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Manufactured Exports and FDI in the MED-11 Countries: Recent Evolution, Determinants and Prospects

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Contents

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Abstract

This paper investigates the evolution and determinants of manufactured exports and FDI in MED-11 countries over the period 1985-2009 as well as the prospects of their evolution under different scenarios pertaining to the evolution of the determinants. The econometric analysis confirmed the role of exchange rate depreciation, the openness of the economy and the quality of institution and infrastructure in fostering manufactured exports and FDI inflows in the Region. The prospects' assessment suggested that a scenario of deeper integration with the EU entails superior performance regarding manufactured exports and FDI than status quo or less integration with the EU but greater regional integration.

1. Introduction[1]

For a long time a majority of MED-11 countries has been weakly integrated in the world economy. In the early 1980s, the Region's ratio of manufactured exports to GDP was the lowest (2.68%) compared to all other regions except Latin America & Caribbean (2.50%).[2] Early researches have identified restrictive trade and exchange rate policies among the reasons for the low integration of developing countries in the world economy. For instance, Sachs and Warner (1995) found that more liberalized economies tend to adjust more rapidly from primary-intensive to manufactures intensive exports. Sekkat and Varoudakis (2002) focused specifically on some MED-11 countries and investigated whether trade policy reforms have increased the share of manufactured exports in GDP. Their results showed that trade policy reforms did. A similar conclusion was reached by Achy and Sekkat (2003) regarding the impact of exchange rate policy in the Region. However, international evidence suggests that such reforms might not be sufficient and companion policies would be needed to further strengthen the investment climate. These include the provision of adequate infrastructure (Wheeler and Mody, 1992) and good quality of economic and political institutions (Schneider and Frey, 1985; Henisz, 2000a, b). Méon and Sekkat (2004) and Sekkat and Véganzonès (2007) confirmed the importance of these factors for the Region.

Initiated in the mid-1980s and accelerated during the 1990s, major changes in economic strategy were adopted in many MED-11 countries. Their aim was to put the economies on a path of higher efficiency and, hence, foster growth and development. Moving from an 'import substitution' (IS) strategy, these countries gradually lowered trade barriers, privatized many firms and reformed the foreign-exchange market. Other reforms aimed at improving the business climate were also implemented.

Recent figures show a significant improvement in term of integration in the world economy for many MED-11 countries. The Region is now doing better than many others. In terms, of manufactured exports, it ranks third (15% of GDP) after Euro area (26%) and East Asia & Pacific (30%) and before Europe & Central Asia (12%), Sub-Saharan Africa (10%), South Asia (9%) and Latin America & Caribbean (11%). It also shows the most important increase in the share of total manufactured exports to GDP (around 5 percentage points) similar to East Asia & Pacific's. There are, however, notable differences between countries. Algeria is

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[1] The author is grateful to Luc Dewulf for very useful comments on a previous version of this paper.
[2] In terms of FDI, the picture is less clear due to the high volatility of such flows as compared to manufactured exports.

far behind all countries; manufactured exports as a share of GDP is less than 1% while Jordan, Israel and Tunisia are leading (more than 25%). These are also the countries showing the highest progress over the period (between 6 and 13 percentage points). The evolution in Algeria and Egypt is mediocre (See Appendix C).

This paper investigates the link between the evolution of the Region's integration in the world economy and the reforms implemented (or not). It focuses on manufactured exports and FDI. Drawing on the literature, the paper seeks to disentangle the contribution in terms of trade policy, exchange rate policy, governance's quality and infrastructure availability. The analysis is conducted on a panel of 17 countries[3] over the period 1985-2009.

The rest of the paper is organized in 3 sections. Section 2 focuses on manufactured exports and Section 3 deals with FDI. Each of them offers first an estimation of the impacts of the determinants discussed above on the variable of interest and second an assessment of the evolution of these variables of interest under different scenarios pertaining to the evolution of the determinants. Section 4 concludes.

2. Manufactured exports

Specification

Our basic specification is based on Sekkat and Varoudakis (2000). Assuming that the exporter is small with respect to the market for manufactures, profit maximization leads to the following specification of exports of manufactures:

$$\text{Log}(X_{it} / GDP_{it}) = \alpha_{0i} + \alpha_{0t} + \alpha_1 * \text{Log}(Demand_{it}) + \alpha_2 * \text{Log}(REER_{it}) + \mu_{it} \qquad (1)$$

where
X_{it} / GDP_{it} is the ratio of manufactured exports to gross domestic product for year t and country i;
α_{0i} is country i's fixed effect (i.e. Dummy);
α_{0t} is year t's fixed effect (i.e. Dummy);

$Demand_{it}$ is demand for manufactures
$REER_{it}$ is country i's real effective exchange rate for year t, where an increase in $REER_{it}$ stands for an appreciation of the exporter's currency;
μ_{it} is the error term

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[3] Algeria, Cyprus, Egypt, France, Greece, Israel, Italy, Jordan, Lebanon, Libya, Malta, Morocco,   Portugal, Spain, Syria, Tunisia and Turkey.

