0.61	0.45	0.20	0.03		
	λ_{trace}	84.78	52.39	24.72	7.30	0.74	2	1
	λ_{max}	32.38	27.68	17.42	6.56	0.74	1	0
Philippines	Eigenvalue	0.64	0.61	0.37	0.30	0.01		
	λ_{trace}	72.22	45.99	21.74	9.59	0.26	1	0
	λ_{max}	34.23	24.25	12.15	9.33	0.26	1	0
Singapore	Eigenvalue	0.84	0.60	0.47	0.28	0.00		
	λ_{trace}	96.99	49.00	25.27	8.67	0.03	2	1
	λ_{max}	47.98	23.73	16.61	8.63	0.03	1	1

(continued)

Countries	Test Statistics	Hypothesized Number of Cointegrating Equations (CE), k					No. of CE(s)	
		$(r) = 0$	$(r) \leq 1$	$(r) \leq 2$	$(r) \leq 3$	$(r) \leq 4$	5%	1%
Thailand	**Eigenvalue**	0.76	0.72	0.33	0.24	0.23		
	λ_{trace}	102.20	61.73	26.17	14.94	7.23	2	2
	λ_{max}	40.46	35.56	11.23	7.72	7.23	2	2
Tunisia	**Eigenvalue**	0.87	0.63	0.42	0.25	0.06		
	λ_{trace}	113.59	54.28	25.75	9.95	1.79	2	2
	λ_{max}	59.31	28.53	15.80	8.17	1.79	2	2
Turkey	**Eigenvalue**	0.88	0.53	0.48	0.25	0.11		
	λ_{trace}	109.60	50.71	29.44	11.13	3.13	2	2
	λ_{max}	58.90	21.27	18.31	8.00	3.13	1	1

* We have tested for the existence of a deterministic linear trend in our five series (LFDI, LEX, LINV, LPRO and LGDP), with a lag interval, in first differences, determined based on Akaike Information Criterion (AIC).

† The critical values for the λ_{trace} for $r = 0$, $r \leq 1$, $r \leq 2$, $r \leq 3$ and $r \leq 4$ test at 5% level of significance are 68.52, 47.21, 29.68, 15.41 and 3.76; and at 1% level of significance they are 76.07, 54.46, 35.65, 20.04 and 6.65 respectively.

†† The critical values for the λ_{max} for $r = 0$, $r \leq 1$, $r \leq 2$, $r \leq 3$ and $r \leq 4$ test at 5% level of significance are 33.46, 27.07, 20.97, 14.07 and 3.76; and at 1% level of significance they are 38.77, 32.24, 25.52, 18.63 and 6.65; respectively.

† †† The nonstandard critical values for both λ_{trace} and λ_{max} are simulated by Osterwald-Lenum, 1992.

The Max-Eigen statistic, in contrast, has a "*specific*" alternative hypothesis; that is, it tests the null hypothesis that the number of cointegrating equations is r against the alternative of r+1 cointegrating equations. For instance, in the case of Tunisia, when testing the null of $r = 0$ against the alternative hypothesis of $r = 1$, we reject the null hypothesis since the calculated value of λ_{max} (59.31) is greater than the critical values of λ_{max}, (33.46) and (38.77). However, the null hypothesis of $r \leq 1$ is rejected only at 5% level of significance as λ_{max} (28.53) is greater than the critical value at 5% (27.07) but less than the critical value at 1% (32.24). The Max-Eigen test,

in the case of Tunisia, hence, indicates the existence of two cointegrating equations at 5% level of significance and one cointegrating equation at 1%.

As table 6-2 reveals, at least one cointegrating equation (vector) is found in all eleven sample countries, indicating the existence of a long-term relationship among the five variables in each and every country. Dickey et al. (1991) note that cointegrating vectors can be thought of as representing constraints that an economic system imposes on the movement of the variables in the system in the long run. Therefore, the greater the number of cointegrating vectors, the more stable the system would be. It is noteworthy that λ_{trace} and λ_{max} statistics sometimes give conflicting results. Johansen (1991) argues that such conflicting results arise from the low power of the test in cases when the cointegration relationship is quite close to the non-stationary boundary. The λ_{trace} test, however, is said to have more power than the λ_{max} test since it takes into account all alternative hypotheses (Ghirmay et al., 2001). Therefore, in the conflicting cases, the decision is made based on Trace statistic.

The presence of cointegration among variables included in the system implies that the time paths behavior of those variables is influenced by the deviation from the log-run equilibrium. Therefore, the error-correction modeling ought to be used to analyze how each variable responds (or corrects) itself to the residual (or error) from the cointegrating vector. Intuitively, this process rejects the non-causality hypothesis among variables since at least one of them must respond to the magnitude of the disequilibrium so as to bring the system back to the long-run steady state.

As is well known, the cointegrating vectors are not identified unless we impose some arbitrary normalization. Typically, one of the variables is used to normalize the

cointegrating vector by fixing its coefficient at unity (Enders, 1995). The normalized cointegrating vectors are reported in table 6-3. A comparison of the sign of a coefficient in the cointegrating equation with the sign of the error-correction term coefficient will help determine whether a variable's long-run movement is consistent with a real economic relation.

Table 6-3: Normalized Cointegrating Vectors on *LFDI* *

Countries	Normalized Cointegrating Vectors
Argentina	$LFDI - 5.85LEX - 5.14LINV - 4.45LPRO + 17.1LGDP = Z_{t-1}$
Brazil	$LFDI + 14.02LEX - 22.38LINV + 17.19LPRO - 76.77LGDP = Z_{t-1}$
Egypt	$LFDI + 1.76LEX - 1.99LINV - 1.76LPRO + 5.88LGDP = Z_{t-1}$
Malaysia	$LFDI - 50.83LEX - 31.34LINV - 6.07LPRO - 132.26LGDP = Z_{t-1}$
Morocco	$LFDI - 10.15LEX + 17.78LINV + 3.41LPRO - 1.55LGDP = Z_{t-1}$
Paraguay	$LFDI + 35.26LEX + 138.39LINV - 67.10LPRO - 173.36LGDP = Z_{t-1}$
Philippines	$LFDI - 5.14LEX - 32.32LINV - 57.94LPRO - 29.04LGDP = Z_{t-1}$
Singapore	$LFDI - 2.06LEX - 11.32\ LINV - 18.40LPRO - 28.33LGDP = Z_{t-1}$
Thailand	$LFDI - 7.14LEX - 0.51LINV - 0.97LPRO - 11.48LGDP = Z_{t-1}$
Tunisia	$LFDI - 7.07LEX - 4.47LINV + 3.13LPRO - 6.87LGDP = Z_{t-1}$
Turkey	$LFDI + 0.30LEX + 0.38LINV - 1.70LPRO - 0.64LGDP = Z_{t-1}$

* This table is based on estimates obtained from E-Views output for the Johansen cointegration test for the eleven countries.

From the perspective of a typical structural equation or the cointegrating equation (5.7), the signs of the coefficients are reversed because they appear on the left-hand side of the equations. The error term on the right-hand side, therefore, describes departures from long-run equilibrium and is equivalent to the error-correction term, z_{t-1}, as described in equation (5.10). The error-correction term coefficients, β's, usually referred to as the "speed of adjustment" coefficients, are of particular interest. They have important implications for the dynamics of the system since they capture the speed of adjustment at which each variable responds to a deviation from the long-run steady state. As far as causality is concerned, a variable with zero speed of adjustment is Granger non-causal in determining the short-run dynamics of other variables. The precise direction of Granger causality can thus be detected by testing how significantly the error-correction term for each variable differs from zero.

Focusing on the long-run relationship between foreign direct investment and GDP, from economic perspective, *LGDP* is seen positively related with *LFDI* in equations where the *LGDP* coefficient has a negative sign. In this case, if the error-correction term is positive, then either *LFDI* is too high or *LGDP* is too low, and the adjustment back to equilibrium in later periods requires that either *LFDI* fall or *LGDP* rise; in fact, any combination of the two variables moving correctly will bring the system back to equilibrium. Therefore, the speed of adjustment coefficient should be negative for *LFDI* and positive for *LGDP*. On the other hand, if *LGDP* has a positive coefficient in the cointegrating equation, implying a negative economic relationship to *LFDI*, then the adjustment over subsequent periods would have both *LFDI* and *LGDP*

decline to return to equilibrium. Logically, if there is a negative shock, that is, if the error-correction term is negative, the movements are reversed, yet the signs should be the same.

The comparison of these signs is given in table 6-4. The first two columns to the left contain the countries where the coefficient of *LGDP*, π_{GDP}, is negative, indicating a positive long-run relationship between foreign direct investment and GDP. Let β_{GDP} and β_{FDI} denote the speed of adjustment coefficients for *LGDP* and *LFDI*, respectively. As mentioned before, the appropriate signs on the speed of adjustment coefficients for a positive value of z_{t-1} should be negative for *LFDI* and positive for *LGDP*. Therefore, countries with $\beta_{FDI} < 0$ and $\beta_{GDP} > 0$ are those whose cointegrating variables exhibit behavior consistent with theory. On the other hand, the third and the fourth columns represent countries where π_{GDP} is positive. In such a case, since both *LFDI* and *LGDP* should decline to offset disequilibria, the correct signs on both β_{FDI} and β_{GDP} should be negative.

In addition, it is important to compare the significance levels of the β's to determine which variable is moving to maintain the long-run equilibrium. For example, Malaysia has both β's that move in the correct directions, but β_{FDI} is insignificant. Therefore, the equilibrium between *LFDI* and *LGDP* is maintained by movements in *LGDP* only. Following the same approach, tables 6-5, 6-6 and 6-7 illustrate the speed of adjustment coefficient for the long-run relationships between *LFDI* on the one hand and *LEX, LINV* and *LPRO* on the other.

Table 6-4: Speed of Adjustment Coefficients for *LFDI* and *LGDP*

β's / Variable	$\pi_{GDP} < 0$		$\pi_{GDP} > 0$	
LGDP	$\beta_{GDP} < 0$	$\beta_{GDP} > 0$	$\beta_{GDP} < 0$	$\beta_{GDP} > 0$
	Brazil Philippines**	Malaysia* Morocco Paraguay** Singapore Thailand*** Tunisia** Turkey	Argentina*** Egypt***	
LFDI	$\beta_{FDI} < 0$	$\beta_{FDI} > 0$	$\beta_{FDI} < 0$	$\beta_{FDI} > 0$
	Malaysia Morocco Paraguay*** Philippines* Singapore*** Thailand Tunisia*** Turkey	Brazil***	Argentina*** Egypt***	

(***), (**) and (*) indicate significance at 1%, 5% and 10%, respectively.

Table 6-5: Speed of Adjustment Coefficients for *LFDI* and *LEX*

β's / Variable	$\pi_{EX} < 0$		$\pi_{EX} > 0$	
LEX	$\beta_{EX} < 0$	$\beta_{EX} > 0$	$\beta_{EX} < 0$	$\beta_{EX} > 0$
	Malaysia**	Argentina** Morocco Philippines Singapore*** Thailand*** Tunisia*	Brazil** Egypt* Turkey***	Paraguay
LFDI	$\beta_{FDI} < 0$	$\beta_{FDI} > 0$	$\beta_{FDI} < 0$	$\beta_{FDI} > 0$
	Argentina*** Malaysia Morocco Philippines* Singapore*** Thailand Tunisia***		Egypt*** Turkey Paraguay***	Brazil***

(***), (**) and (*) indicate significance at 1%, 5% and 10%, respectively.

