

Solvay  
Business School

**Centre Emile Bernheim**  
**Research Institute in Management Sciences**

**WORKING PAPER: WP-CEB 04/023**



ULB

# **Trade and Foreign Exchange Liberalization, Investment Climate and FDI in the MENA Countries\***

by

Khalid Sekkat  
DULBEA, CP 140  
University of Brussels  
50 Avenue F.D. Roosevelt, 1050 Brussels, Belgium  
Tel : 32 2 650 41 39  
Fax : 32 2 650 39 01  
Email : ksekkat@ulb.ac.be

and

Marie-Ange Veganzones-Varoudakis  
Centre National de la Recherche Scientifique, CERDI, Clermont Ferrand, France  
and  
World Bank, Washington, D.C., USA

(May 2004)

Abstract:

The paper assess the relative importance of trade and foreign exchange liberalization, infrastructure availability and economic and political stability in increasing Middle East and North African (MENA) countries attractiveness with respect to FDI. The analysis is conducted for total FDI and for FDI in manufacturing. The results show that trade and foreign exchange liberalization, infrastructure availability and sound economic and political conditions increase FDI inflows. Their effects are much higher for FDI in the manufacturing sector than for total FDI. This result is robust to alternative indicators of trade and foreign exchange liberalization, and to change in the specification. The message to MENA's policy makers is twofold. First, efforts toward trade and foreign exchange liberalization should be initiated or further increased in order to make the region attractive to foreign investors. Second improvements in other aspects of the investment climate are important complements to liberalization and result in additional and sensitive increase of FDI inflows.

Length of the article: 20 pages.

Keywords: Reforms, MENA, FDI.  
JEL classification: F21, F15, K42.

\* We thank Lahcen Achy, Mohamed Lahouel, Mustapha Nabli and Aristomène Varoudakis for very helpful comments, which substantially improved the paper. We also benefited from very useful discussions with participants conferences organized by the World Bank ABCDE-Europe (Brussels, 2004), the IEQ (Tunis, 2003), the FEMISE (Marseilles, 2003). We acknowledge financial support from the World Bank and the FEMISE network. The views expressed in this paper are those of the authors, not of their institutions

# **Trade and Foreign Exchange Liberalization, Investment Climate and FDI in the MENA Countries**

(May 2004)

Abstract:

The paper assess the relative importance of trade and foreign exchange liberalization, infrastructure availability and economic and political stability in increasing Middle East and North African (MENA) countries attractiveness with respect to FDI. The analysis is conducted for total FDI and for FDI in manufacturing. The results show that trade and foreign exchange liberalization, infrastructure availability and sound economic and political conditions increase FDI inflows. Their effects are much higher for FDI in the manufacturing sector than for total FDI. This result is robust to alternative indicators of trade and foreign exchange liberalization, and to change in the specification. The message to MENA's policy makers is twofold. First, efforts toward trade and foreign exchange liberalization should be initiated or further increased in order to make the region attractive to foreign investors. Second improvements in other aspects of the investment climate are important complements to liberalization and result in additional and sensitive increase of FDI inflows.

Keywords: Reforms, MENA, FDI.  
JEL classification: F21, F15, K42.

## I. Introduction

The disappointing growth and employment records in the MENA countries are due, at least in part, to the low integration of the region in the world economy (e.g. Makdissi et al, 2000 and Dasgupta et al, 2002). Abstracting from oil, the region scores one of the lowest ratios of export to GDP among all region of the World but Sub-Saharan-Africa.<sup>1</sup> It has also the lowest ratios of FDI to GDP among all region of the World. This ratio only reached 0.9% in average in the 1990s, against 2.5% in Africa, 3.8% in East Asia and 4.5% in Latin America. Moreover, contrary to the other regions where FDI flows increased during the 1990s, the progression was very small in the MENA.<sup>2</sup> Although some countries like Morocco or Tunisia attracted more FDI than the regional average, these results remains very disappointing.

FDI inflows can represent additional resources a country needs to improve its economic performance. By increasing capital stock, FDI can increase country's output and productivity through a more efficient use of existing resources and by absorbing unemployed resources. For instance, De Gregorio (1992) shows, in a panel of 12 Latin American countries, that FDI is about three times more efficient than domestic investment (see also UNCTAD, 1992 and Blomstrom et al, 1992). FDI can also act as a catalyst for local investment by complementing local resources and providing a signal of confidence in investment opportunities. Agosin and Mayer (2000), using a panel of 32 countries over the period 1970-96, finds that FDI crowds-out domestic investment in Latin America and crowds-in in Asia. Finally, FDI can stimulate the development and dispersion of technological skills through transnational corporations' internal transfers and through linkages and spillovers among firms. Borensztein et al (1998), focusing on 69 developing countries, supports the effect of FDI flows on economic growth through a "catch-up" process in the level of technology. It also reveals a strong complementarity between FDI and human capital. FDI has an overall positive effect but its magnitude depends on the stock of human capital available in the host country.

The reason for the poor export and FDI performance in the region has been related to prolonged application of inward-looking strategies based on import-substitution (Nabli and De Kleine, 2000). This is why, during the 1980s, some of the MENA countries engaged in a process of economic reform, involving a more outward orientation of their economies, the lowering of trade barriers, privatization of many industries and reform of the foreign-exchange market. However, other MENA countries are still lagging behind (Nabli and Veganzones, 2003). Moreover, international evidence (see Dasgupta et al, 2002) suggests that trade and foreign exchange policies might not be sufficient and companion policies would be needed to further increase the attractiveness of a country. Such policies aim at strengthening the investment climate. They include the availability of adequate infrastructure and the quality of the economic, the political and the institutional framework.

