

## The Inefficiency of Fiscal Policy in Attracting Foreign Direct Investment in Selected Arab Countries

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### ABSTRACT

This study examines the effect of fiscal policy on foreign direct investment in five Arab countries (Egypt, Jordan, Morocco, Oman, and Tunisia). The foreign direct investment is assumed to be functionally related to its lag, growth rate of real GDP, openness to international trade, and a vector of fiscal policy indexes (import duties, corporate profit taxes, government spending, and capital expenditure). The empirical results obtained by estimating different regression models reveal empirical evidence supporting the hypothesis that fiscal policy does not affect the foreign firms' motives to invest abroad. The regression statistics turn out to be robust across the regression models estimated above. In light of the results obtained, the selected countries examined must review their existing fiscal policies to efficiently attract more foreign direct investment.

### 1. INTRODUCTION

Increased importance has been attached in recent years to Foreign Direct Investment (FDI), both in relatively mature economies such as that of the United States and in the underdeveloped economies of the world as well. Big countries, like China or USA, use their potentially huge domestic markets to persuade foreigners to share their technology with local partners. In contrast, small countries do not have this option, so many of them usually offer fiscal policy incentives instead. In this context, policymakers usually face two difficulties in formulating and designing fiscal policy measures. The first is the efficiency of the measures proposed in achieving specific objectives, like industrial development. The second is the compatibility of these measures with the broad objectives, such as equitable distribution of income.

From the viewpoint of the international business theory, inward FDI increases host industry productivity through two channels. The first is which Caves (1996) calls allocative efficiency. In its crudest form, the allocative efficiency implies that foreign firms enter and force marginal incumbents to improve the resource

allocation at both the firm and industry level. Consequently, the remaining incumbents must also, in a way or another, improve their own technical efficiency to ensure their continued survival. Studies by Baldwin (1995) and Nickell (1996) provide empirical evidence confirming the productivity gains that result from improved technical and allocative efficiency as well.

The second channel through which inward FDI increases productivity is technology transfer from foreign entrants to incumbent firms. This channel is basically based on the assumption that foreign entrants possess intangible capabilities that might be purposefully or incidentally transferred to incumbents. Applying the new capabilities increases the incumbent firms' productivity, which then aggregates up productivity improvement at the industry level.

In the post years of Madrid<sup>(1)</sup> peace conference, policymakers in most of the Middle East and North Africa countries (MENA) were heavily involved in the process of reshaping the Middle East. Regional and international efforts were directed to ensure foreign investors' direct involvement in the process of economic development and reconstruction on the regional level. For example, several economic and political forums have been organized on the international level to identify the joint ventures that have the potential of achieving peace and economic stability.

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During this period, most MENA countries began to give more emphasis to fiscal policies that are expected to have a potential in attracting more FDI. With varying stress, the measures proposed can be divided into three broad categories. First, they have promulgated a number of laws and regulations concerning foreign investment. Second, they have provided fiscal policy incentives such as tax and tariff deductions. Third, they have formulated special preferential policies to attract foreign firms that have the ability to manufacture in industrial zones and to export abroad (Liu, 1995).

Examination of the figures of FDI over the 1995-2000 period shows the success of Israel in attracting about 45% of the total of US \$30 billion invested in all MENA countries. With the exception of Bahrain and to some extent Tunisia, the FDI patterns show a great degree of instability across countries, and across historical eras. Over all, it could be argued that with or without these policy measures, most MENA countries have failed to attract as much FDI as they need to get the industrial wheels moving and continue with their development plans. In some specific words, Arab countries need to review existing incentives offered to foreign investors. This finding must be of paramount importance for policymakers on both country and regional levels. It is the time for policymakers in all Arab countries to empirically investigate the response patterns of FDI to these measures.

Due to the lack of microeconomic (firm-specific) data, we will estimate the relationship between changes in macroeconomic variables and changes in FDI in selected Arab countries during the 1990's. The countries in the sample are chosen on data availability basis. Complete data set is only available for Egypt, Jordan, Morocco, Oman, and Tunisia. In this paper, we hypothesize that fiscal policy measures can play an important role in attracting FDI through tax breaks, appealing infrastructure, and appealing labor markets (Wilkinson, 2000; and Coyne, 1995).