Table 6-6: Speed of Adjustment Coefficients for *LFDI* and *LINV*

β's / Variable	$\pi_{INV} < 0$		$\pi_{INV} > 0$	
LINV	$\beta_{INV} < 0$	$\beta_{INV} > 0$	$\beta_{INV} < 0$	$\beta_{INV} > 0$
	Egypt Singapore**	Argentina Brazil** Malaysia Philippines Thailand*** Tunisia	Morocco*** Paraguay Turkey***	
LFDI	$\beta_{FDI} < 0$	$\beta_{FDI} > 0$	$\beta_{FDI} < 0$	$\beta_{FDI} > 0$
	Argentina*** Egypt*** Malaysia Philippines* Singapore*** Thailand Tunisia***	Brazil***	Morocco Paraguay*** Turkey	

(***), (**) and (*) indicate significance at 1%, 5% and 10%, respectively.

Table 6-7: Speed of Adjustment Coefficients for *LFDI* and *LPRO*

β's / Variable	$\pi_{PRO} < 0$		$\pi_{PRO} > 0$	
LPRO	$\beta_{PRO} < 0$	$\beta_{PRO} > 0$	$\beta_{PRO} < 0$	$\beta_{PRO} > 0$
	Paraguay***	Argentina* Egypt Malaysia** Philippines Singapore** Thailand Turkey	Brazil**	Morocco*** Tunisia*
LFDI	$\beta_{FDI} < 0$	$\beta_{FDI} > 0$	$\beta_{FDI} < 0$	$\beta_{FDI} > 0$
	Argentina*** Egypt*** Malaysia Paraguay*** Philippines* Singapore*** Thailand Turkey		Morocco Tunisia***	Brazil***

(***), (**) and (*) indicate significance at 1%, 5% and 10%, respectively.

6-4 Granger-Causality Tests in ECM Framework:

The existence of cointegration among series entails the estimate of the error-correction model (ECM) in order to investigate the causality relationships among *LNFDI*, *LNEX*, *LNINV*, *LNPRO* and *LNGDP* in different countries. Table 6-8 reports the results of Granger causality tests based on multivariate error-correction models. For each equation, the output displays χ^2 (Wald) statistics for the joint significance of each of the other lagged endogenous variables in that equation. The null hypothesis of no causality is rejected if the calculated χ^2 is greater than the critical values reported at the bottom of the table.

Consider the hypothesis that FDI causes economic growth, which is the core of this empirical study. Let the notation "$x \rightarrow y$" represents a statistically significant pairwise Granger causality between two variables, x and y, where x Granger-causes y at a 10% or lower level of significance. Following the same logic, in our five-variable ECM, there are several channels through which FDI-growth causality relationship may take place; our analysis will focus on the following four. First, *FDI* $\rightarrow$ *EX* $\rightarrow$ *GDP*; that is, the export channel, where inward FDI stimulates exports, which in turn Granger-cause growth. Second, the capital accumulation channel, *FDI* $\rightarrow$ *INV* $\rightarrow$ *GDP*, indicates that the effect of FDI on growth is carried out through the addition to capital stock in host countries. The third channel is productivity, *FDI* $\rightarrow$ *PRO* $\rightarrow$ *GDP*, in which case productivity-enhancing effects of FDI (technology spillovers, human capital augmentation) motivate economic growth. Finally, *FDI* $\rightarrow$ *GDP* denotes the case where FDI could cause economic growth through some unspecified channel; that is, other than the above-mentioned three.

Table 6-8: Granger Causality Test Results based on ECM Estimation

Countries	Dependent Variables	χ^2 (Wald) Statistics†				
		Δ LFDI	Δ LEX	Δ LINV	Δ LPRO	Δ LGDP
Argentina	Δ LFDI	-	3.88	4.00	1.45	2.56
	Δ LEX	0.92	-	2.07	14.43***	0.49
	Δ LINV	7.10**	2.23	-	3.29	3.10
	Δ LPRO	4.61*	1.12	1.51	-	3.29
	Δ LGDP	5.68**	10.70***	11.58***	1.58	-
Brazil	Δ LFDI	-	3.65	18.88***	8.71**	6.63**
	Δ LEX	1.48	-	0.87	2.44	1.50
	Δ LINV	4.38*	0.36	-	1.54	2.91
	Δ LPRO	8.76**	1.34	2.40	-	2.07
	Δ LGDP	0.21	0.11	6.33**	1.14	-
Egypt	Δ LFDI	-	0.36	1.00	0.66	0.89
	Δ LEX	4.05	-	1.92	4.57*	1.52
	Δ LINV	0.14	0.50	-	2.20	2.33
	Δ LPRO	1.63	2.37	0.21	-	0.72
	Δ LGDP	2.38	5.66*	13.10***	0.16	-
Malaysia	Δ LFDI	-	1.50	0.03	5.96**	6.35**
	Δ LEX	5.99**	-	0.67	1.22	3.01
	Δ LINV	3.99	0.36	-	2.58	0.92
	Δ LPRO	8.45**	16.63**	0.86	-	2.29
	Δ LGDP	3.13	6.52**	3.72	4.78*	-
Morocco	Δ LFDI	-	0.03	0.61	0.71	1.18
	Δ LEX	4.89*	-	2.39	1.57	1.29
	Δ LINV	4.48*	7.63**	-	15.14***	7.20**
	Δ LPRO	2.18	1.00	6.24**	-	0.35
	Δ LGDP	0.48	2.79	2.26	3.15	-
Paraguay	Δ LFDI	-	6.19**	2.32	12.68***	2.94
	Δ LEX	0.48	-	0.07	0.13	0.69
	Δ LINV	20.43***	3.24	-	2.21	0.05
	Δ LPRO	0.94	2.53	1.29	-	11.45***
	Δ LGDP	4.91*	7.72**	33.97***	1.96	-
Philippines	Δ LFDI	-	4.49*	1.78	1.46	4.77*
	Δ LEX	4.61*	-	6.04**	8.09**	1.93
	Δ LINV	1.66	4.30*	-	9.58**	4.58*
	Δ LPRO	1.00	0.20	1.45	-	0.41
	Δ LGDP	5.39*	26.28***	6.52**	19.29***	-

(continued)

Countries	Dependent Variables	χ^2 (Wald) Statistics†				
		Δ LFDI	Δ LEX	Δ LINV	Δ LPRO	Δ LGDP
Singapore	Δ LFDI	-	4.29*	3.37	7.59**	0.71
	Δ LEX	5.24*	-	1.69	8.84**	3.57
	Δ LINV	1.25	9.35*	-	2.40	0.52
	Δ LPRO	4.64*	2.18	2.82	-	0.52
	Δ LGDP	9.90***	7.95**	5.74*	10.36***	-
Thailand	Δ LFDI	-	4.89*	0.09	1.93	4.82*
	Δ LEX	10.89***	-	4.91*	6.25**	1.49
	Δ LINV	7.67**	8.47**	-	5.78*	0.49
	Δ LPRO	12.20***	11.09***	4.53*	-	3.19
	Δ LGDP	16.27***	14.22***	4.80*	9.43***	-
Tunisia	Δ LFDI	-	6.31**	9.68***	1.92	0.48
	Δ LEX	5.36*	-	4.54*	2.89	2.76
	Δ LINV	0.65	2.15	-	0.74	1.53
	Δ LPRO	5.19*	7.16**	8.22**	-	1.56
	Δ LGDP	14.45***	5.13*	2.92	4.23*	-
Turkey	Δ LFDI	-	8.75**	1.05	4.28*	5.67*
	Δ LEX	4.17*	-	4.27*	1.70	3.49
	Δ LINV	2.92	0.43	-	2.18	1.57
	Δ LPRO	8.32**	19.71***	22.17***	-	0.72
	Δ LGDP	1.13	3.35	2.54	6.27**	-

† Chi-squared critical values at 1%, 5% and 10% levels of significance are 9.21, 5.99 and 4.61. (***), (**) and (*) indicate significance at 1%, 5% and 10%, respectively.

Bearing in mind the direction of the long-run relationships among variables as well as the speed of adjustment at which each of them move to retain the long-run equilibrium as illustrated in tables 6-4, 6-5, 6-6 and 6-7, the following table summarizes the four possible patterns of causality in the three regions under discussion. Generally, the FDI-stimulated economic growth hypothesis prevails in nine out of eleven countries included in this study. As for the specific hypotheses that this dissertation proposes, they are discussed in turn as follows.

Table 6-9: Summary of FDI-GDP Causality Linkages in Different Regions*

Region	Countries	Causality Channels			
		FDI→GDP	FDI→EX→GDP	FDI→INV→GDP	FDI→PRO→GDP
MERCOSUR	Argentina	...	...	yes	...
	Brazil	...	...	yes	...
	Paraguay	yes	...	...	...
ASEAN	Malaysia	...	yes	...	yes
	Philippines	yes	yes	...	...
	Singapore	yes	yes	...	yes
	Thailand	yes	yes	yes	yes
MENA	Egypt	...	...	...	...
	Morocco	...	...	...	...
	Tunisia	yes	yes	...	...
	Turkey	...	...	...	yes

* Based on the Granger-causality test results reported in table 6-8 and the direction of long-run relationships between *LFDI* and the rest of the variables, as indicated by the cointegration equations in table 6-3 and the speed of adjustment coefficients in tables 6-4, 6-5, 6-6 and 6-7.
(...) indicates that no causality was inferred.

- *H_1: A causal relationship running from FDI to growth exists in both ASEAN and MERCOSUR countries.*

The empirical results support this hypothesis in ASEAN four countries, Malaysia, Philippines, Singapore and Thailand, as well as three MERCOSUR countries, Argentina, Brazil and Paraguay. This can be attributed in part to the large magnitudes of FDI inflows these two regions have been receiving constantly for the last two

decades (tables 3-2 and 3-3). In addition, given the performance of these two regions as indicated by the UNCTAD's inward FDI performance index (table 4-1), this finding is not by any means surprising. MNCs invest intensely in ASEAN countries to take advantage of the relatively cheaper yet highly productive labor force (figures 4-2 and 4-3). In addition, FDI-promoting regional arrangements put in place by ASEAN countries jointly provide assurances of larger market access, address the reduction of tariff and non-tariff trade barriers and facilitate easier sourcing of production inputs and resources.

As for MERCOSUR countries, FDI was driven largely by macroeconomics stabilization, trade liberalization, deregulations of private investment policies and regional integration, all of which contributed to creating a favorable climate for foreign investments. The sizable privatization programs these countries implemented, which involved the selling of a number of state-owned entities, especially in telecommunications and electricity industries, attracted more than one half of the sum of FDI inflows directed to infrastructure in the developing world during 1990-1998 (review section 3-3-2).