---

<sup>1</sup> Sekkat and Varoudakis (2002) and Achy and Sekkat (2003) focus on manufactured exports in the MENA.

<sup>2</sup> 6,3 % on average against 17% in Africa, 10% in East Asia, 22% in Latin America and 13% in South Asia.

The paper addresses two questions. First, whether the reforms undertaken by some MENA countries can help improving their record in term of FDI attractiveness. Second, can improvement of other aspects of the business climate (physical infrastructures and political and economic stability) further increase, and to what extent, FDI attractiveness of the region. For this purpose, an econometric model of the determinants of FDI has been set up and estimated over a large sample of developing countries. The results show that countries having undertaken trade and foreign-exchange market reforms are able to attract more FDI. The improvement in other aspects of the business climate can result in an increase of FDI inflows that is comparable to the one resulting from trade and foreign exchange policies.

The paper goes a step further by conducting a similar exercise using FDI in manufacturing instead of total FDI. This is motivated by two facts. First, in some countries FDI may be due to natural resource abundance and their inflows may be little affected by the business climate. Second, the manufacturing industry is more conducive to growth than agriculture or mining. Although caution is recommended due to the limited number of countries in the sample (only 21), the results suggest that the impact of trade and foreign exchange market reforms and of improvement of the business climate is higher for FDI in manufacturing than for total FDI.

The paper is organized as follows. Section 2 introduces the literature. Section 3 presents the econometric analysis. Section 4 assesses the likely impact of reforms on MENA's FDI inflows. Section 5 concludes.

## **II. Determinants of FDI Inflows**

Various motivations of FDI were put forward in the literature. The eclectic theory of FDI groups them into three categories (Dunning 1981 and 1988). First, ownership-specific advantages that allow firms to compete with the other firms in the markets it serves regardless of the disadvantages of being foreign. Second, transaction costs associated with trade and licensing that make the internalized transactions through FDI more efficient. Third, location advantages that make the chosen foreign country a more attractive site for FDI than the others. Given the objective of the study, we will focus on the latter. We group country's advantages into three categories: basic economic factors, trade and foreign exchange policy and other aspects of the business climate.

### ***II.1. Basic Economic Factors***

An early survey by Agarwal (1980) summarized the basic economic determinants of country attractiveness with respect to FDI: the difference in the rate of return on capital across countries, portfolio diversification strategy of investors and market size of the host country. The difference in the rate of return is dependent on incentives for foreign investors and supply of cheap labor. Empirical evidence shows that the effect of incentives provided by the host country on FDI is only marginal however. Agarwal explains this unexpected finding by the fact that incentives are generally accompanied by a set of restrictions and requirements. The supply of cheap labor appears as a more convincing explanation of FDI. Overall, empirical evidence on the relationship between inter-country differences in the rates of return and FDI does not provide any

conclusive results. This ambiguous finding is due, according to Agarwal, to statistical and conceptual problems. Theoretically, FDI is a function of expected profits but available data are on reported profits. In addition, reported profits may not be similar to actual profits since transactions between the parent company and its affiliates are subject to intra-company pricing rather than to market pricing.

The portfolio diversification hypothesis stresses the fact that investors select their locations taking into account both the expected profits and the perceived risk. Portfolio diversification helps reducing the total risk as long as returns are highly correlated within the country and weakly correlated between the home and the host countries. The empirical evidence in favor of this hypothesis remains weak. Some authors attempted to understand why multi-national companies tend to contribute more to FDI than to portfolio investments which are more likely to provide better instrument for geographical diversification. They argued that this preference might be due either to the absence of organized security markets (the case of LDCs) or to presence of high inefficiencies on these markets when they exist.

Finally, FDI is considered to be a function of output or sales on the host market. Most empirical studies reviewed by Agarwal have lent support to the relationship between FDI and market size of the host countries. This view is, however, challenged by Lucas (1993). Focussing on seven Asian countries (Indonesia, Malaysia, Philippines, Singapore, South Korea, Thailand and Taiwan) over the period 1960-87, he considered two measures of market size. One concerns the export market and the other concerns the domestic market. The results revealed a weak relationship between the size of domestic market and the volume of FDI and a high degree of responsiveness of FDI to incomes in major export markets. This may reflect the outward orientation of foreign firms located in this region. FDI inflows are also found to be more responsive to wages than to costs of capital including taxes.

## ***II.2. Trade and foreign exchange policy***

The impact of trade and foreign exchange policy was examined, among others, by Hufbauer et al. (1994), Froot and Stein (1991), Cushman (1985) and Goldberg and Kolstad (1995). Hufbauer et al. (1994) show that the size and openness of the host country are important determinants of FDI flows from the United States and Japan. The relationship between FDI flows and exchange rate was examined by Froot and Stein (1991) who found that FDI inflows are negatively correlated with the value of the dollar. This implies that a depreciated currency can stimulate in buying control of productive corporate assets. Cushman (1985) focussed on the effects of real exchange rate risk and expectations on FDI. The results show significant reductions in US direct investment associated with increases in the current real value of foreign exchange, and very strong reductions associated with the expected appreciation of real foreign exchange. Goldberg and Kolstad (1995) explore the implications of short-term exchange rate variability on FDI flows and support the hypothesis that volatility contributes to the internationalization of production.

Some studies focused on other policies such as grants, subsidies, tax abatement, loan's guarantees and interest subsidies. Gubert and Mutti (1991) found that incentive schemes designed to attract FDI flows were effective in altering foreign investment decisions. Brewer (1993) points out that these policies can either increase or decrease

market imperfections and therefore increase or decrease levels of FDI. Loree and Guisinger (1995) suggest that the effect of policies on FDI may differ between developing and developed countries. Finally, Castanaga et al (1998) found that exchange rate distortions in the host country do not have a negative effect on FDI flows while growth expectations exert a positive effect and corruption a negative one.