With varying emphasis, each one of the selected countries in the study has shown a tremendous effort to bring the level of *per capita* real income in line with the levels in the medium-class income economies. Consequently, an increased public investment was recorded in the areas that have been effective in promoting productivity. In this context, an increased attention was recorded in infrastructure, education and health, and industrial development. Historically,

improvements in health have reduced the prevalence of endemic diseases, which greatly reduced work capacity.

The involvement of most Arab countries in the sample emphasized a combination of two approaches in promoting industrial development. The first is direct governmental undertaking of major industrial enterprises, particularly those, which will convey important secondary benefits to the economy but are not directly profitable to private enterprise. The other alternative is for the government to concentrate on encouragement to private enterprises. There are various forms of such assistance, such as the provision of a portion of the capital, and the granting of tax concessions, as well as tariff protection, which is often of utmost importance.

The paper is organized as follows. The next section summarizes the most recent studies that are clearly linked to FDI. The third section presents and discusses the econometric model and data used in estimating the empirical findings. The empirical results are presented in section four. Section five concludes the findings of the study.

## 2. Literature Review

This section basically focuses on the main theoretical arguments and empirical findings of the most popular studies about the efficiency of the different measures implemented in attracting FDI across different countries. The large number of recent studies published on FDI confirms the partial success of such studies in identifying the complete set of explanatory variables that solidly determine FDI activities. According to international production theory, the analysis of FDI and technology transfer focuses on the factors that represent incentives to transnational corporations to invest in developing countries. An example, studies by Dunning (1995) and (1998) identified the location-specific elements that have a significant role in determining FDI. These elements include natural resources, low labor costs, similarity in culture, potential government policies, and market potential of host countries. Besides these factors, ethnic ties show a great success in attracting FDI in many countries. Much of the money pouring into China comes from the 50 million Chinese Diaspora<sup>(2)</sup>.

A popular study by Brouthers et al. (1996) suggests that inward FDI depends on two sets of factors. The first category is derived from proprietary advanced technologies, such as patented technology and know-how. The second category is derived from synergies, such

as vertical and horizontal integration, economies of scale and internal financial market. The latter's advantage stems mainly from the large size of transnational corporations. According to this study, transnational corporations internalize the process of technology transfer across borders through FDI, thus reducing the risk of leaking their advantage of proprietary technology to potential competitors and exploiting their synergistic advantages.

Lin et al. (2001) empirically examined the relationship between changes in macroeconomic and microeconomic (firm-specific) determinants and changes in FDI made by Taiwanese firms for the period 1965-1993. The study confirms that at the macroeconomic level increases in Taiwanese FDI resulted from rapid accumulation of manufacturing intangible assets, and labor shortages. At the level of the individual firm, the empirical analysis presented in the paper verifies that an appreciating foreign-exchange rate, higher export profits, wider differential economic growth and international interest rates were important determinants in the decision of firm management to invest overseas.

Bashir (1998) examined the degree of association between FDI and economic growth using data from a sample of six MENA countries (Algeria, Egypt, Jordan, Morocco, Tunisia, and Turkey) during the period 1975-1990. The results suggest that, by and large, FDI leads to economic growth. The effect, however, varies across region and over time. The findings also indicate that domestic investment and openness to international trade are complementary to economic growth.

Chung (2001) attempted to identify productivity increase attributable to technology transfer. He examined change in productivity resulting from inward FDI in US manufacturing industry for 1987 through 1991. While controlling for change in industry competition, he finds that relatively uncompetitive industry experience productivity growth while competitive industry experience productivity stagnation from FDI. These findings are consistent with positive technology transfer occurring in less competitive industries where firms enter to exploit existing skills, and are consistent with less productive foreign firms entering more competitive industries to learn best-practices.