- *H_2: FDI is insignificant for growth in MENA countries.*

No causality from FDI to growth was detected in Egypt and Morocco; however, in the cases of Tunisia and Turkey, empirical results suggest that such causality exists. The absence of causal relationships running from FDI to growth in MENA countries was anticipated due to the low volumes of FDI flows to these countries. It is the very nature of FDI as a "voluntary" economic activity - in which MNCs and foreign investors choose to locate their business in the most profitable location - that drives

FDI flows away from the MENA countries. With the MENA region performing the poorest among developing regions as an attractive destination for FDI, those low volumes of FDI flows are expected (see the Business Competitiveness Index and its components, table 4-3). We can argue that MNCs would choose to serve MENA countries via exports rather than FDI to avoid political risks and uncertainty as well as institutional inefficiency involved in investing in the region.

Both Tunisia and Turkey, however, share some common features that make them an exception. Both are relatively faraway from major conflict areas in the region, both enjoy reasonably long-lasting political stability and more importantly, both performed fairly well according to the Business Competitiveness Index, especially with regard to the quality of the national business environment; Tunisia ranked 29 among 102 countries, and Turkey came in the 55^{th} place (table 4-3). In addition, both countries have unique economic relations with the European Union.

The Tunisian economy has benefited substantially from signing the free-trade agreement with the European Union in 1995 as part of the Mediterranean initiative aimed at creating a Mediterranean free-trade area. Ever since, Tunisia has acted as an export platform for MNCs to the European countries, and this explains why "exports" is one channel through which FDI Granger-causes growth in Tunisia.

Likewise, FDI activities in Turkey became dominated by European MNCs, especially following Turkey's entrance to the customs union with Europe in January 1996. Currently, European investors account for more than 60% of the total Turkey's inward FDI. Turkey's emerging role as a springboard for MNCs to access the newly emerging markets of the MENA region through the Turkish "gateway" also makes the

country an even more attractive location for foreign investments. In 2001 Turkey alone received one third of the total FDI inflows to the MENA region, amounting for $3.3 billion that contributed by more than 12% to fixed capital formation in the economy.

- *H_3: A bi-directional causal relationship between FDI and growth is most likely to exist in ASEAN sample countries.*

Empirical results reported in table 6-8 indicate that a two-way causal link between FDI and host country's GDP exists only in three ASEAN countries, one MERCOSUR country and one MENA country, namely Malaysia, Philippines and Thailand, in addition to Brazil and Turkey. The latter two countries have remarkably large domestic markets, with which market-seeking FDI is expected. As for ASEAN countries, faster technological progress and export-promotion policy are the key driving forces of FDI. As illustrated in table 6-8, statistics reported in the first row for each country represent the test results for Granger-causality running from all other lagged variables in the system to FDI. It is clear that $EX \rightarrow FDI$ in Philippines, Singapore and Thailand, whereas $PRO \rightarrow FDI$ in Malaysia and Singapore.

- *H_4: The export channel is expected to be dominant in ASEAN, whereas in MERCOSUR the capital accumulation channel plays the leading role.*

Table 6-9 shows that in all four ASEAN countries, FDI Granger-causes GDP through the "exports" channel. This is true since FDI directed to those countries is mostly export-oriented. On the other hand, as noted earlier, MERCOSUR inward FDI was directed largely to the infrastructure sector as a result of privatization activities. In addition, specifically in the case of Brazil, its automobile industry has grown rapidly

in the 1990s as major auto makers such as Ford, Toyota and Volkswagen have all increased their investments in the country to take advantage of the agreement between Brazil and Mexico that reduces tariffs on trade in automobiles, to reach out to the NAFTA market. Therefore, in two out of three MERCOSUR countries included in this study, Argentina and Brazil, FDI is found to Granger-cause GDP through investment.

6-5 Innovation Accounting Analysis:

Lutkepohl and Reimers (1992) show that innovation accounting, that is, impulse response functions and variance decomposition analysis, can be used to obtain information concerning the interactions among the variables included in the ECM. The shape of the impulse response functions and the variance decompositions can indicate whether the dynamic responses of the variables conform to theory. In this section, we utilize those techniques to examine the remaining two hypotheses concerning the relationship between inward FDI and host-country's capital accumulation and labor productivity. The analysis is limited to the countries where *LFDI* is found to Granger-cause *LINV* and a positive long-run relationship between the two variables is confirmed by cointegration analysis (Argentina, Brazil and Thailand). Likewise, for *LFDI-LPRO* relationship, the analysis will cover only the following countries: Argentina, Malaysia, Singapore, Thailand and Turkey.

- *H_5: There is some degree of complementarity between FDI and domestic capital formation.*

Entries in table 6-10 give the percentage of forecast error variance of *LINV* at horizon *k*, which is attributed to earlier shocks (innovations) from each other series, including

itself. Periods or horizons are set to be 1, 2 years (short horizon), 5, 8, and 10 years (long horizon).

Table 6-10: Forecast Error Variance Decompositions of *LINV* from ECM

Countries	FEVD of *LINV*					
	k	Explained by				
		LFDI	*LEX*	*LINV*	*LPRO*	*LGDP*
Argentina	1	11.10	0.00	85.24	3.67	0.00
	2	18.74	0.00	77.27	3.84	0.14
	5	19.47	0.04	76.34	4.00	0.15
	8	19.90	0.04	75.90	4.01	0.16
	10	19.85	0.04	75.06	4.90	0.15
Brazil	1	13.32	0.68	74.66	11.34	0.00
	2	14.14	0.26	56.64	17.55	11.41
	5	4.87	0.74	60.42	5.68	28.29
	8	4.05	2.35	62.87	4.06	26.67
	10	3.88	2.03	65.22	3.60	25.27
Thailand	1	2.35	11.68	85.97	0.00	0.00
	2	17.33	16.31	50.25	13.98	2.13
	5	60.96	14.61	10.20	9.95	4.27
	8	76.12	6.59	7.85	5.90	3.54
	10	80.61	5.38	5.98	4.90	3.12

As table 6-10 shows, as expected, *LINV* explains the preponderance of its own values in the short run. It is also evident that *LFDI* explains larger percentages of variation in *LINV* than any other variable in the system, especially in the short-run horizons. This is consistent with theory, given the fact that some of the investment-promoting factor endowments in the host country act as FDI determinants. In Argentina and Thailand, *LFDI* continues to explain the majority of *LINV* variance even in the medium and long run.

The following three graphs represent the generalized impulse response functions of *LINV* to one standard deviation shock in *LFDI* in Argentina, Brazil and

Thailand. All three functions indicate that a positive shock in *LFDI* has a strong positive impact on *LINV*. Overall, IRFs as well as the FEVD appear to be consistent with the hypothesis that inward FDI does not crowd-out domestic investment.

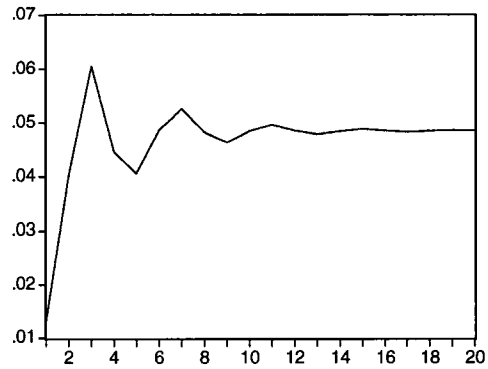

Figure 6-1: Response of LINV to Generalized One S.D. LFDI Innovation - Argentina

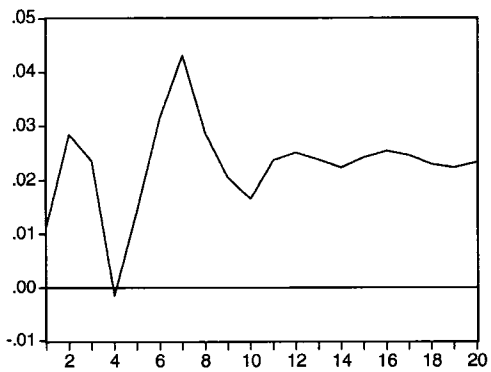

Figure 6-2: Response of LINV to Generalized One S.D. LFDI Innovation - Brazil

Figure 6-3: Response of LINV to Generalized One S.D. LFDI Innovation - Thailand

- *H_6: FDI will always enhance labor productivity; however, this effect is stronger in countries with higher level of human capital endowments.*

We examine this hypothesis in countries where *LFDI* is found to Granger-cause *LPRO* and a positive long-run relationship between the two variables is indicated by cointegration results. There are five countries that meet these conditions, namely: Argentina, Malaysia, Singapore, Thailand and Turkey.

Table 6-11: Forecast Error Variance Decompositions of *LPRO* from ECM

Countries	k	FEVD of *LPRO*				
		Explained by				
		LFDI	*LEX*	*LINV*	*LPRO*	*LGDP*
Argentina	1	5.73	0.00	0.00	94.27	0.00
	2	13.09	1.49	5.69	79.54	0.18
	5	8.73	14.63	18.96	56.65	1.03
	8	8.19	18.33	25.77	46.49	1.21
	10	8.05	19.63	27.68	43.40	1.23
Malaysia	1	0.00	0.00	0.00	100.00	0.00
	2	9.40	4.51	2.07	83.87	0.15
	5	15.07	2.44	45.31	36.14	1.04
	8	17.27	1.64	56.81	23.74	0.54
	10	19.45	1.42	64.60	13.98	0.55
Singapore	1	8.06	9.74	17.03	65.17	0.00
	2	9.09	10.03	18.15	62.27	0.45
	5	14.27	10.89	37.12	35.97	1.74
	8	23.29	13.81	33.80	27.56	1.54
	10	27.08	11.79	28.57	30.86	1.70
Thailand	1	15.77	4.30	2.39	77.54	0.00
	2	9.67	25.78	7.87	50.55	6.12
	5	39.47	31.36	4.74	23.23	1.20
	8	59.32	20.37	2.80	16.73	0.77
	10	64.42	17.93	2.58	14.51	0.57
Turkey	1	0.00	0.00	0.00	100.00	0.00
	2	0.68	0.51	0.76	97.19	0.86
	5	14.94	17.81	4.41	60.72	2.12
	8	16.03	37.79	8.96	31.74	5.48
	10	13.04	45.15	10.27	22.13	9.41

Ratios in table 6-11 provide the percentage of variance of *LPRO* that is attributed to earlier shocks (innovations) from each other series, including itself. Again, periods or horizons are set to reflect both short-run and long-run relations. As theory suggests, in the short run, *LPRO* accounts for the majority of its own variance. In all countries, except for Turkey, inward foreign direct investment comes to play as the major explanatory variable in explaining variation in productivity, particularly in the short run. In the long run, *LPRO* remains substantially influenced by *LFDI* especially in the three ASEAN economies of Malaysia, Singapore and Thailand.

The generalized impulse response functions of *LPRO* to one standard deviation shock in *LFDI* in the five countries, figures 6-4 thru 6-8, bring to attention some interesting implications. First, in all five countries, labor productivity eventually responds positively to positive shocks in FDI. Second, the delayed positive response of productivity to shocks in FDI in both Argentina and Turkey reflects in part the time gap between receiving FDI and improvements in productivity; that is, the time needed for labor to adapt to new technologies brought by MNCs. Third, the immediate positive response of productivity to FDI innovations in ASEAN countries, on the other hand, reflects the high endowments of human capital these countries enjoy which allow them to benefit the most from advanced technologies.