### ***II.3. Other aspects of the business climate***

Economists generally acknowledge the important role of infrastructure in stimulating growth and investment. Wheeler and Mody (1992) found that infrastructure quality is an important determinant of FDI inflows to LDCs. Labor costs and the existing foreign investment also play an important role. Their results also suggested that incentive variables to attract more FDI flows such as tax breaks or short run grants have only a limited effect because transfer pricing and deduction of foreign taxes provide alternative ways to reduce the amount of paid taxes. Richaud et al (1999) provided additional support to the positive impact of infrastructure on FDI. Drawing on endogenous growth theory, they set up a four-equation model to investigate the impact of infrastructure on growth, trade, domestic investment and FDI. Their estimates confirmed the positive impact of infrastructure on FDI.

Political instability is expected to have a negative effect on FDI flows through its impact on profit uncertainty. Root and Ahmed (1979) tested for the effect of economic, social and political variables on FDI. They found that four economic (per capita GDP, GDP growth rate, economic integration, importance of transport, commerce and communication) one social (degree of urbanization) and one political (the number of constitutional changes in government leadership) variables have an effect on FDI. Schneider and Frey (1985) reexamined the issue and concluded that both economic and political factors are crucial for FDI flows to LDCs. As far as economic factors are concerned, FDI reacts positively to per capita GNP and negatively to the balance of payments deficit. Growth of GNP and the workers' skill level are found to have weak effects on FDI decisions. Regarding political determinants, the amount of bilateral aid coming from Western countries has a strong positive effect on FDI flows, while the government's ideological position (right or left wing position) does not have any significant effect.

The role of institutions is crucial in terms of commitments to and enforcement of rules. Corruption is generally put at the heart of the non-enforcement of rules in LDCs. It is found to depress growth and domestic investment and to contribute to an unfair wealth distribution (Mauro, 1995). Wei (2000) carefully examined the relationship between FDI and corruption. He used three measures of corruption, all of which are based on surveys of international entrepreneurs. The estimation results showed the existence of a negative relationship between corruption level in the host country and inward foreign direct investment. Henisz (2000a) examined the effect of commitment to rules on growth and investment. He focused on the effect of frequent or arbitrary changes in taxation, regulation and other relevant economic policies. He found that commitment to rules has a statistically and economically significant impact on growth and that this result is robust to various specifications. Henisz (2000b) focused on the effects of political hazard and contractual hazard on investment decision of multinational corporations. The results confirm that firms are more likely to enter wealthier countries with large population and credible political rules.

### III. The Empirical Analysis

#### III.1. Trade and Foreign Exchange Liberalization

Empirical studies differ with respect to FDI specifications. The differences concern both the variables to be included in the specification and their definition (nominal versus real measures and levels versus growth rates). A common specification relates nominal FDI to GDP, per capita GDP and the growth rate of GDP (see UNCTAD, 1998). Here, we adopt this basic specification to which we add indicators of trade and foreign exchange liberalization:

$$\text{Log}(FDI) = \alpha_0 + \alpha_1 \log(GDP) + \alpha_2 \log(GDPpc) + \alpha_3 RGDP + \alpha_4 Lib + \mu \quad (1)$$

With

<i>FDI</i> :	nominal FDI
<i>GDP</i> :	nominal GDP of the host country
<i>GDPpc</i> :	real per capita GDP
<i>RGDP</i> :	real GDP growth rate of the host country
<i>Lib</i> :	trade and foreign exchange liberalization indicator
$\mu$ :	error term.

*GDP* captures the size of the host country's internal market. A higher GDP is assumed to imply better market opportunity and more attractiveness for FDI ( $\alpha_1 > 0$ ). *GDPpc* is related to the wealth of the resident of the host country and then to demand effectiveness. A higher real GDP per capita is also supposed to increase the attractiveness for FDI ( $\alpha_2 > 0$ ). The *RGDP* reflects the dynamism of the host country and its future market size. An increase in the growth rate of real GDP characterizes a dynamic economy which may be more attractive for investors ( $\alpha_3 > 0$ ).

Finally, we expect trade and foreign exchange liberalization to participate in a friendly climate for business and investment and to lead to more FDI inflows ( $\alpha_4 > 0$ ). A synthetic indicator of trade and foreign exchange liberalization is provided by Sachs and Warner (1995). This is a dummy variable (*S-W*) taking the value one for the years during which a country was classified as liberalized and the value zero otherwise. A country is classified as liberalized according to the following criteria: (a) Non-tariff barriers covering less than 40 percent of traded goods, (b) average tariff rates below 40 percent, (c) a BMP of less than 20 percent, (d) no extreme controls in the form of taxes, quotas or state monopolies on exports and (e) the country is not considered a socialist country.

Equation (1) was first estimated using the above indicator (*S-W*). We, then, split this indicator into four components: one concerns openness to trade and the others concern foreign exchange market.

Trade openness measured as the ratio of trade to GDP has been used extensively in the literature. This ratio is not appropriate for the case of MENA countries. Several MENA countries have high trade ratios reflecting partly the nature of their factor



endowment (oil in particular). We therefore use an indicator which correct for this bias. The indicator chosen is calculated as the ratio of imports plus exports to GDP from which we have deducted the “Natural Trade Openness” of the economies calculated by Frankel and Romer (1999)<sup>3</sup>, as well as the exports of oil and mining products. This indicator reflects better the trade policy (*TPol*) of a country than the simple trade openness ratio.