In a more recent empirical study, Feinberg and Majumdar (2001) examined whether knowledge spillovers from MNCs<sup>(3)</sup> local R and D activities benefit domestic firms in the Indian pharmaceutical industry

from 1980-1994. By estimating production functions of MNCs and domestic firms separately, they show that only MNCs gained from each other's spillovers while Indian firms gained nothing. Also, notable in their results is the significant and negative R and D stock variable for both MNCs and Indian firms.

Barney (1991) and Tsang (1997) studied the factors that encourage firms to invest abroad. They argue that a firm's capabilities are based on its resources, which can be categorized into three types: physical resources, human resources, and organizational resources. Physical resources include tangible assets, such as equipment, plant, and inventories, as well as codified technology and brand names. Human resources include uncoded experience, skills, know-how, and personal relationships. Lastly, organizational resources include operational routine, the firm's culture, organizational structure, and firm's connection with other institutions.

A previous study by Fors (1998) has shown that R and D conducted by MNC affiliates is often primarily for the purpose of regulatory compliance and local market application. Thus, there is likely a greater similarity in the R and D activities performed locally by MNCs. Moreover, Feinberg (2000) has confirmed the significance of MNC to R and D spillover in two of five American industries.

Duran and Fernando (2001) proposed the use of the intention to invest abroad as an efficiency measure of the government (institutional) promotion of FDI for 183 Spanish companies. The results presented in the study confirm that the efficiency of Expotecnia<sup>(4)</sup> mission in affecting propensity to invest depends on the degree of internationalization of the company. The efficiency of the Expotecnia is low for companies having only exporting experience, medium for companies that have sales subsidiaries abroad, and high for companies with production subsidiaries. The geographic location of the subsidiaries only heightens the propensity to invest when the subsidiaries are located in geographical areas involving a major cultural distances.

Yizheng (2001) analyzed the relationship between firm-specific technological advantages and the FDI strategies of firms with different technological capabilities<sup>(5)</sup>. The empirical findings support the argument that both large transnational corporations and small manufacturing firms possess their own firm-specific capabilities that provide them advantages when they invest in China as a developing country. The

different kinds of technology possessed by large Transnational Corporations (TNCs) and small firms from Newly Industrializing Economies (NIEs) led to different FDI strategies when they invest in China. In contrast with large TNCs from industrial countries, small firms from (NIEs) normally use mature and standardized technology and general-purpose equipment. Their core capabilities are their experience in imitating promptly and their ability to produce cost effectively new products by organizing labor-intensive production with unskilled workers. Their advantages also include the flexibility of their operations, and their cultural and social similarities with their local society.

### 3. The Econometric Model and Data

In recent years, a strategy of self-reliance and import substitution dominated developing countries policy thinking. The increased importance of this strategy came as a result of the foreign debt crisis escalated in 1980's. In this context, the broad objectives of this strategy expanded to development of national industrial capabilities, promotion of the growth of FDI, and attainable of an equitable distribution of resources. Studies by Barrell and Pain (1997), Kuemmerle (1999), Pearce and Papanastassiou (1999) demonstrated that FDI is heterogeneous and that this heterogeneity depends upon market conditions. In general, most empirical studies on FDI were based on two assumptions. First, firms may invest to exploit existing capabilities or to source new capabilities. These new capabilities may extend to include R and D, production process, managerial in nature, or fiscal policy. Second, investing firms' motives may depend on the characteristics of the market they are entering.

To assess the effect of fiscal policy on foreign firms' investing motives, we construct an econometric model in which FDI is functionally related to the rate of change in economic growth, openness to international trade, and a vector of fiscal policy variables. From the viewpoint of macroeconomic theory, one may select the variables that can affect the overall business environment, which theoretically influence foreign firms' motive to invest abroad (Majumdar 1996). Equation (1) summarizes the set of explanatory variables that will be used throughout the work.