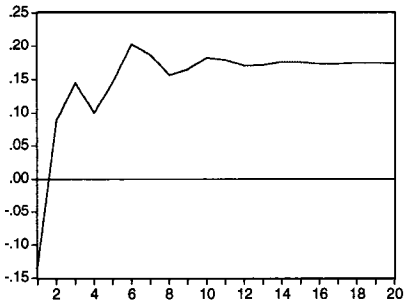

Figure 6-4: Response of LPRO to Generalized One S.D. LFDI Innovation - Argentina

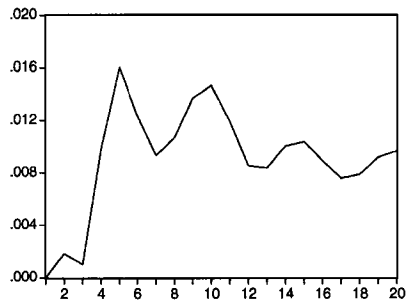

Figure 6-5: Response of LPRO to Generalized One S.D. LFDI Innovation - Malaysia

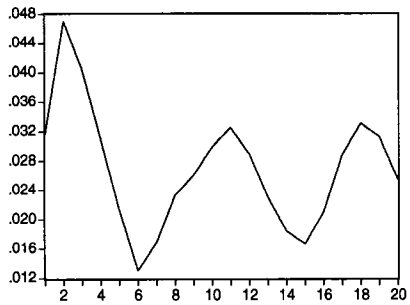

Figure 6-6: Response of LPRO to Generalized One S.D. LFDI Innovation - Singapore

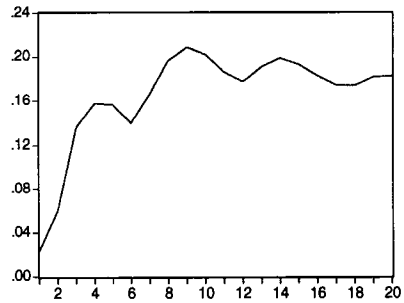

Figure 6-7: Response of LPRO to Generalized One S.D. LFDI Innovation - Thailand

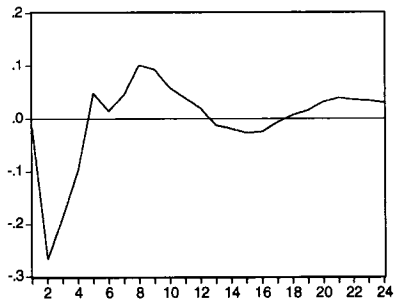

Figure 6-8: Response of LPRO to Generalized One S.D. LFDI Innovation - Turkey

CHAPTER SEVEN

SUMMARY AND CONCLUSIONS

7-1 The Regional Perspective:

This dissertation is devoted to investigate the causality linkages between inward foreign direct investment (FDI) and economic growth in one of the world's most controversial regions, the Middle East and North Africa (MENA). The assessment of FDI contributions to growth has always been problematic since FDI is often associated with more than one growth-promoting factor, such as deepening capital formation, a greater degree of openness and export proceeds and certainly the technology spillovers. Yet, studying the case of the MENA region in particular represents an additional challenge given the distinct cultural, societal, political and economic nature of this region.

The theme of this study raises a critical question concerning the significance of the regional aspect in today's global economy. In fact, the past two decades have witnessed a strong movement toward strengthening and deepening regionalism in both developed and developing countries, to the extent that almost every country in the world has joined some kind of regional economic integration agreement. Meanwhile, during the same period, especially in the nineties, FDI has grown three times faster than world trade and four times more than world output annually; however, the distribution of FDI flows is far from equal whether between developed

countries on one hand and developing countries on the other, or among developing countries. Interestingly, developing regions with well-established, influential regional ties have enjoyed the overwhelming majority of FDI inflows to the developing world.

At the same time as regional integration agreements were flourishing across the globe in Europe, Asia, the Western Hemisphere and even sub-Saharan Africa, the only exception was the MENA region, where the intra-regional trade and capital flows remained minimal. In theory, the dynamic gains from regional integration in developing regions arise from the following: *(i)* regional harmonization of economic policies results in lowering risks, uncertainties, tax and tariff arbitrage and other fiscal barriers to market unity so as to create economies of scale advantage unavailable in small national identities; *(ii)* successful regionalization reduces market imperfections and information asymmetries through improved regulations, higher transparency and genuine commitment of governments to reforms; *(iii)* the greater factor mobility (of capital, people and technology) results in greater overall allocative efficiency, creating multifactor productivity gains that contribute to enhance competitiveness; *(iv)* finally, regional arrangements can be cost-saving through regionally-coordinated investment in infrastructure projects such as electricity, telecommunications and transportations.

Not only do these gains increase the attractiveness of a region for foreign investors, but also boost economic growth prospects which make that region even more attractive for FDI. Therefore, it is inevitable to investigate the issue of FDI and growth in the MENA region within a broader framework that addresses the causes and consequences of regional "relative attractiveness" for FDI (figure 7-1).

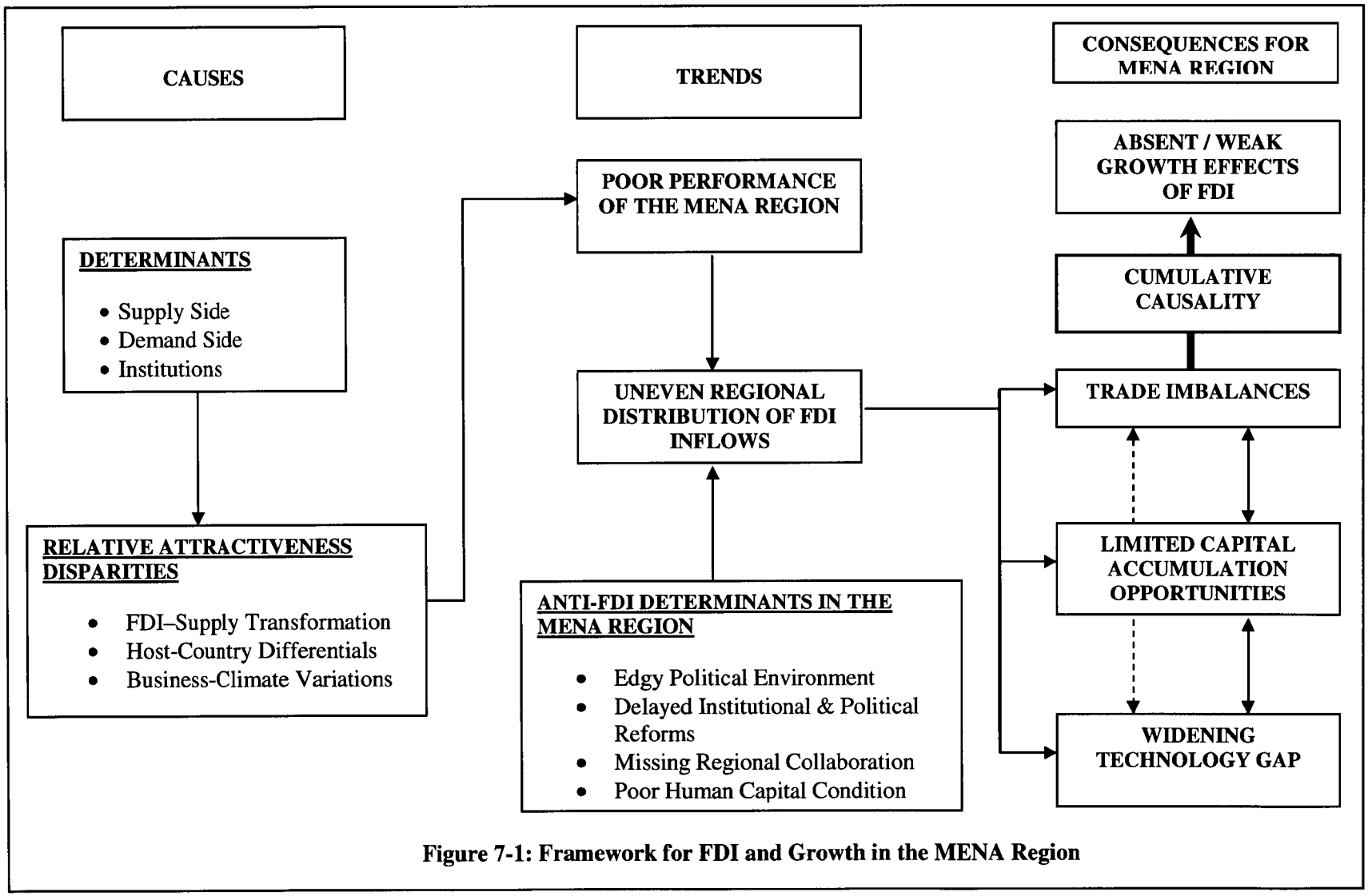

Figure 7-1: Framework for FDI and Growth in the MENA Region

Although the regional distribution of FDI inflows to developing countries is uneven, yet it is fair! On one hand, it truly reflects the rational profit-maximization behavior of multinational corporations (MNCs) and mirrors how competitive the world market for FDI is as well as how *picky* the MNCs have become in selecting their investment location. On the other hand, in the context of globalization, this distribution reflects the differences in adaptability to the rules of the game that are greatly due to differences in institutions in different regions. It is, therefore, legitimate to argue that "faced with the location decision, MNCs consider the regional dimension as a first step, then consider the location choice within certain region".

The uneven distribution of global FDI flows among developing regions is reflected, in part, in the uneven attention scholars and researchers give to exploring the nature of the FDI-growth nexus in different emerging regions. The literature review on the issue indicates that the majority of empirical research on the issue is concentrated on virtually two groups of countries representing the two regions receiving more than 90% of inward FDI flows to developing countries, South and East Asia as well as Latin America and the Caribbean. This is one reason why the MENA region was chosen to be the focus of this dissertation. Another reason is the unparalleled growing interest in the MENA region's social, economic and political development by the West, especially the United States, in the aftermath of September 11, 2001.

7-2 Summary and Conclusions:

Following the introductory chapter, the major determinants of FDI are analyzed in chapter two. A conceptual framework that integrates institutional aspects into economic supply and demand factors is developed so as to provide plausible

explanations of the ongoing trends and patterns of FDI inflows to the developing economies. The discussion in this chapter is different from the traditional analysis of FDI determinants in the sense that it offers more insight not only regarding the location decision MNCs make, but also addressing the resulting pattern of FDI. For this purpose, a template was proposed to identify the relationships between the set of "determinant-endowments" a developing country possesses and the magnitude and types of FDI it receives.