Regarding exchange market, we use the dollar real exchange (*RER*), its volatility (*RERVol*) and the Black Market Premium (*BMP*). The latter — which is a widely used measure of distortion in foreign exchange market — as well as RER volatility and appreciation are expected to affect negatively FDI flows.

$$\begin{aligned} \text{Log}(FDI) = & \alpha_0 + \alpha_1 \log(GDP) + \alpha_2 \log(GDPpc) + \alpha_3(RGDP) + \alpha_4 \log(TPol) + \\ & \alpha_5 \log(RER) + \alpha_6 \log((RERVol) + \alpha_7 \log(BMP) + \mu \end{aligned} \quad (1')$$

Equations (1) and (1') were estimated using a sample of cross-section and time series data. The sample includes annual data from 1990 to 1999 and covers 48 to 72 countries (excluding OECD and East European countries, see *Annex 1* for the list of countries). We used panel data econometric methodology. Tests of fixed and random effects were conducted to select the most adequate models. The estimates are heteroskedastic consistent.

---

<sup>3</sup> The “Natural Openness” of the economy is calculated by Frankel and Romer (1999) by taking into account the size and the distance of the markets of the countries concerned.

**Table 1: Trade and Foreign Exchange Liberalization**  
(Dependant variable Logarithm of total FDI)

Specifications Variables	Specification 1		Specification 2		Specification 3		Specification 4		Specification 5	
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
GDP	1.57*	(6.95)	2.35*	(7.35)	1.90*	(4.76)	2.06*	(6.23)	1.57*	(3.99)
GDP per capita	1.37*	(2.72)	0.06	(0.08)	0.41	(0.50)	0.05	(0.06)	0.79	(0.90)
GDP growth	0.01	(1.33)	0.01	(1.35)	0.02	(1.24)	0.01	(1.19)	0.02	(1.13)
Indicator S-W	0.49*	(2.01)								
Trade Policy			1.00*	(2.57)	1.00*	(2.18)	0.99*	(2.47)	0.99*	(2.12)
Real Exchange Rate			-0.50**	(-1.64)	-0.28	(-0.47)	-0.41	(-1.39)	-0.21	(-0.36)
Black Market Prem.					-0.18*	(-2.80)			-0.18*	(-2.57)
RER Volatility							-0.30*	(-2.94)	-0.26*	(-2.25)
Number of countries	72		49		48		49		48	
Number of observations.	646		434		298		428		295	
Adjusted R <sup>2</sup>	0.84		0.84		0.83		0.85		0.83	
Fixed effects	F(71,570)=12.7		F(48,380) = 13.2		F(47,244) = 7.5		F(48,373) = 13.6		F(47,240) = 7.4	
Random effects	CHISQ(3)=39.1		CHISQ(5)=45.7		CHISQ(6)=148.5		CHISQ(5)=23.4		CHISQ(6)=16.9	

Note: Data have been compiled from WDI (2002).

\* and \*\*: significant at the 5% and the 10% respectively.

Source: Authors' estimations

Table 1 reports the estimation results. There are four specifications: the first one incorporates the Sachs-Warner indicator; the remaining three include trade policy and various combinations of exchange market indicators. The fixed effects and the random effects tests support the focus on the fixed effects model.

In specification 1, all the coefficients are significant (except for GDP growth, *RGDP*) with the expected sign. This is the case of the coefficient of the Sachs-Warner indicator of trade and foreign exchange liberalization (*S-W*). This indicates that trade and foreign exchange reforms increase total FDI inflows. In the other specifications, the coefficients of per capita GDP (*GDPpc*), GDP growth (*RGDP*) and real exchange rate (*RER*) are never significant (at the 5% level) while having the expected sign. In contrast, the coefficients of trade policy (*TPol*), *BMP* and exchange rate volatility (*RERVol*) are consistently significant across specifications.

In other words, a high degree of trade openness of the host country has clearly increased total FDI inflows. As well, exchange rate volatility and distortions in the foreign exchange market had a negative impact on total FDI inflows. These results are consistent with Lucas (1993) who found high degree of responsiveness of FDI to incomes in major export markets for Asian countries and related it to the outward orientation of foreign firms located in this region. Note also that Hufbauer et al (1994)

have found that the size and trade openness of the host countries are important determinants of FDI flows.

### ***III.2. Investment Climate***

The above results lend clear support to the positive impact of trade and foreign exchange liberalization on total FDI inflows. However, international evidence (see Dasgupta et al, 2002) suggests that companion policies aiming at strengthening the investment climate would be needed to further increase the attractiveness of a country. To disentangle the role of the various determinants, we augmented and re-estimated equation 1 with indicators of infrastructure availability, economic and political stability. Given the reported strong complementarity between FDI and human capital (Borensztein et al, 1998) an indicator of the availability of adequate human capital is also considered. The indicators were first introduced separately and then simultaneously (see Equation (2)).

We used the aggregate Sachs and Warner (1995) index of trade and foreign exchange liberalization (*S-W*) and did not use a similar split as in Table 1. Otherwise — given the missing observation for exchange rate variables (*RER* and *RERVol*) and *BMP* on the one hand and those for the additional variables on the other hand — we would have ended-up with a very limited number of observations.

As an indicator of human capital we used the secondary school enrolment ratio (*Enrol2*). The number of fixed phones per capita proxies the availability of infrastructure (*Phone*). The indicators of economic and political stability were drawn from the International Country Risk Guide (1999) where a numerical value is assigned to a predetermined range of risk components. The scale awards the highest value to the lowest risk and the lowest value to the highest risk. The economic risk rating (*EcoStab*) provides an assessment of a country's current economic strengths and weaknesses<sup>4</sup> while the aim of the political risk rating (*PolStab*) is to provide a mean of assessing the political and institutional framework of the countries<sup>5</sup> (see ICRG, 1999).

$$\begin{aligned} \text{Log}(FDI) = & \alpha_0 + \alpha_1 \log(GDP) + \alpha_2 \log(GDPpc) + \alpha_3 (RGDP) + \alpha_4 (S - W) + \\ & \alpha_5 \log(Enrol2) + \alpha_6 \log(Phone) + \alpha_7 (EcoStab) + \alpha_8 (PolStab) + \mu \end{aligned} \quad (2)$$

---

<sup>4</sup> The economic risk rating includes: GDP per capita, real GDP growth, annual inflation rate, budget and current account balance as percentage of GDP.