$$FDI = f(G, O, D, T, S, C) \quad (1)$$

Where G refers to the rate of change in real GDP, O refers to Openness to international trade, D refers to

import duties, T refers to corporate profit tax, S refers to government expenditure, and C refers to government capital expenditure. More information about the way that these variables are computed will be discussed in the data section. The hypothesized relationships between FDI and these variables are expressed as follows:

$$f_G > 0; f_O > 0; f_D < 0; f_T < 0; f_S > 0; f_C > 0 \quad (2)$$

These expressions assert that real economic growth is expected to have an impact on FDI, which is positive and statistically different from zero. Studies by Barrell and Nigel (1997), and Fredric (1998) provided empirical evidence supporting this hypothesis. Similarly, increased openness to international trade stimulates FDI. The selected policy variables reported in equation (1) define the overall business environment, which influence FDI decisions that are designed at the level of the individual firm (Majumdar, 1996). To reflect the impact of taxation policies on FDI, import duties and corporate taxation are considered. As shown in expression (2), the coefficients on these variables are likely to have negative signs. The government spending and capital expenditure may reflect the governments' involvement in industrial developments, in health, education, and infrastructures, which greatly stimulate the foreign firms' motives to invest abroad.

To empirically test the regression model in equation (1), the following specification is estimated

$$Y_{it} = \beta_0 + \beta_1 Y_{it}(-1) + \beta_2 G_{it} + \beta_3 O_{it} + \beta_4 D_{it} + \beta_5 T_{it} + \beta_6 S_{it} + \beta_7 C_{it} + e_{it} \quad (3)$$

For more convenience Y stands for Ln(FDI), where Ln represents natural logarithms, Y(-1) represents the lagged dependent variable,  $G_{it} = \text{Ln}(\text{RGDP}/\text{RGDP}(-1))$ ,  $O = 100 * (\text{Export} + \text{Import})/\text{GDP}$ ,  $D = 100 * \text{Import Duties}/\text{Import}$ ,  $T = 100 * \text{Corporate Tax}/\text{Total Revenue}$ ,  $S = 100 * \text{Government Spending}/\text{GDP}$ ,  $C = 100 * \text{Capital Spending}/\text{Total Spending}$ .

To provide consistent estimates on the country-specific effect, we include four qualitative variables in the form dummy variables. The number of dummy variables is one less than the number of countries. The dummy variables included are for Egypt ( $D_1 = 1$  and 0 otherwise); Jordan ( $D_2 = 1$  and 0 otherwise); Morocco ( $D_3 = 1$  and 0 otherwise); Oman ( $D_4 = 1$  and 0 otherwise). Consequently, regression models (3) can be rewritten as:

$$Y_{it} = \beta_0 + \beta_1 Y_{it}(-1) + \beta_2 G_{it} + \beta_3 O_{it} + \beta_4 D_{it} + \beta_5 T_{it} + \beta_6 S_{it} + \beta_7 C_{it} + \beta_8 D_1 + \beta_9 D_2 + \beta_{10} D_3 + \beta_{11} D_4 + e_{it} \quad (4)$$

Table 1. The estimates of equation 4 using instrumental variable.

Variable	Coefficient	S. Error	t-Statistic	Probability
C	-2.794	5.308	0.526	0.603
$\tilde{Y}_{t-1}$	0.966	0.373	2.588	0.015
$G_{it}$	-0.094	0.117	1.815	0.081
$O_{it}$	0.009	0.079	0.208	0.837
$D_{it}$	0.049	0.052	0.620	0.541
$T_{it}$	0.296	0.041	2.128	0.043
$S_{it}$	-0.014	0.118	0.121	0.905
$C_{it}$	0.037	0.139	0.316	0.755
$D_1$	-2.030	1.958	1.036	0.309
$D_2$	-0.374	1.758	0.213	0.833
$D_3$	-1.014	1.851	0.548	0.588
$D_4$	-3.462	2.994	1.156	0.258
R-Squared			0.690	
Adjusted R- Squared			0.564	
S. E. of Regression			1.110	
F-Statistic			5.465	
N			39	

Table 2. The variance inflation factors based on auxiliary regression.