Chapter three starts with a presentation of the changing trends in FDI as a worldwide phenomenon since the beginning of the twentieth century until the end of the 1980s. The chapter continues on to describe the current distribution of FDI inflows from a regional comparative perspective. The analysis indicates that the regional shares of FDI flows to developing world are sharply uneven. South and East Asia, along with Latin America regions have received more than 90 % of FDI inflows to developing countries yearly on average since mid 1990s, with the former dominating the picture and getting 53% and the latter receiving 37%, compared with only 3% for the MENA region. In addition, only five countries captured almost two thirds of the developing countries total share in world FDI over the same period (China, Hong Kong, Brazil, Mexico and Singapore), all of which belong to those two regions.

The chapter then takes a closer look at the FDI inflows to the South and East Asia region as well as the Latin America region in turn, trying to explain the types, trends and patterns of those inflows in terms of the framework presented in chapter two. Chapter three is concluded with a detailed investigation of the MENA region case. We discussed the region's economic overview, the inward FDI stock and flows

to the region as a group, as well as the cases of the six major recipients of FDI in the region (Algeria, Egypt, Morocco, Saudi Arabia, Tunisia and Turkey).

Chapter four is an attempt to put all the pieces together (the conceptual framework introduced in chapter two and FDI-inflows facts discussed in chapter three) so as to identify the underlying causes of such evident uneven regional distribution of FDI. Three interrelated sets of causes are thought of to be significant in explaining the relative attractiveness disparities for FDI across the developing world: the transformation in the nature of FDI supply sources, host-country differentials and business-climate variations. In addition, there is a set of region-specific factors, or what we refer to as "anti-FDI" determinants in the MENA region, that all countries in the region experience and are believed to be responsible the most for crowding FDI out of the region: the edgy political environment, delayed institutional and political reforms, missing regional collaboration and the poor human capital condition. The analysis in chapter four indicates that it is essential to look at FDI in a broader context of social, political and economic development, which is consistent with the theory of the MNC that uses economics as a base, but its application requires use of analysis from disciplines other than economics, such as political science, sociology and psychology. This "multiple perspectives" approach of using the lenses of different disciplines to focus on and analyze investments by MNCs, that is, FDI, has become the standard for international business theory.

In chapter five, the framework for empirical study of causality between FDI and economic growth is developed in quest of the answers for the central questions this dissertation raises: does FDI significantly affect the rate of economic growth, and

if it does, through what channels this effect takes place and finally, how would those channels vary from country to country and from region to region? The chapter starts with a discussion of how FDI is linked to growth within the context of major growth theories: the neoclassical and the endogenous growth theories. Then, the three potential directions of causality between FDI and growth are assessed: FDI-stimulated growth, growth-motivated FDI and the possibility of "virtuous circle." Finally, the methodology applied in this dissertation is presented along with hypotheses and variables definitions.

To overcome the specification problem associated with causality analysis based on bivariate systems, this dissertation utilizes the cointegration technique and Granger causality analysis based on a multivariate error-correction model framework. In addition to FDI and GDP, the analysis thus is expanded to include all variables that shape the FDI-growth nexus as suggested by growth theories. The empirical study, furthermore, inspects the dynamic relationship among the five variables included in the model, FDI, GDP, domestic investment, exports and productivity, by means of the impulse response functions and forecast error variance decompositions.

Bearing in mind the analysis in chapters three and four, and the significance of the "regional" aspect as discussed earlier, we argue that the nature of causality linkages between FDI and growth varies from country to country due to region-specific factors more than country-specific factors. Therefore, the analysis in this study includes eleven countries representing three major developing regions. The sample countries are four ASEAN countries (Malaysia, Philippines, Singapore and

Thailand), three MERCOSUR countries (Argentina, Brazil and Paraguay) and four MENA countries (Egypt, Morocco, Tunisia and Turkey).

The empirical results are gathered and presented in chapter six. The FDI-stimulated economic growth hypothesis prevails in nine out of eleven countries included in this study. In addition to the four ASEAN countries (Malaysia, Philippines, Singapore and Thailand) and the three MERCOSUR countries (Argentina, Brazil and Paraguay), this causality relationship was confirmed in both Tunisia and Turkey, whereas no causality from FDI to growth was detected in either Egypt or Morocco. Empirical results, moreover, indicate that a two-way causal link between FDI and host country's GDP exists only in three ASEAN countries, one MERCOSUR country and one MENA country, namely Malaysia, Philippines and Thailand, in addition to Brazil and Turkey.

In all four ASEAN countries, FDI Granger-causes GDP through the "exports" channel. This is true since FDI directed to those countries is mostly export-oriented. As for MERCOSUR countries, in two out of three countries included in this study, Argentina and Brazil, FDI is found to Granger-cause GDP through investment, which is again consistent with the fact that most of the MERCOSUR inward FDI was directed largely to the infrastructure sector as a result of privatization activities.

In addition, impulse response functions and variance decomposition analysis indicated that there is some degree of complementarity between FDI and domestic capital formation in three countries: Argentina, Brazil and Thailand. Finally, FDI is found to enhance labor productivity in five countries: Argentina, Malaysia, Singapore, Thailand and Turkey. The shape of the impulse response functions in these countries

suggests that the positive response of productivity to FDI innovations is immediate in ASEAN countries, while it is sluggish in Argentina and Turkey. This reflects, to some extent, the differences between the endowments of human capital that these countries possess and supports the notion that FDI may not, in itself, transfer sufficient volumes of human capital; instead, it augments the existing human capital stock. That is, FDI will always enhance labor productivity; however, this effect is stronger in countries with a higher level of human capital endowments.

7-3 Policy Recommendations:

In conclusion, the experience of emerging countries in South East Asia and Latin America regions in terms of attracting FDI and utilizing it as catalyst for growth can be very constructive for MENA countries. According to our literature review and empirical results, one can argue that countries in the MENA region may have the potential to improve their performance and become more able to capitalize on the benefits FDI can bring; however, they have to commit more efforts in order to improve their competitiveness in an increasingly rival world economy. These efforts will be most fruitful if they take place in a broader framework of development and reform. The following proposed agenda of policy reforms encompasses four broad areas: the political aspect, the institutional framework, the regional dimension and, finally, quality human-capital formation.

First, as for the political situation, since the majority of the countries in the region are policy "takers" rather than "setters," and with the absence of a respected national body for conflict resolution and the growing irreversible double-standard way of running world politics, nothing much can really be suggested! Nevertheless, it is

important to start taking serious steps to improve the attitudes towards MNCs, reorient the public and policy-makers of their possible contributions to social and economic development and help them distinguish between foreign politicians and foreign investors. This long-term task can be achieved by the following: *(i)* media campaigns that endorse the role of private sector and economic liberalization, in general, within an informational and publicity framework; *(ii)* intensive training programs for state officials at various levels to demonstrate the economic benefits of FDI-led development, where using successful case studies from countries in other developing regions will prove valuable; and *(iii)* changing the mindset of the public by seminars on the nature of today's world economy and the central role MNCs could play in integrating MENA countries into the global economy and in supporting the export-oriented development efforts. Creating more welcoming attitudes is of great importance since this will guarantee a much greater tolerance of any regulatory and institutional reforms so as to avoid the experience of some Latin American countries, whose privatization programs were retracted because of the lack of public support.

Second, political reforms are needed. In an attempt to link political and institutional reforms to economic growth, it is argued that democratic institutions enhance economic performance through the provision of ingrained systems for intellectual property rights protection and credible stable investment climates. Typically, all types of investments are affected by these factors; however, what makes FDI unique is that it crosses the borders, and thus the institutions, of sovereign foreign countries other than its home country. Therefore, one of the most important factors in the location decision of a MNC is the consideration of institutions in the host country

that support, or impede, the investment. Through free elections, unambiguous legislations, independent judiciary systems and fair law-enforcement authorities, democratic institutions place important constraints on corruption and guarantee protection for private assets. Thus assured that their assets will be protected, foreign investors are more likely to invest in the economy, thereby spurring economic growth. Therefore, it is quite justifiable to argue that democracy in the host country indeed appears to affect the behavior of MNCs.

The preceding argument is based solely on the "official" side; that is, it focuses entirely on what needs to be done by governments and administrations; what about the public side of the story? While democracy guarantees how decisions will be made, it cannot, however, guarantee that those decisions will always benefit foreign investment, which again gives more credit to the significance of targeting the societal attitudes as discussed above. The mentality of state-ownership and suspicion of foreign multinationals will be a fundamental barrier to reform that needs to be overcome. Nonetheless, the MNCs might be willing to subject themselves to societal pressures, in the short term, if the institutional framework in the host country offers the transparency and credibility that provides a stable business environment and that ensures that the basic rules of commerce on which MNCs depend will be respected.

Third, the regional matter is essential. The international economic environment of today's world of globalization and increased international competition pose unprecedented challenges to the MENA countries. However, while much of the rest of the world is moving towards regionalism, MENA countries continue to face the outside world and the challenges posed by the economic and geopolitical nature of the

region individually and alone. They, as a result, negotiate their worldwide economic integration on an individual basis, weakening their negotiating power, and hence lessening both their collective and individual potential to capitalize on the benefits that integration otherwise can yield. Moreover, limited regional economic trade connectivity and cooperation is blocking complementarities in the resource base and potential economies of scale, and in effect is playing a significant role in deterring foreign investors as well as successful local enterprises. Major impediments to sound cooperation in the MENA region include the following: *(i)* the differences in the political systems which create differences regarding social, political and economic priorities; *(ii)* the fact that these inter-country differences have strong negative effects on the performance of various institutions and frameworks set up to promote regional cooperation; and *(iii)* the limited effectiveness of ratified agreements and the bodies charged with their implementation. It is especially difficult to overcome these obstacles due to the fact that governments' commitment to regional integration is sometimes compromised by apprehensions about the behavior and political positions of other countries in the region. And in other cases, some governments choose to forgo the whole regional integration deal for the sake of achieving some national gains through the consolidation of their relationships with outsider super powers.

The policy recommendation for this matter will not suggest the establishment of any more regional institutions or frameworks; there are plenty. Instead, it will encourage governments, policy makers and leaders in MENA countries to recognize that the future development of the region is contingent on their responsiveness and their will to initiate effective and strategic joint action to meet global challenges.

Achieving such cooperation means going beyond lifting trade restrictions and enlarging trade throughout the region, to deepening cooperation at all levels -social and political as well as economic- based on mutual understanding, support and a clear common strategy that enables all countries to work together as partners and finally, to reconsider their national interests in terms of a wider regional interest.

Fourth, human capital augmentation. A better-quality human capital is essential to improving the MENA region's competitiveness in general and attractiveness for FDI in particular. Without a strong and growing knowledge base, countries in the region will be drawn into the international knowledge society as passive consumers, and the already wide technology gap will continue to intensify. For this purpose, efforts need to be devoted in two directions: education reform and technological development. The creation of quality education should be given the priority it deserves; this will mean both allocating more resources to education and using resources more efficiently. For this matter, encouraging the private sector to venture into the field of education can be extremely beneficial in spreading high-quality education, based on educational outcomes, vis-à-vis job market needs. More importantly, any educational reform efforts need to reflect a clearer vision of a development strategy for the future and a better understanding of the challenges ahead.