<sup>5</sup> The political risk index is composed of 12 indicators: government stability, socioeconomic conditions, investment profile, internal and external conflicts, corruption, military in politics, religion in politics, law and order, ethnic tensions, democratic accountability, bureaucratic quality.

**Table 2: Trade and Foreign Exchange Liberalization and Business Environment**  
(Dependant variable Logarithm of total FDI)

Specifications Variables	Specification 1		Specification 2		Specification 3		Specification 4		Specification 5	
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
GDP	1.39*	(5.77)	1.04*	(3.58)	1.22*	(5.00)	1.53*	(6.26)	0.75*	(2.44)
GDP per capita	1.12*	(2.14)	0.12	(0.19)	1.10*	(2.22)	1.37*	(2.66)	0.35	(0.52)
GDP growth	0.01	(1.19)	0.01**	(1.73)	0.00	(1.03)	0.01	(1.52)	0.01*	(2.23)
Indicator S-W	0.64*	(2.49)	0.50**	(1.99)	0.44	(1.43)	0.51**	(1.71)	0.59**	(1.74)
Education	1.19*	(2.24)							0.85	(1.42)
Fixed Phones			0.79*	(3.59)					0.45**	(1.90)
Political Stability					0.03*	(4.61)			0.02*	(2.24)
Economic Stability							0.03**	(1.88)	0.03*	(2.31)
Number of countries	70		71		64		63		62	
Number of observations.	624		548		572		554		469	
Adjusted R <sup>2</sup>	0.85		0.87		0.85		0.85		0.87	
Fixed effects	F(69,549)=13.3		F(70,472)=12.9		F(63,503)=13		F(62,486) = 14		F(61,399) = 13.6	
Random effects	CHISQ(4)=39.0		CHISQ(4)=20.1		CHISQ(4)=16.7		CHISQ(4) = 35.7		CHISQ(7) = 22.7	

Note: Data have been compiled from the WDI (2002) and from ICRG (1999) for political and macroeconomic stability.

\* and \*\*: significant at the 5% and the 10% respectively.

The results are those of the fixed effect model.

The estimates are heteroskedastic consistent.

Source: Authors' estimations

The estimation results are presented in Table 2. A first interesting result concerns the liberalization index (*S-W*). This variable is always significant (except in the third specification)<sup>6</sup> and its coefficient level is broadly similar across specifications (i.e. between 0.44 and 0.64, see Tables 1 and 2).

When additional determinants of FDI are introduced separately (i.e. human capital (*Enrol2*), fixed phones (*Phone*), political (*PolStab*) and economic stability (*EcoStab*)), their coefficients are always significant with the expected positive sign. When these are introduced simultaneously, the coefficient of human capital (*Enrol2*) become insignificant — due to possible co-linearity.

At this stage of the empirical analysis, we can conclude that the impact of trade and foreign exchange liberalization is robust and consistent across specifications. This impact is rather strong: one standard deviation of the *S-W* indicator leads to an increase of 0.2 point of the log of FDI. The results also confirm that a friendly

<sup>6</sup> In this case — although positive — the significance level of the coefficient is slightly below 10%.

business climate complements trade and foreign exchange reform in further attracting FDI<sup>7</sup>. For instance, one standard deviation improvement of physical infrastructures leads to an increase of 0.11 point of the log of FDI.

### ***III.3. FDI in Manufacturing***

In the previous section, we have empirically validated the positive role of trade and foreign exchange liberalization, as well as of the investment climate on total FDI flows to the developing world. FDI in manufacturing being more productive than total FDI, it is interesting to ask the question of its determinants.

In this section, we have investigated if trade and foreign exchange liberalization, as well as the investment climate have constituted pertinent explanatory factors of the attractiveness of a country in terms of FDI flows to the manufacturing industry. Equation (2) has been tested by replacing total FDI by FDI in manufacturing.

The equation has been estimated using a sample of 20 to 26 countries from 1990 to 1999 (see *Annex 1* for the list of countries). Due to the lack of information on FDI in manufacturing, our sample has been substantially reduced. As before, we used panel data econometric techniques.

The estimation results are presented in Table 3. As previously, the liberalization index (*S-W*) is positive and significant in all specifications. The impact of trade and foreign exchange liberalization on FDI inflows (total and in manufacturing) is therefore robust and consistent.

---

<sup>7</sup> In addition, our estimations show that the coefficients of the control variables (*GDP*, *GDPpc* and *RGDP*) have the expected sign and are comparable to those in the first specification in Table 1. Like the later, only the GDP coefficient is consistently significant across specification, but unlike it, the two other coefficients became significant in many instances.