Auxiliary Variable	Regressors	R <sup>2</sup>	VIF <sub>j</sub>
$\tilde{Y}_{t-1}$	C, $G_{it}$ , $O_{it}$ , $D_{it}$ , $T_{it}$ , $S_{it}$ , $C_{it}$	0.304	1.438
$G_{it}$	C, $\tilde{Y}_{t-1}$ , $O_{it}$ , $D_{it}$ , $T_{it}$ , $S_{it}$ , $C_{it}$	0.069	1.074
$O_{it}$	C, $\tilde{Y}_{t-1}$ , $G_{it}$ , $D_{it}$ , $T_{it}$ , $S_{it}$ , $C_{it}$	0.637	2.755
$D_{it}$	C, $\tilde{Y}_{t-1}$ , $G_{it}$ , $O_{it}$ , $T_{it}$ , $S_{it}$ , $C_{it}$	0.777	4.484
$T_{it}$	C, $\tilde{Y}_{t-1}$ , $G_{it}$ , $O_{it}$ , $D_{it}$ , $S_{it}$ , $C_{it}$	0.718	3.546
$S_{it}$	C, $\tilde{Y}_{t-1}$ , $G_{it}$ , $O_{it}$ , $D_{it}$ , $T_{it}$ , $C_{it}$	0.335	1.504
$C_{it}$	C, $\tilde{Y}_{t-1}$ , $G_{it}$ , $O_{it}$ , $D_{it}$ , $T_{it}$ , $S_{it}$	0.536	3.241

Due to the sample size, the assumption made in the dummy variable method is that it is only the intercept that changes for each country but not the slope coefficients.

#### The Data

Data on gross domestic product (99b), export (90c), import (98c), direct investment in the reporting economy (78bed), gross domestic product deflator (1995 = 1)

(99bip) are obtained from the IMF International Financial Statistics Yearbook (2002). Direct investment in the reporting economy represents the flows of foreign direct investment into the reporting economy. Direct investment includes equity capital, reinvested earnings, other capital, and financial derivatives associated with various inter company transactions between affiliated enterprises. Excluded are flows of direct investment capital into the

reporting economy for exceptional financing, such as debt-for-equity swaps (IMF, 2002).

Whereas total expenditure (C.II), capital expenditure (C.IV), tax revenue (IV), corporate profit tax (1.2), import duties (6.1), and total revenue (A.II) are taken from the IMF, Government Financial Statistics Yearbook (2002). To construct the panel data in this study, we make several alterations to the original data. As we have mentioned above, the countries in the sample are chosen on data availability basis. These countries are Egypt (1990 -1997), Jordan (1990 -1998), Morocco (1990-1999), Oman (1990 -2000), and Tunisia (1990 -2000).

#### 4. The Empirical Findings

In recent years and especially in the last decade, increasing attention has been given to the cointegration technique developed by Johansen (1988), and Johansen and Juselius (1990). The importance of this technique arises from the fact that much of 'classical' econometric theory has been based on the assumption that the observed data come from a stationary process (Hendry and Juselius, 2000). Assuming stationarity when that is false can induce serious statistical distortion. The distortion here implies that most of the statistics calculated from the regression involving the non-stationary time-series data do not follow the standard distributions. Thus, the significance of the test is overstated and a spurious regression result is obtained (Chang, 2002).

In this paper, the stationarity properties of the data and the order of integration of the data are empirically investigated using the Augmented Dickey-Fuller (ADF) test. According to this test, the stationarity can be examined by testing the presence of unit roots in time series-data. The test for a stationarity is the t-statistic  $\theta$  in the regression model

$$\Delta Y_t = \delta_0 + \delta_1 t + \theta Y_{t-1} + \sum_{i=1}^n \phi_i \Delta Y_{t-i} + \eta_t \quad (5)$$

Where  $\Delta$  is the first-difference operator,  $Y_t$  is the series under consideration,  $\eta_t$  is a stationary random error,  $t$  is the time trend,  $\delta_0$ ,  $\delta_1$ ,  $\theta$ , and  $\phi_i$  are parameters to be estimated. The hypothesis of non-stationarity is rejected when  $\theta$  is significantly negative. In this study, the Akaike (1969) Information Criterion (AIC) is used to determine the appropriate lag length  $n$  that will be enough to ensure the stationarity of the error term  $\eta_t$ . The AIC is defined as:

$$AIC = T \ln (ESS/T) + 2k \quad (6)$$

Where  $T$  is the sample size,  $ESS$  is the sum of squared

error of the regression in equation 5, and  $k$  is the number of parameters,  $k = n + 3$ . The appropriate lag length selected by estimating equation 5 over a selected grid of values of  $n = 0, 1, 2$  and finding that value of  $n$  at which AIC attains its minimum.