MENA countries cannot hope to catch up with the developed world, or even to compete with many countries in the developing world, without a substantial improvement in R&D systems. Building effective R&D systems requires a clear commitment from policy-makers and governments, recognizing that many R&D activities are long-term in nature and offer limited immediate rewards, yet they are

essential for future development. Private sector contribution to investment in R&D is necessary and should be encouraged (via favorable tax and tariff treatment, for instance) to overcome the funding problem, especially in non-oil-producing countries. Any efforts with this regard ought to be supported by regulatory frameworks that protect intellectual property to promote the expansion of national research-based knowledge and encourage MNCs to invest in R&D endeavors, both of which will promote the economic growth that will eventually help to fuel further R&D expenditures.

REFERENCES

Abed, George. (2003). Unfulfilled Promise: Why the Middle East and North Africa has Lagged in Growth and Globalization, Finance and Development, vol. 40, no. 1, pp. 10-14.

Aghion, Philippe and Peter Howitt. (1992). A Model of Growth through Creative Destruction, Econometrica, vol. 60, no. 2, pp. 323-351.

Aitken, Brian and Ann Harrison. (1999). Do Domestic Firms Benefit from FDI? Evidence from Venezuela, The American Economic Review, vol. 89, no. 3, pp. 605-618.

Aitken, Brian; Gordon Hanson and Ann Harrison. (1997). Spillovers, Foreign Investment, and Export Behavior, Journal of International Economics, vol. 43, no. 1-2, pp. 103-132.

Akhter, Syed. (1993). Foreign Direct Investment in Developing Countries: The Openness Hypothesis and Policy Implications, International Trade Journal, vol. 7, no.6, pp. 655-672.

Aliber, Robert. (1993). The Multinational Paradigm, (Cambridge, Mass.: MIT Press).

Amirahmadi, Hooshang and Weiping Wu. (1994) Foreign Direct Investment in Developing Countries, The Journal of Developing Areas, vol. 28, no. 2, pp. 167-189.

Anwar, Muhammad; Stephen Davies and R. K. Sampatha. (1996). Causality between Government Expenditures and Economic Growth: an Examination Using Cointegration Techniques, Public Finance, vol. 51, no. 2, pp. 166-184.

Asiedu, Elizabeth. (2002). On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different?, World Development, vol. 30, no. 1, pp. 107-119.

Balasubramanyam, V. N.; Mohammed Salisu and David Sapsford. (1996). Foreign Direct Investment and Growth in EP and IS Countries, The Economic Journal, vol. 106, no. 434, pp. 92-105

Bardesi, Hisham; Stephen Davies and Terutomo Ozawa. (1997). Economic Determinants of Foreign Direct Investment in Oil-Exporting Countries: The Case of Saudi Arabia, Journal of Emerging Markets, vol. 2, no. 2, pp. 45-57.

Barro, Robert (1991). Economic Growth in a Cross Section of Countries, The Quarterly Journal of Economics, vol. 106, no. 2, pp. 407-443.

Bende-Nabende, A.; J. Ford and J. Slater. (2000). "The Impact of FDI on Economic Growth of the ASEAN-5 Economies 1970-94: A Comparative Dynamic Multiplier Analysis from a Small Model with Emphasis on Liberalization", in David Dickinson (ed.), Finance, Governance and Economic Performance in Pacific and South East Asia, (Cheltenham, U.K.; Northampton, Mass.: Elgar), pp. 306-347.

Benhabib, Jess and Mark Spiegel. (1994). The Role of Human Capital in Economic Development: Evidence from Aggregate and Cross-Country Data, Journal of Monetary Economics, vol. 34, no. 2, pp. 143-173.

Bhagwati, Jagdish. (1978). The Anatomy and Consequences of Exchange Control Regimes, Studies in International Economic Relations, vol. 1, no. 10, (New York, National Bureau of Economic Research).

Blomström, Magnus and Ari Kokko. (1997a). Regional Integration and Foreign Direct Investment, NBER Working Paper Series, no. 6019, (Cambridge, Mass.: National Bureau of Economic Research).

Blomström, Magnus and Ari Kokko. (1997b). Regional Integration and Foreign Direct Investment: A Conceptual Framework and Three Cases, World Bank Policy Research Working Paper, no. 1750, (Washington, D.C.: World Bank Publications).

Blomström, Magnus and Ari Kokko. (2001), Foreign Direct Investment and Spillovers of Technology, International Journal of Technology Management, vol. 22, no. 5&6, pp. 435-454.

Blomström, Magnus; Ari Kokko and Mario Zejan. (1992). Host Country Competition and Technology Transfer by Multinationals, NBER Working Paper Series, no. 4131, (Cambridge, Mass.: National Bureau of Economic Research).

Blomström, Magnus; Robert Lipsey and Mario Zejan. (1994). "What Explains the Growth of Developing Countries", in William J. Baumol, Richard R. Nelson and Edward N. Wolff (eds.), Convergence of Growth: Cross-National Studies and Historical Evidence, (New York: Oxford University Press), pp. 243-255.

Borensztein, Eduardo; Jose De Gregorio and Jong-Wha Lee. (1998). How Does Foreign Direct Investment Affect Economic Growth?, Journal of International Economics, vol. 45, no. 1, pp. 115-135.

Brainard, S. Lael. (1977). An Empirical Assessment of the Proximity-Concentration Trade-off between Multinational Sales and Trade, The American Economic Review, vol. 87, no. 4, pp. 520-544.

Buckley, Peter and Mark Casson. (1976). The Future of the Multinational Enterprise, (New York: Holmes & Meier).

Buckley, Peter; Jeremy Clagg; Chengqi Wang and Adam Cross. (2002). FDI, Regional Differences and Economic Growth: Panel Data Evidence from China, Transnational Corporations, vol. 11, no. 1, pp. 1-28.

Buckley, Peter; Jeremy Clagg; Nicolas Forsans and Kevin Reilly. (2001). Increasing the Size of the "Country": Regional Economic Integration and Foreign Direct Investment in a Globalised World Economy, Management International Review, vol. 41, no. 3, pp. 251-274.

Cantwell, John. (1987). The Reorganization of European Industries after Integration: Selected Evidence of the Role of Multinational Enterprise Activities, Journal of Common Market Studies, vol. 26, no. 2, pp. 127-151.

Casson, Mark. (1987). The Firm and the Market: Studies on Multinational Enterprise and the Scope of the Firm, (Cambridge, Mass.: MIT Press).

Caves, Richard. (1971). Industrial Corporations: The Industrial Economics of Foreign Investment, Economica, vol. 38, no. 149, pp. 1-27.

Caves, Richard. (1974a). Causes of Direct Investment: Foreign Firms' Share in Canadian and United Kingdom Manufacturing Industries, Review of Economics and Statistics, vol. 56, no. 3, pp. 279-293.

Caves, Richard. (1974b). Multinational Firms, Competition and Productivity in Host Country Markets, Economica, vol. 41, no. 162, pp. 176-193.

Caves, Richard. (1996). Multinational Enterprise and Economic Analysis, (Cambridge; New York: Cambridge University Press).

Chakraborty, Chandana and Parantap Basu. (2002). Foreign Direct Investment and Growth in India: A Cointegration Approach, Applied Economics, vol. 34, no. 9, pp. 1061-1073.

Choi, Inheun. (1995). Export-Oriented Foreign Direct Investment in East Asia and Latin America: Determinants of Location, Ph.D. Dissertation, (Columbia, South Carolina: University of South Carolina).

Chuang, Yih-Chyi and Chi-Mei Lin. (1999). Foreign Direct Investment, R&D, and Spillover Efficiency: Evidence from Taiwan's Manufacturing Firms, The Journal of Development Studies, vol. 35, no. 4, pp. 117-137.

Chung, Wilbur. (2001). Identifying Technology Transfer in Foreign Direct Investment: Influence of Industry Conditions and Investing Firms Motives, Journal of International Business Studies, vol. 32, no. 2, pp. 211-229.

Coe, David; Elhanan Helpman and Alexander Hoffmaister. (1995). North-South R&D Spillovers. NBER Working Paper Series, no. 5048, (Cambridge, Mass.: National Bureau of Economic Research).

Crankovic, M. and R. Levine. (2000). Does Foreign Direct Investment Accelerate Economic Growth?, University of Minnesota Working Paper.

de Mello, Luiz. (1997). Foreign Direct Investment in Developing Countries and Growth: A Selective Survey, The Journal of Development Studies, vol. 34, no. 1, pp. 1-34.

de Mello, Luiz. (1999). Foreign Direct Investment-Led Growth: Evidence from Time Series and Panel Data, Oxford Economic Papers, no. 51, pp. 133-151.

Dees, Stephane. (1998). Foreign Direct Investment in China: Determinants and Effects, Economics of Planning, vol. 31, no. 2-3, pp. 175-194.

Dickey, David and Wayne Fuller. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root, Journal of the American Statistical Association, vol. 74, no. 366, pp. 427-431.

Dickey, David and Wayne Fuller. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root, Econometrica, Vol. 49, No. 4, pp. 1057-1072.

Dickey, David; Dennis Jansen and Daniel Thornton. (1991). A Primer on Cointegration with an Application to Money and Income, Federal Reserve Bank of St. Louis Review, vol. 73, no. 2, pp. 58-78.

Dunning, John. (1970). Studies in International Investment, (London: George Allen & Unwin).

Dunning, John. (1977). "Trade, Location of Economic Activity and MNE: A Search for an Eclectic Approach", in Bertil Ohlin, Per-Ove Hesselborn and Per Magnus Wijkman (eds.), The International Allocation of Economic Activity, (New York: Holmes & Meier), pp. 395-418.

Dunning, John. (1981). International Production and the Multinational Enterprise, (London; Boston: George Allen & Unwin).

Dunning, John. (1988). The Eclectic Paradigm of International Production: A Restatement and some Possible Extensions, Journal of International Business Studies, vol. 19, no. 1, pp. 1-32.

Dunning, John. (1991). "The Eclectic Paradigm of International Production: A Personal Perspective", in Christos Pitelis and Roger Sugden (eds.), The Nature of Transnational Firm, (London; New York: Routledge).

Dunning, John. (1999). "Re-evaluating the Benefits of Foreign Direct Investment", in Peter Buckley and Pervez Ghauri (eds.), The Global Challenge for Multinational Enterprises: Managing Increasing Interdependence, (Amsterdam; New York: Pergamon), pp. 62-87.

Economic Research Forum for the Arab Countries, Iran and Turkey (ERF). (2002). Economic Trends in the MENA Region, (Cairo, Egypt: The American University in Cairo Press).

Economist Intelligence Unit. (2001). Country Forecast Reports, Several Country Reports, (London, UK: EIU website).
http://www.eiu.com

Elahee, Mohammad and José Pagán. (1999). Foreign Direct Investment and Economic Growth in East Asia and Latin America, Journal of Emerging Markets, vol. 4, no. 1, pp. 59-67.

El-Rifai, Ghassan. (1993). "Investment Policies and Major Determinants of Capital Flows to Arab Countries", in Said El-Naggar (ed.), Economic Development in the Arab Countries: Selected Issues, (Washington, D.C.: IMF Publications).

Enders, Walter. (1995). Applied Econometric Time Series, (New York: John Wiley & Sons, Inc.)