**Table 3: Trade and Foreign Exchange Liberalization and Business Environment**  
(Dependant variable Logarithm of FDI in the manufacturing industry)

Specifications Variables	Specification 1		Specification 2		Specification 3		Specification 4		Specification 5		Specification 6	
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
GDP	1.22*	(3.05)	1.33*	(3.05)	0.77	(1.55)	0.24	(0.55)	1.15*	(2.66)	0.48	(0.74)
GDP per capita	1.08	(1.13)	1.40	(1.35)	0.47	(0.36)	1.11	(1.33)	1.12	(1.17)	1.41	(1.07)
GDP growth	-0.01	(0.74)	-0.01	(1.04)	-0.01	(0.41)	-0.02**	(1.68)	-0.01	(0.61)	-0.02	(1.51)
Indicator S-W	1.04*	(2.31)	0.93**	(1.98)	1.1*	(2.41)	1.09*	(2.59)	1.06*	(2.27)	0.87*	(2.1)
Education			0.77	(0.88)							-1.36	(1.56)
Fixed Phones					0.79*	(2.2)					0.21	(0.55)
Political Stability							0.05*	(4.25)			0.05*	(3.7)
Economic Stability									0.01	(0.4)	-0.03	(1.3)
Number of countries	21		21		21		20		20		20	
Number of observations.	148		148		139		144		144		135	
Adjusted R <sup>2</sup>	0.9		0.9		0.91		0.91		0.89		0.92	
Fixed effects	F(20,123)=18.3		F(20,122)=18.2		F(20,113) = 19.4		F(19,119) = 18.2		F(19,119) = 18.2		F(19,107)=19.2	
Random effects	CHISQ(3)= 6.3		CHISQ(4)=17.2		CHISQ(4)=0.65		CHISQ(4)=4.7		CHISQ(4)=6.0		CHISQ(4)=8.3	

Note: Data have been compiled from the WDI (2002), from UNCTAD for the FDI in the manufacturing industry and from ICRG (1999) for political and macroeconomic stability.

\* and \*\*: significant at the 5% and the 10% respectively.

The results are those of the fixed effect model.

The estimates are heteroskedastic consistent.

Source: Authors' estimations

Another important finding consists in the magnitude of the coefficient of the liberalization index. This coefficient is almost double than in the case of total FDI (0.9 to 1.1 compared to 0.44 to 0.64). This makes trade and foreign exchange liberalization an even more important factor for the attractiveness of a country when more productive FDI is concerned. This can be justified by the fact that trade and foreign exchange liberalization introduces more competition, provides more market opportunities and allows for more technology transfers. These conditions can be considered as good incentives for the manufacturing sector to invest — especially when export oriented.

When additional determinants of FDI are introduced separately in the equation (i.e. human capital (*Enrol2*), fixed phones (*Phone*), political (*PolStab*) and economic stability (*EcoStab*)), their coefficients have the expected positive sign but are not always significant. This is the case of education (*Enrol2*) and of economic stability

(*EcoStab*). When these indicators are introduced simultaneously, only the coefficient of political stability (*PolStab*) remains significant<sup>8</sup>.

In summary, the estimation of the determinants of FDI in the manufacturing industry has revealed to be more difficult than the one of total FDI. Some results seem, however, robust. This is the case of the size of the market (which gives to the foreign investors a positive signal to invest in a country), of trade and foreign exchange liberalization (which impact on FDI flows is always significant), as well as of political stability. These are interesting findings which should not be neglected if a country wants to attract more productive FDI.

Other factors — such as education, core infrastructure or macroeconomic condition — could also have played a significant role in attracting more productive FDI. The small size of our sample however — when focusing on FDI in the manufacturing industry — must explain the difficulties in estimation. These factors should, nevertheless, be considered carefully when implementing the reform agenda of the MENA countries.

#### **IV. Trade and Foreign Exchange Liberalization and Investment Climate in the MENA Countries**

In this section, we use the econometric results to assess the respective impact of liberalization and investment climate on the low attractiveness of the MENA countries in term of FDI (see Table 4). The impact of liberalization will be assessed using the S-W index.<sup>9</sup> Using equation (2) (specification 5) we find that FDI flows to the region could have been of 2.3% of GDP (instead of 1.2%) during the 1990s, if trade and foreign exchange liberalization had reached the level of East Asia. In the case of *Algeria*, *Egypt*, *Iran* and *Syria*, FDI flows to GDP could have reached respectively 1.8%, 2.8%, 1.5% and 2.4% (instead of 0.3%, 1.3%, 0% and 2.4%, see Table 4). These figures enlighten the high contribution of the deficit in trade and foreign exchange reforms to the low attractiveness of the MENA countries.

Impact of trade and foreign exchange liberalization is even stronger in the case of FDI in the manufacturing sector (see Table 3, section 3.3). These flows have been very high in East Asia where trade and foreign exchange reforms have always been significant. If MENA had undertaken the same level of reforms, FDI in manufacturing could have increased by 1.2 % of GDP (for a lower level than total FDI).

Similar conclusions can be drawn for physical infrastructures (proxied by the number of fixed phones). Identically, the gap with East Asia explains significantly the deficit in FDI flows to the region. In the 1990s, if the MENA countries had increased their infrastructures to the level of the East Asian economies, FDI flows could have reached 2.5% of GDP (compared to 1.2%). As far as countries' experience is

---

<sup>8</sup> In addition, the coefficient of GDP has the expected sign, but is only significant in half of the cases (specifications 1,2 and 5). On another side, GDP per capita (*GDPpc*) and GDP growth rate (*RGDP*) are never significant.

<sup>9</sup> For Tunisia, Morocco, Jordan and Yemen the index is equal to 1 over the 1990s. Hence, the impact of improvement can not be computed in the present framework.

concerned, *Yemen, Morocco, Algeria* and *Egypt* have shown a low development in physical infrastructures. In the case of these countries, a level of equipment similar to the one of East Asia would have boost FDI which could have increased by 1.4 to 1.7% of GDP.

Improvement in either economic or political stability gives similar impact to the one of liberalization. In the 1990s, if the MENA countries have had comparable records to the East Asia in terms of economic or political stability, FDI flows to GDP could have increased by around 1.1 percentage point. Assuming that sound governance could have improved both indicators, the total impact on FDI becomes twice the one of liberalization. As far as countries' experience is concerned, the largest impact concerns *Algeria*. The impacts for the other countries are comparable.