As shown in appendix A, the ADF test is carried out by running a regression of the first difference of the series against the series lagged once, lagged difference terms, and optionally, an intercept and a time trend. In this study, the hypothesis of nonstationarity is rejected if the ADF statistic is smaller (in absolute value) than the reported critical value at 10% significance level. The results of ADF tests reveal empirical evidence rejecting the hypothesis of nonstationarity for all data series except for government spending-GDP ratio,  $S_{it}$ , in the case of Jordan and Oman.

In linear regression models involving lagged dependent variables as in equation 4, the assumption of stochastic regressors that are contemporaneously uncorrelated with the error term is hard to justify. Under these circumstances, the least squares estimator is biased and inconsistent. Gujarati (1988) has suggested an efficient estimator for this model which is asymptotically equivalent to maximum likelihood. The instrumental variable for the lagged dependent variable value is obtained as the lagged value of the prediction of  $Y_{it}$  from a regression on current and lagged explanatory variables in equation 3.

Table (1) reports the estimates of equation 4 using the instrumental variable shown above. The results presented in this table indicate that the regression model estimated explains 69% of the total variation in the dependent variable. The F-statistic indicates that the sets of explanatory variables in the regression models are statistically significant at the 1% level. The individual t-statistic confirms only the significance of the coefficients on the lag dependent variable and the corporate tax-total revenue ( $T_{it}$ ) at 5% level of significance. An important thing to notice is that the coefficients on  $T_{it}$  are positive, but not negative as was expected (Eng and Lin, 1996).

A special attention should be given to the interpretation of the results reported in table (1). First, the insignificance of most coefficients of the most explanatory variables could be attributed to a high degree of multicollinearity, which tends to cause the following problems. First, the standard errors of the regression coefficients will be very large, resulting in small associated t-statistics. Second, the sign of regression

Table 3. The estimates of equation 4 after dropping  $C_{it}$ ,  $D_{it}$ ,  $O_{it}$ , and  $S_{it}$ .

Variable	Coefficient	S. Error	t-Statistic	Probability
C	-0.643	1.737	0.371	0.713
$\tilde{Y}_{i,t-1}$	0.891	0.276	3.223	0.003
$G_{it}$	-0.086	0.0043	2.011	0.053
$T_{it}$	0.299	0.117	2.567	0.015
$D_1$	-2.460	1.123	2.190	0.036
$D_2$	-0.517	0.910	0.568	0.574
$D_3$	-1.305	0.717	1.820	0.079
$D_4$	-4.526	1.737	1.2.606	0.014
R-Squared			0.684	
Adjusted R- Squared			0.613	
S. E. of Regression			1.045	
F-Statistic			9,594	
N			39	

coefficients may be the opposite of what the theory would suggest. Third, deleting one of the explanatory variables will cause large changes in the coefficient estimates corresponding to the other variables in a model based on the remaining data.

In this study, we use the Variance Inflation Factor (VIF) approach for the detection of multicollinearity. This test is carried out by regressing each  $X_i$  on the remaining  $X$  variables and compute the corresponding  $R^2$ , which we designate as  $R_j^2$ ; each one of these regressions is called an auxiliary regression (Gujarati, 1988). For  $j = 1, 2, \dots, k$  the quantity  $VIF_j = 1/(1 - R_j^2)$ . It has been suggested in the literature that any  $VIF_j$  greater than 10 indicates multicollinearity. Table (2) reports the  $VIF_j$  for each  $X_i$  on the remaining  $X$  variables. The  $VIF_j$  provides overwhelming evidence rejecting the existence of multicollinearity.