Engle, Robert and Clive Granger. (1987). Co-Integration and Error Correction: Representation, and Testing, Econometrica, vol. 55, no. 2, pp. 251-276.

Erdilek, Asim. (2003). A Comparative Analysis of Inward and Outward FDI in Turkey, Transnational Corporations, vol. 12, no. 3, pp. 79-105.

Ericsson, Johan and Manuchehr Irandoust. (2001). On the Causality between Foreign Direct Investment and Output: A Comparative Study, International Trade Journal, vol. 15, no. 1, pp. 1-26.

Esfahani, Hadi. (1998). Globalization and Deregulation in MENA Countries, ERF Working Paper no. 9812, (Cairo: Economic Research Forum for the Arab Countries, Iran and Turkey).

EViews 5 User's Guide. (2004). (California: Quantitative Micro Software, LLC).

Feenstra, Robert and Gordon Hanson. (1997). Foreign Direct Investment and Relative Wages: Evidence from Mexico's Maquiladoras, Journal of International Economics, vol. 42, no. 3-4, pp. 371-393.

Fernández, Raquel and Jonathan Portes. (1998). Returns to Regionalism: An Analysis of Nontraditional Gains from Regional Trade Agreements, The World Bank Economic Review, vol. 12, no. 2, pp. 197-220.

Fung, K. C.; Hitomi Iizaka and Stephen Parker. (2002). Determinants of U.S. and Japanese Direct Investment in China, Journal of Comparative Economics, vol. 30, no. 3, pp. 567-578.

Gastananga, Victor; Jeffrey Nugent and Bistra Pashamova. (1998). Host Country Reforms and FDI Inflows: How Much Difference do they Make?, World Development, vol. 26, no. 7, pp. 1299-1314.

Ghemawat, Pankaj and Murali Patibandla. (1999). "India's Exports since the Reforms", in Jeffery Sachs; Ashutosh Varshney and Nirupam Bajpai (eds.), India in the Era of Economic Reforms, (New Delhi; New York: Oxford University Press).

Ghemawat, Pankaj; Murali Patibandla and B. Coughlin. (2000). India's Software Industry at the Millennium, Harvard Business School Case Study.

Ghirmay, Teame; Richard Grabowski and Subhash Sharma. (2001). Exports, Investment, Efficiency and Economic Growth in LDC: An Empirical Investigation, Applied Economics, vol. 33, no. 6, pp. 689-700.

Gittleman, Maury and Edward Wolff. (1995). R&D Activity and Cross-Country Growth Comparison, Cambridge Journal of Economics, vol. 19, no. 1, pp. 189-207.

Glasser, Bradley. (2001). Economic Development and Political Reform: the Impact of External Capital on the Middle East, (Cheltenham, Glos, UK; Northampton, MA, USA: Edward Elgar).

Granger, Clive and P. Newbold. (1974). Spurious Regressions in Econometrics, Journal of Econometrics, vol. 2, no. 2, pp. 111-120.

Granger, Clive. (1969). Investigating Causal Relations by Econometric Models and Cross-spectral Methods, Econometrica, vol. 37, no. 3, pp. 424-438.

Granger, Clive. (1980). Testing for Causality: A Personal Viewpoint, Journal of Economic Dynamics and Control, vol. 2, pp. 329-352.

Granger, Clive. (1981). Some Properties of Time Series Data and Their Use in Econometric Model Specification, Journal of Econometrics, vol. 16, no. 1, pp. 121-130.

Granger, Clive. (1988). Some Recent Development in a Concept of Causality, Journal of Econometrics, vol. 39, no. 1-2, pp. 199-211.

Grossman, Gene and Elhanan Helpman. (1991). Innovation and Growth in the Global Economy, (Cambridge, Mass.: MIT Press).

Gupta, Dipak. (1990). The Economics of Political Violence: The Effect of Political Instability on Economic Growth, (New York, Praeger).

Haddad, Mona and Ann Harrison. (1993). Are There Positive Spillovers from Direct Foreign Investment: Evidence from Panel Data for Morocco, Journal of Development Economics, vol. 42, pp. 51-74.

Haskel, Jonathan; Sonia Pereira and Matthew Slaughter. (2002). Does Inward Foreign Direct Investment Boost the Productivity of Domestic Firms?, NBER Working Paper Series, no. 8724, (Cambridge, Mass.: National Bureau of Economic Research).

Hermes, Niels and Robert Lensink. (2003). Foreign Direct Investment, Financial Development and Economic Growth, Journal of Development Studies, vol. 40, no. 1, pp. 142-163.

Hines, James. (1995). Forbidden Payment: Foreign Bribery and American Business after 1977, NBER Working Paper Series, no. 5266, (Cambridge, Mass.: National Bureau of Economic Research).

Human Rights Watch. (2002). World Report 2002, (New York: Human Rights Watch).

Hymer, Stephen. (1976). The International Operations of National Firms, (Cambridge, Mass.: MIT Press).

Johansen, Søren and Katarina Juselius. (1992). Testing Structural Hypotheses in a Multivariate Cointegration Analysis of the PPP and the UIP for UK, Journal of Econometrics, vol. 53, no. 1-3, pp. 211-244.

Johansen, Søren. (1991). Estimating and Hypotheses Testing of Cointegration Vectors in Gaussian Vector Autoregressive Model, Econometrica, vol. 59, no. 6, pp. 1551-1580.

Karikari, John. (1992). Causality between Direct Foreign Investment and Economic Output in Ghana, Journal of Economic Development, vol. 17, no. 1, pp.7-17.

Kasibhatla, Krishna and Bansi Sawhney. (1996). Foreign Direct Investment and Economic Growth in the U.S.: Evidence from Co-integration and Granger Causality Tests, Rivista Internazionale di Scienze Economiche e Commerciali, vol. 43, no. 2, pp. 411-420.

Kathuria, Vinish. (2002). Liberalization, FDI and Productivity Spillovers: An Analysis of Indian Manufacturing Firms, Oxford Economic Papers, vol. 54, no. 4, pp. 688-718.

Khan, Habibullah and Koh Leng. (1997). Foreign Direct Investment, Exports and Economic Growth in the Three Little Dragons: Evidence from Cointegration and Causality Tests, The Singapore Economic Review, vol. 42, no. 2, pp. 40-60.

Kindleberger, Charles. (1969). American Business Abroad: Six Lectures on Direct Investment, (New Haven, CT: Yale University Press).

Kinoshita, Yuko. (1999). Technology Spillovers Through Foreign Direct Investment, The William Davidson Institute Working Paper Series, no. 221, the University of Michigan Business School.

Koko, Ari. (1994). Technology, Market Characteristics, and Spillovers, Journal of Development Economics, vol. 43, no. 2, pp. 279-293.

Kravis, Irving and Robert Lipsey. (1982). The Location of Overseas Production and Production for Export by U.S. Multinational Firms, Journal of International Economics, vol. 12, no. 3-4, pp. 201-223.

Krugman, Paul. (1979). A Model of Innovation, Technology Transfer and the World Distribution of Income, The Journal of Political Economy, vol. 87, no. 2, pp. 253-266.

Lecraw, Donald. (1991). "Factors Influencing FDI in Host Developing Countries: A Preliminary Report", in Peter Buckley and Jeremy Clegg (eds.), Multinational Enterprises in Less Developed Countries, (New York: St. Martin Press), pp. 163-180.

Lee, Kevin and M. Hashem Pesaran. (1993). Persistence Profiles and Business Cycle Fluctuations in a Disaggregated Model of U.K. Output Growth, Ricerch Economiche, vol. 47, no. 3, pp. 293-322.

Lee, Kevin; M. Hashem Pesaran and Richard Pierse. (1993). Persistence of Shocks and their Sources in Multisectoral Model of U.K. Output Growth, The Economic Journal, vol. 102, no. 411, pp. 342-356.

Levy, Brian and Pablo Spiller. (1996). "Framework for Resolving the Regulatory Problem", in Brian Levy and Pablo Spiller (eds.), Regulations, Institutions and Commitment: Comparative Studies of Telecommunications, (Cambridge; New York: Cambridge University Press).

Lim, Ewe-Ghee. (2001). Determinants of, and the Relation Between, Foreign Direct Investment and Growth: A Summary of the Recent Literature, IMF Working Paper, no. 01/175, (Washington, D.C.: IMF Publications).

Lipsey, Robert. (2000). Inward FDI and Economic Growth in Developing Countries, Transnational Corporations, vol. 9, no. 1, pp. 67-95.

Loree, David and Stephen Guisinger. (1995). Policy and Non-Policy Determinants of U.S. Equity Foreign Direct Investment, Journal of International Business Studies, vol. 26, no. 2, 2nd Qtr., pp. 281-299.

Lucas, Robert. (1988). On the Mechanics of Economic Development, Journal of Monetary Economics, vol. 22, no.1, pp. 3-42.

Lucas, Robert. (1993). On the Determinants of Direct Foreign Investment: Evidence from East and Southeast Asia, World Development, vol. 21, no. 3, pp. 391-406.

Lutkepohl, Helmut and Hans-Eggert Reimers. (1992). Impulse Response Analysis of Cointegrated Systems, Journal of Economic Dynamics and Control, v.16, no.1, pp. 53-78.

MacKinnon, James. (1991). "Critical Values for Cointegration Tests", in Robert Engle and Clive Granger (eds.), Long-run Economic Relationships: Readings in Cointegration, (Oxford: Oxford University Press).

MacKinnon, James. (1996). Numerical Distribution Functions for Unit Root and Cointegration Test, Journal of Applied Econometrics, vol. 11, no. 6, pp. 601-618.

Mankiw, Gregory; David Romer, and David Weil. (1992). A Contribution to the Empirics of Economic Growth, The Quarterly Journal of Economics, vol. 107, no. 2, pp. 407-437.

Marin, Dalia. (1992). Is the Export-Led Growth Hypothesis Valid for Industrialized Countries, The Review of Economics and Statistics, vol. 74, no. 4, pp. 678-688.

Masih, Rumi and Abul Masih. (2001). Long and Short Term Dynamic Causal Transmission amongst International Stock Markets, Journal of International Money and Finance, vol. 20, no. 4, pp. 563-587.

Mody, Ashoka and Krishna Srinivasan. (1998). Japanese and U.S. Firms as Foreign Investors: Do They March to the Same Tune?, Canadian Journal of Economics, vol. 31, no. 4, pp. 778-799.

Mody, Ashoka; Susmita Dasgupta and Sarbajit Sinha. (1998). Japanese Multinationals in Asia: Drivers and Attractors, Oxford Development Studies, vol. 27, no. 2, pp. 149-164.

Moran, Theodore (1998). Foreign Direct Investment and Development: The New Policy Agenda for Developing Countries and Economies in Transition, (Washington, D.C.: Institute of International Economics).

Motta, Massimo and George Norman. (1996). Does Economic Integration Cause Foreign Direct Investment?, International Economic Review, vol. 37, no. 4, pp. 757-783.

Nair-Reichert, Usha and Diana Weinhold. (2001). Causality Test for Cross-Country Panels: A New Look at FDI and Economic Growth in Developing Countries, Oxford Bulletin of Economics & Statistics, vol. 63, no. 2, pp. 153-172.