Finally, if trade and foreign exchange liberalization, development of infrastructures, and sound governance are considered at the same time, FDI flows to MENA could have significantly catch up with East Asia.

**Table 4: FDI to GDP in the 1990s (%) and expected improvement**

	Actual	Increase with improvement in				Potential
		Trade and exchange rate policies	Fixed Phone	Economic stability	Political stability	
<b>Algeria</b>	<b>0,3</b>	1,5	1,4	1,3	1,5	<b>6,0</b>
<b>Egypt</b>	<b>1,3</b>	1,5	1,3	1,1	1,2	<b>6,4</b>
<b>Iran</b>	<b>0,0</b>	1,5	1,2	1,2	1,1	<b>5,0</b>
<b>Jordan</b>	<b>1,2</b>		1,3	1,1	1,1	<b>4,6</b>
<b>Morocco</b>	<b>1,6</b>		1,4	1,1	1,1	<b>5,2</b>
<b>Syria</b>	<b>0,9</b>	1,5	1,2	1,2	1,1	<b>5,8</b>
<b>Tunisia</b>	<b>2,1</b>		1,3	1,1	1,0	<b>5,5</b>
<b>Yemen</b>	<b>2,0</b>		1,7	1,3	1,2	<b>6,2</b>
<b>MENA</b>	<b>1,2</b>	1,1	1,3	1,1	1,1	<b>5,8</b>

Source: Authors' calculations

## V. Conclusion

The paper shows, for a panel of 26 to 72 countries studied during the 1990s, that trade and foreign exchange liberalization has constituted a key factor for the attractiveness of a country in terms of FDI. This result is robust regardless the type of FDI (total or in manufacturing), the indicator of trade and foreign exchange liberalization, and the specification used. The findings also highlight the important role of various aspects of the investment climate in increasing countries' attractiveness in term of FDI.

Our analysis supports the argument that the weak FDI record of the MENA region can largely be explained by the lack of reforms of the economies. This is the case of trade and foreign exchange reforms which has been insufficient compared to other more successful countries in East Asia and Latin America. Actually, the deficit in reforms constituted a real obstacle for foreign investors which could have almost doubled their participation if MENA countries had reached in the 1990s the same level of liberalization than in East Asia. This impact is even stronger if one considers FDI in the manufacturing sector. Similar conclusions were reached regarding the quality of



governance and the availability of physical infrastructures. The gap between the MENA and East Asia regarding each of these factors has caused deficits of, respectively, 2.2% and 1.3% in term of FDI, to GDP, flows to the region.

The message to MENA's policy makers is twofold. First, trade and foreign exchange liberalization are key factors to the attractiveness of the region in terms of FDI. Second improvements in other aspects of the investment climate are important complements to liberalization and can result in a sensitive increase of FDI inflows. The latter is comparable to the one resulting from liberalization policies. Hence, although institutional reforms can take time, they deserve the necessary efforts given their outcomes as compared to other reforms. All MENA countries are concerned by a substantial effort to improve their investment climate. When liberalization, governance and infrastructures effects are taken together, FDI flows to MENA catch up with East Asia. This should not be forgotten when implementing the reform agenda of the MENA countries.

## References

- Agosin M. R. and R. Mayer (2000), Foreign investment in developing countries: Does it crowd in domestic investment?, UNCTAD working paper 146.
- Achy, L. and Kh. Sekkat, (2003), The European Single Currency and MENA's Exports to Europe, *Review of Development Economics*, 7, 563-583.
- Agarwal, J. P. (1980), Determinants of foreign direct investment: A survey, *Weltwirtschaftliches Archiv* 116, 739-773.
- Blomstrom, M., Lipsey, R. and R., Zejan (1992), What explains developing country growth, NBER working paper 4132.
- Borensztein, J., J. De Gregorio and J-W. Lee (1998), How does foreign direct investment affect economic growth?, *Journal of International Economics* 45, 115-135.
- Brewer Th. L. (1993), Government policies, market imperfections, and foreign direct investment, *Journal of International Business studies* 24 (1), 101-120.
- Castanaga V., J. Nugent and B. Pashamova (1998), Host country reforms and FDI inflows: how much difference do they make?, *World Development* 26(7), 1299-1314.
- Cushman, D. O. (1985), Real exchange rate risk, expectations, and the level of direct investment, *The Review of Economics and Statistics* 67 (2), 297-308.
- Dasgupta, D., M. Nabli, C. Pissarides and A. Varoudakis (2002), Making Trade Work for Jobs : International Evidence and Lessons for MENA, World Bank mimeo
- De Gregorio, J. (1992), Economic growth in Latin America, *Journal of Development Economics* 39, 58-84.
- Dunning, J. D. (1981), Explaining the international direct investment position of countries toward a dynamic or development approach, *Weltwirtschaftliches Archiv* 117, 30-64.
- Dunning, J. D. (1988), The eclectic paradigm of international production: a restatement and some possible extensions, *Journal of International Business studies* 19(1), 1-31.
- Frankel, J.A. and D. Romer (1999), Does Trade Cause Growth?, *The American Economic Review*, Vol 89, N°.3.
- Froot K. A. and J. C. Stein (1991), Exchange rates and foreign direct investment: An imperfect capital markets approach, *Quarterly Journal of Economics* 106 (4), 1191-1217.

Goldberg L. S. and Ch. D. Kolstad (1995), Foreign direct investment, exchange rate variability and demand uncertainty, *Journal of International Economics* 36, 855-873.

Grubert, H. and J. Mutti (1991), Taxes, tariffs and transfer pricing in multinational corporate decision making, *Review of Economics and Statistics* 5, 285-293.