Finally, a parsimonious specification of equation 4 is reported in Table (3) by dropping the right-hand-side variables sequentially with its absolute t-value is less than one (Tang, 2003). Deleting the explanatory variables  $C_{it}$ ,  $D_{it}$ ,  $O_{it}$ , and  $S_{it}$ , from the equation did not cause large changes in the coefficient estimates corresponding to the other variables in a model based on the remaining data. This finding is consistent with the VIF which provides no support for the existence of multicollinearity.

## 5. Conclusions

This paper examines the efficiency of fiscal policy in attracting FDI across five Arab countries (Egypt, Jordan, Morocco, Oman, and Tunisia) during the period 1990's. The Augmented Dickey-Fuller test is carried out to test for the stationarity of the data series used throughout the study. At the macroeconomic level, the empirical finding presented above confirms the inefficiency of the traditional fiscal policy (import duties, corporate taxation, government spending, and capital expenditures) in affecting FDI. An efficient estimator (instrumental variable) for the lagged dependent variable is constructed as a function of current and lagged explanatory variables. The results presented above confirm a positive association between the current level of FDI and its value in the previous period. The multicollinearity problem is also examined by employing the Variance Inflation Factor (VIF). The results find no supports for the existence of Multicollinearity among regressors.

In light of the above results, it could be argued that the regression models estimated have only been partially successful in identifying the set of explanatory variables that determine FDI activities. It is quite hard, if not impossible, to construct a large econometric model in which all relevant information is incorporated. The difficulty arises from two facts. First, the lack of microeconomic (firm-specific) data on the factors seem

consistent with the theory of international business. existing capabilities, other times they enter wanting to  
 Second, firms have heterogeneous motives for investing learn new capabilities.  
 in foreign markets. Sometimes firms enter to exploit

**Appendix A. The Augmented Dickey-Fuller tests for unit root in the data series**

Variable	Model and Lag length*	AIC(n)	ADF	1% Critical ADF	5% Critical ADF	10% Critical ADF
<b>Egypt</b>						
$Y_{it}$	T0	-1.49	-3.64 <sup>c</sup>	-6.13	-4.35	-3.63
$C_{it}$	CI	3.27	-3.23 <sup>c</sup>	-5.25	-3.55	-2.93
$D_{it}$	I2	-3.59	-7.16 <sup>a</sup>	-5.80	-3.74	-3.03
$G_{it}$	I0	1.11	-3.35 <sup>c</sup>	-4.89	-3.42	-2.86
$O_{it}$	T0	0.98	-7.38 <sup>a</sup>	-6.13	-4.35	-3.63
$S_{it}$	T1	-0.97	-11.17 <sup>a</sup>	-6.67	-4.58	-3.74
$T_{it}$	I1	0.60	-3.81 <sup>b</sup>	-5.25	-3.55	-2.93
<b>Jordan</b>						
$Y_{it}$	I1	1.15	-2.38 <sup>c</sup>	-4.46	-3.27	-2.78
$C_{it}$	I0	0.24	-9.19 <sup>a</sup>	-4.46	-3.27	-2.78
$D_{it}$	I1	1.44	-3.56 <sup>b</sup>	-4.46	-3.27	-3.27
$G_{it}$	I1	3.47	-2.96 <sup>b</sup>	-4.46	-3.27	-2.78
$O_{it}$	I0	5.30	-8.20 <sup>a</sup>	-4.46	-3.27	-2.78
$S_{it}$	I1	2.14	-2.66	-4.46	-3.27	-2.78
$T_{it}$	I0	0.60	-3.63 <sup>b</sup>	-4.46	-3.27	-2.78
<b>Morocco</b>						
$Y_{it}$	I0	0.52	-4.34 <sup>a</sup>	-4.33	-3.22	-2.76
$C_{it}$	T0	1.32	-5.88 <sup>a</sup>	-5.27	-3.99	-3.45
$D_{it}$	I0	1.22	-4.74 <sup>a</sup>	-4.33	-4.33	-3.22
$G_{it}$	I0	3.21	-7.51 <sup>a</sup>	-4.33	-3.22	-2.76
$O_{it}$	I0	3.11	-12.43 <sup>a</sup>	-4.33	-3.22	-2.76
$S_{it}$	I2	0.87	-5.09 <sup>a</sup>	-4.33	-3.22	-2.76
$T_{it}$	T2	0.98	-3.54 <sup>c</sup>	-5.27	-3.99	-3.45
<b>Oman</b>						
$Y_{it}$	I0	-0.50	-5.12 <sup>a</sup>	-4.22	-3.18	-2.73
$C_{it}$	I0	2.00	-4.31 <sup>a</sup>	-4.22	-3.18	-2.73
$D_{it}$	I0	-1.26	-26.81 <sup>a</sup>	-4.22	-3.18	-2.73
$G_{it}$	I0	2.17	-3.25 <sup>b</sup>	-4.22	-3.18	-2.73
$O_{it}$	I0	2.73	-5.23 <sup>a</sup>	-4.22	-3.18	-2.73
$S_{it}$	T0	1.70	-2.20	-5.12	-3.93	-3.41
$T_{it}$	I0	2.00	-6.12 <sup>a</sup>	-4.22	-3.18	-2.73
<b>Tunisia</b>						
$Y_{it}$	I2	-1.14	-3.27 <sup>b</sup>	-4.22	-3.18	-2.73
$C_{it}$	I0	0.65	-7.08 <sup>a</sup>	-4.22	-3.18	-2.73
$D_{it}$	T0	1.65	-6.16 <sup>a</sup>	-5.12	-3.93	-3.41
$G_{it}$	I0	1.56	-3.80 <sup>b</sup>	-4.22	-3.18	-2.73
$O_{it}$	I0	2.58	-3.36 <sup>b</sup>	-4.22	-3.18	-2.73
$S_{it}$	I0	-1.02	-10.89 <sup>a</sup>	-5.12	-3.93	-3.41
$T_{it}$	I0	-0.18	-20.44 <sup>a</sup>	-4.22	-3.18	-2.73