Nigh, Douglas. (1985). The Effect of Political Events on United States Direct Foreign Investment: A Pooled Time-Series Cross-Sectional Analysis, Journal of International Business Studies, vol. 16, no. 1, pp. 1-17.

North, Douglass and Barry Weingast. (1989). Constitutions and Commitment: The Evolution of Institutions Governing the Public Choice in Seventeenth-Century England, Journal of Economic History, vol. 49, no. 4, pp. 803-832.

North, Douglass. (1990). Institutions, Institutional Change and Economic Performance, (Cambridge; New York: Cambridge University Press).

Olofsdotter, Karin. (1998). Foreign Direct Investment, Country Capabilities and Economic Growth, Review of World Economics, vol. 134, no. 3, pp. 534-547.

Olson, Mancur. (1993). Dictatorship, Democracy, and Development. American Political Science Review, vol. 87, no. 3, pp. 567-576.

Ozawa, Terutomo. (1992). Foreign Direct Investment and Economic Growth, Transnational Corporation, vol. 1, no. 1, pp. 27-54.

Ozawa, Terutomo. (2001). The "Hidden" Side of the "Flying-Geese" Catch-up Model: Japan's Dirigiste Institutional Setup and a Deepening Financial Morass, Journal of Asian Economics, vol. 12, no. 4, pp. 471-491.

Ozawa, Terutomo. (2003). Pax Americana-Led Macro-Clustering and Flying-Geese-Style Catch-up in East Asia: Mechanism of Regionalized Endogenous Growth, Journal of Asian Economics, vol. 13, no. 6, pp. 699-713.

Ozawa, Terutomo and Sergio Castello. (2003). "FDI and Endogenous Growth: IB Perspective", in John Cantwell and Rajneesh Narula (eds.), International Business and the Eclectic Paradigm, (Cheltenham, U.K.: Elgar), pp. 74-95.

Patibandla, Murali. (2001). Patterns of Foreign Direct Investment in Emerging Economies: An Exploration, Copenhagen Business School Working Papers, no. 1.

Patibandla, Murali and Bent Petersen. (2001). Role of Transnational Corporations in the Evolution of a high-tech Industry: The Case of India's Software Industry, Copenhagen Business School Working Papers, no. 5.

Pesaran, M. Hashem; Richard Pierse and Kevin Lee. (1993). Persistence, Cointegration and Aggregation: A Disaggregate Analysis of Output Fluctuations in the U.S. Economy, Journal of Econometrics, vol. 56, no.1-2, pp. 57-88.

Pfeffermann, Guy and Andrea Madarassy. (1992). Trends in Private Investment in Developing Countries, International Finance Corporation Discussion Paper, no. 16, (Washington, D.C.: World Bank Publications).

Poon, Jessie and Edmund Thompson. (1998). Foreign Direct Investment and Economic Growth: Evidence from Asia and Latin America, Journal of Economic Development, vol. 23, no. 2, pp. 141-160.

Porter, Michael. (1990). The Competitive Advantage of Nations, (New York: Free Press).

Reisen, Helmut and Marcelo Soto. (2001). Which Types of Capital Inflows Foster Developing Country Growth, International Finance, vol. 4, no. 1, pp.1-14.

Romer, David. (1996). Advanced Macroeconomics, (New York: McGraw-Hill).

Romer, Paul. (1986). Increasing Returns and Long Run Growth, The Journal of Political Economy, vol. 94, no. 5, pp. 1002-1037.

Romer, Paul. (1990). Endogenous Technological Change, The Journal of Political Economy, vol. 98, no. 5 – part 2, pp. S71-S102.

Rugman, Alan. (1999). Forty Years of the Theory of the Transnational Corporation, Transnational Corporations, vol. 8, no. 2, pp. 51-71.

Sader, Frank. (2000). Attracting Foreign Direct Investment into Infrastructure: Why is it So Difficult?, (Washington, D.C.: World Bank Publications).

Sadik, Ali and Ali Balbol. (2001). Capital Flows, FDI, and Technology Spillovers: Evidence from Arab Countries, World Development, vol. 29, no. 12, pp. 2111-2125.

Saggi, Kamal. (2000). Trade, Foreign Direct Investment and International Technology Transfer: A Survey, World Bank Policy Research Working Paper, no. 2349, (Washington, D.C.: World Bank Publications).

Saltz, Ira. (1992), The Negative Correlation between Foreign Direct Investment and Economic Growth in the Third World: Theory and Evidence, Rivista Internazionale di Scienze Economiche e Commerciali, vol. 39, no. 7, pp. 617-633.

Schiff, Maurice and L. Alan Winters. (1998). Dynamics and Politics in Regional Integration Agreements: An Introduction, The World Bank Economic Review, vol. 12, no. 2, pp. 177-195.

Shan, Jordan; Gary Tian and Fiona Sun. (1999). "Causality between FDI and Economic Growth", in Yanrui Wu (ed.), Foreign Direct Investment and Economic Growth in China, (Cheltenham, U.K. and Northampton, Mass.: Elgar), pp. 140-154.

Sharif, Chaudhry. (1997). Foreign Direct Investment and Economic Growth: The Case of Asian Developing Countries, Ph.D. Dissertation, (Bronx, New York: Fordham University).

Shatz, Howard and Anthony Venables. (2000). The Geography of International Investment, World Bank Policy Research Working Paper, no. 2338, (Washington, D.C.: World Bank Publications).

Sims, Christopher. (1972). Money, Income, and Causality, The American Economic Review, vol. 62, no. 4, pp. 540-552.

Sims, Christopher. (1980). Comparison of Interwar and Postwar Business Cycles Monetarism Reconsidered, The American Economic Review, vol. 70, no. 2, pp. 250-275.

Singh, Harinder and Kwang Jun. (1995). Some New Evidence on Determinants of Foreign Direct Investment in Developing Countries, World Bank Policy Research Working Paper, no. 1531, (Washington, D.C.: World Bank Publications).

Solow, Robert. (1956), A Contribution to the Theory of Economic Growth, The Quarterly Journal of Economics, vol. 70, no. 1, pp. 65-94.

Solow, Robert. (1957). Technical Change and the Aggregate Production Function, The Review of Economics and Statistics, vol. 39, no. 3, pp. 312-320.

Solow, Robert. (1994), Perspectives on Growth Theory, Journal of Economic Perspective, vol. 8, no. 1, pp. 45-54.

Stocker, Herbert. (2000). "Growth Effects of Foreign Direct Investment - Myth or Reality?", in John-ren Chen, Foreign Direct Investment, (New York: St. Martin's Press), pp. 115-137.

Tanzi, Vito. (1995). "Corruption, Arm's Length Relationships and Markets", in Gianluca Fiorentini and Sam Peltzman (eds.), The Economics of Organized Crime, (Cambridge, Mass.: Cambridge University Press), pp. 161–180.

Tanzi, Vito. (1998). Corruption around the World: Causes, Consequences, Scope, and Cures, IMF Staff Papers, vol. 45, no. 4, (Washington, D.C.: IMF Publications).

Tatoglu, Ekram and Keith Glaister. (1996). Trends and Patterns of European Foreign Direct Investment in Turkey, European Business Review, vol. 96, no. 6, pp. 11-21.

Theobald, Robin. (1990). Corruption, Development, and Underdevelopment, (Durham, NC: Duke University Press).

Toda, Hiro and Peter Phillips. (1994). Vector Autoregression and Causality: A Theoretical Overview and Simulation Study, Econometric Review, vol. 13, no. 2, pp. 259-285.

Toda, Hiro and Peter Phillips. (1994). Vector Autoregressive and Causality: A Theoretical Overview and Simulation Study, Econometric Review, vol. 13, no. 2, pp. 259-285.

Transparency International. (2003). Corruption Perceptions Index, (Berlin, Germany: Transparency International website).
http://transparency.org/cpi/index.html#cpi

Tsai, Pan-Long. (1991). Determinants of Foreign Direct Investment in Taiwan: An Alternative Approach with Time-Series Data, World Development, vol. 19, no. 2-3, pp. 275-285.

Tsai, Pan-Long. (1994). Determinants of Foreign Direct Investment and Its Impact on Economic Growth, Journal of Economic Development, vol. 19, no. 1, pp. 137-163.

United Nations Conference on Trade and Development (UNCTAD). (2003). World Investment Report 2003: FDI Policies for Development: National and International Perspectives, (New York and Geneva: United Nations Publication).

United Nations Development Programme (UNDP). (2003). Arab Human Development Report (AHDR): Building a Knowledge Society, (New York, Unite Nations Publications).

United Nations Educational, Scientific and Cultural Organization (UNESCO). (1999). World Science Report, (Paris, France: UNESCO Publishing; Elsevier France).

Vernon, Raymond. (1966). International Investment and International Trade in the Product Cycle, The Quarterly Journal of Economics, vol. 80, no. 2, pp. 190-207.

Wei, Shang-Jin. (1997). How Taxing is Corruption on International Investors?, NBER Working Paper Series, no. 6030, (Cambridge, Mass.: National Bureau of Economic Research).

Wheeler, David and Ashoka Mody. (1992). International Investment Location Decisions: The Case of U.S. Firms, Journal of International Economics, vol. 33, no. 1-2, pp 57-76

Wilkins, Mira. (1997). "The Conceptual Domain of International Business", in Brian Toyne and Douglas Nigh (eds.), International Business: An Emerging Vision, (Columbia, SC: University of South Carolina Press), pp. 31-50.

Williamson, Oliver. (1985). The Economic Institutions of Capitalism: Firms, Markets and Relational Contracting, (New York: Free Press; London: Collier Macmillan).

Williamson, Oliver. (1988). "Economic Institutions and Development: A View from the Bottom", in Mancur Olson and Satu Kahkonen (eds.), A not-so-Dismal Science: A broader View of Economies and Societies, (Oxford; New York: Oxford University Press).

Wilson, Rodney. (1994). The Economic Relations of the Middle East: Toward Europe or within the Region, The Middle East Journal, vol. 48, no. 2, pp. 268-287.

Woodward, Douglas and Robert Rolfe. (1995). The Location of Export-Oriented Foreign Investment in the Caribbean Basin, Journal of International Business Studies, vol. 24, no. 1, 1st Qtr., pp. 121-144.

World Bank. (2003). The World Development Indicators CD-ROM, (Washington, D.C.: World Bank Publications).

World Economic Forum. (2004). The Global Competitiveness Report, (Geneva: World Economic Forum; New York: Oxford University Press).

Young, Alwyn. (1993). Substitution and Complementarity in Endogenous Innovation, The Quarterly Journal of Economics, vol. 108, no. 3, pp. 775-807.

Zhang, Kevin. (1999). Foreign Direct Investment and Economic Growth: Evidence from Ten East Asian Economies, Economia Internazionale, vol. 52, no. 4, pp. 517-535.

Zhang, Kevin. (2001). Does Foreign Direct Investment Promote Economic Growth? Evidence from East Asia and Latin America, Contemporary Economic Policy, vol. 19, no. 2, pp. 175-185.