Henisz J. W. (2000a), The institutional environment for economic growth, *Economics and Politics* 12 (1), 1-31.

Henisz J. W. (2000b), The institutional environment for multinational investment, Working paper of the Reginald H. Jones Center, The Wharton School, Yniversity of Pennsylvania.

Hufbauer G., D. Lakdawalla and A. Malani (1994), Determinants of direct foreign investment and its connection to trade, *UNCTAD Review*, 39-51.

International Country Risk Guide (1999), Brief Guide to the Ratings System.

Loree D. W. and S. E. Guisinger (1995), Policy and non-policy determinants of U.S. equity foreign direct investment, *Journal of International Business Studies* 26 (2), 281-299.

Lucas, R. E. B. (1993), On the determinants of direct foreign investment: Evidence from East and Southeast Asia, *World Development* 21 (3), 391-406.

Makdisi S., Z. Fattah and I. Limam (2000), Determinants of Growth in The MENA Countries, the Global Development Network

Mauro, P. (1995), Corruption and growth, *Quarterly Journal of Economics* 110, 681-712

Nabli M. K. and A. I. De Kleine (2000) , Managing Global Integration in the Middle East and North Africa, in B. Hoekman and H. Kheir-El-Din (Ed.) "Trade Policy Developments in the MENA", published by the World Bank.

Nabli, M. K. and M.A. Veganzones-Varoudakis (2003), "Reforms and Growth in the MENA Countries: New empirical evidences", *Middle East and North Africa Working Paper Series*, the World Bank, Washington D.C (forthcoming).

Richaud, C., Kh. Sekkat and A. Varoudakis (1999), Infrastructure and Growth Spillovers: A Case for a Regional Infrastructure Policy in Africa, Mimeo, University of Brussels.

Root, F. and A. Ahmed. 1979, Empirical determinants of manufacturing direct foreign investment in developing countries, *Economic Development and Cultural Change* 27: 751-67.

Sachs, J. and A. Warner (1995), Economic reform and the process of global integration, *Brookings Papers on Economic Activity* 1, 1-117.

Schneider, F. and B. Frey (1985), Economic and political determinants of foreign direct investment, *World Development* 13(2), 161-175.

Sekkat Kh. and A. Varoudakis (2002), The Impact of Exchange and Trade Policy Reforms on Manufactured Exports in North Africa, *Development Policy Review*, 20,177-191.

UNCTAD (1992), *World Investment Reports*.

UNCTAD (1998), *World Investment Reports*

WDI (2002), *World Development Indicators*, World Bank, Washington, D.C..

Wei S-J. (2000), How taxing is corruption on international investors?, *The Review of Economics and Statistics* 82 (1) 1-11.

Wheeler, D. and A. Mody (1992), International investment location decisions: The case of U.S. firms, *Journal of International Economics* 33, 57-76.

## Appendix 1: List of countries in the various Samples

Sample size	72	49	48	26
<b>Country</b>				
Angola	Y			
Argentina	Y	Y	Y	Y
Bangladesh	Y	Y	Y	Y
Benin	Y			
Bolivia	Y	Y	Y	Y
Botswana	Y	Y	Y	
Brazil	Y	Y	Y	Y
Burkina Faso	Y	Y	Y	
Cameroon	Y	Y	Y	
Central African Republic	Y			
Chad	Y			
Chile	Y	Y	Y	Y
China	Y	Y	Y	Y
Colombia	Y	Y	Y	Y
Congo, Rep.	Y			
Costa Rica	Y	Y	Y	Y
Cote d'Ivoire	Y	Y	Y	
Cyprus	Y			
Dominican Republic	Y			
Ecuador	Y	Y	Y	Y
<b><i>Egypt</i></b>	Y	Y	Y	
El Salvador	Y	Y	Y	
Ethiopia	Y			Y
Gabon	Y			
Gambia	Y	Y	Y	
Ghana	Y	Y	Y	
Guatemala	Y	Y	Y	
Guinea	Y			
Guinea-Bissau	Y			
Haiti	Y			
Honduras	Y			
India	Y	Y	Y	Y
Indonesia	Y	Y	Y	Y
<b><i>Iran.</i></b>	Y	Y	Y	
Israel	Y	Y	Y	
Jamaica	Y			
<b><i>Jordan</i></b>	Y	Y	Y	
Kenya	Y	Y	Y	Y
<b><i>Kuwait</i></b>		Y	Y	
Madagascar	Y	Y	Y	
Malawi	Y	Y	Y	
Malaysia	Y	Y	Y	Y
Mali	Y			
Mauritania	Y			

Mauritius	Y	Y	Y	
<b>Morocco</b>	Y	Y	Y	Y
Mozambique	Y	Y	Y	
Nepal	Y			
Nicaragua	Y			
Niger	Y	Y	Y	
Nigeria	Y	Y	Y	
Pakistan	Y	Y	Y	Y
Papua New Guinea	Y			
Paraguay	Y	Y	Y	Y
Peru	Y	Y	Y	Y
Philippines	Y	Y	Y	Y
Rwanda	Y			
Senegal	Y	Y	Y	
Sierra Leone	Y			
Singapore	Y	Y		Y
South Africa	Y	Y	Y	
Sri Lanka	Y	Y	Y	Y
<b>Syria</b>	Y	Y	Y	
Tanzania	Y	Y	Y	
Thailand	Y	Y	Y	Y
Togo	Y	Y	Y	
<b>Tunisia</b>	Y	Y	Y	Y
Turkey	Y			
Uruguay	Y	Y	Y	
Venezuela	Y	Y	Y	Y
<b>Yemen, Republic</b>	Y			
Zambia	Y	Y	Y	Y
Zimbabwe	Y			Y