(a) (b) (c) denote significance at the 1%, 5%, and 10% level, respectively.



## NOTES

- (1) The Madrid Invitation, inviting Syria, Lebanon, Jordan, the Palestinians, and Israel to an opening conference on October 30, 1991.
- (2) More examples can be found in Economist, 11/10/2001, Vol. 361(8247), special section.
- (3) MNCs refers to Multinational Corporations, whereas R & D refers to Research and Development.
- (4) The Spanish Institute for Foreign Trade organizes fairs showing industrial and technology products in various countries named Expotecnia with a view to increasing exports and direct investment abroad by Spanish companies.
- (5) The sample includes transnational corporations (TNCs) from industrial countries and of small firms from newly industrializing economies (NIEs) which have FDI in China.

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## عدم فاعلية السياسات المالية في استقطاب الاستثمار الأجنبي المباشر في بعض الدول العربية

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### ملخص

قامت الدراسة باختبار مدى فاعلية السياسات المالية في بعض الدول العربية (مصر، الأردن، المغرب، عُمان، تونس) في استقطاب الاستثمار الأجنبي المباشر خلال فترة التسعينيات. تم اختبار العلاقات من خلال بناء نموذج رياضي افترض فيه اعتماد الاستثمار الأجنبي المباشر على عدد من المتغيرات التي تعكس البيئة الاقتصادية (مستوى الاستثمار الأجنبي المباشر في الفترة السابقة، معدل النمو الحقيقي في الناتج المحلي الإجمالي، مستوى الانفتاح الاقتصادي) بالإضافة الى مجموعة من المتغيرات التي تعكس السياسة المالية في الاقتصاد (رسوم الواردات، الضرائب على أرباح الشركات المساهمة، الإنفاق الرأسمالي، الإنفاق الحكومي). أظهرت النتائج عدم فاعلية السياسات المالية في استقطاب الاستثمار الأجنبي المباشر خلال فترة الدراسة. هذا، وقد أظهرت النماذج المختلفة التي تم تقديرها تقارباً كبيراً في النتائج. إن النتائج التي تم التوصل إليها تظهر مدى ضرورة مراجعة الدول المعنية للسياسات المالية المتخذة بهدف حفز المستثمرين الأجانب للاستثمار في هذه الدول.

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