We scaled down exports by GDP to correct for the differences in countries' sizes. *Demand$_{it}$* is defined as the European Union manufactured value added over its GDP. For a given country, *REER$_{it}$* is defined such as:

$$Log\left(REER\right)=\sum_{j=1}^{j=10}\left[w_j * Log\left(e_j * \left(CPI\Big/CPI_j\right)\right)\right]$$

(2)

where:

CPI   is the Consumer Price Index of the country;

CPI$_j$ is the Consumer Price Index of the country's partner j;

e$_j$ is the nominal bilateral exchange rate of the country as regard partner j;

w$_j$ is the weight of the j-th partner in the bilateral trade of the country. The weighting pattern refers to the 10 largest trade partners excluding oil exporting countries

These explanatory variables are standard in the literature, and all have a well-defined expected impact on manufactured exports. The coefficient of the real exchange rate should be negative because an increase in *REER$_{it}$* means an appreciation of the exporter's currency. We expect a positive coefficient for *Demand$_{it}$*. These two variables as well as the dependent are constructed using the World Development Indicators.

As explained in the introduction, the paper seeks to disentangle the impacts of trade policy, exchange rate policy, governance's quality and infrastructure availability on manufactured exports. There are, however, numerous indicators that can proxy each of these dimensions (See Appendix A). Some of them have to be disregarded because they consist of only one observation, or too few, per country (e.g. the World Bank's indicator "Doing Business"). Using them would reduce dramatically the degree of freedom and, the quality of the inference. This still leaves us with more than one indicator to proxy a given dimension. Introducing all of them into the same specification raises multicolinearity issues which affect the significance of the coefficient and make it difficult to decide on which variable has the best explanatory power. Moreover, since the purpose of the study is to assess the impact of different scenarios of reforms, the specification should be as parsimonious as possible (Ledolter and Abraham, 1981).

To select among the explanatory variables, our empirical strategy consists in starting with a specification which explains the variable of interest in terms of the above basic determinants, country fixed effects and time fixed effects. Such a basic specification is, actually, the one leading to the best quality of the fit (as measured by the Adjusted R^2). Then, we re-estimate the basic specification without the fixed effects but adding an indicator for each of the above mentioned dimensions. The preferred regression is the one with the combination of indicators that leads to the closest quality of fit to the one with fixed effects. Estimation is conducted on a panel of 17 countries over the period 1985-2009. In the regression without

fixed effects, a dummy taking the value 1 if the country is from the South-Med and zero otherwise is introduced.

This empirical strategy leads to the selection of the following additional explanatory variables. To gauge of the impact of infrastructure, the ratio of the number of road kilometer to the surface of the country was retained. As for the degree of openness, we use the indicator published by Economic Freedom Network (Gwartney et al., 2008) called "Freedom to Trade Internationally". It is available annually since 2000 and each 5 years since 1970 and covers around 140 countries. Finally, for the quality of governance we consider the indexes developed by Kaufmann et al. (1999a, 1999b). The authors classified dimensions of governance into six independent clusters and aggregated them into six indexes (government effectiveness, regulatory burden, rule of law, control of graft, voice and accountability, lack of political violence). We use the simple average of the six indicators to assess the impact of governance. These additional indicators are defined in a way that their coefficients should be positive.

Results

Table 1 presents the estimation results of 5 specifications of Equation 1. The first specification includes only the basic determinants and the country and time dummies. Specifications 2 to 4 are the same as the first but exclude the dummies and include each of the additional determinants separately. Specification 5 includes all explanatory variables but the dummies. Unsurprisingly, Specification 1 has a very high quality of the fit (Adjusted R^2 equals 0.93). Only the estimated coefficient of exchange rate is significant with the expected sign. None of the other specifications has a better quality of the fit than the first one but such quality increases as long as additional explanatory variables are included. This leads to Specification 5 which has the highest quality of the fit (Adjusted R^2 equals 0.64) after Specification 1. However, the former is preferred over the latter because of its better economic meaning. It will be used for simulation.

All estimated coefficients of Specification 5 are significant with the expected sign. They imply that increase in demand for manufactures and exchange rate depreciation fosters manufactured exports as do a higher openness of the economy and a better quality of institution or infrastructure.

Table 1. Determinants of manufactured exports

Variable	Specification 1 (Fixed effects)	Specification 2 (OLS)	Specification 3 (OLS)	Specification 4 (OLS)	Specification 5 (OLS)
Constant		2.132 **2.251**	-4.181 **-4.867**	-2.177 **-2.806**	-1.103 **-1.308**
REER	-0.517 **-4.043**	-0.975 **-2.139**	-0.726 **-2.613**	-1.254 **-3.627**	-1.047 **-3.773**
Demand	-2.102 **-0.566**	1.778 **3.316**	-0.245 **-0.508**	0.171 **0.379**	0.770 **1.787**
Openness		3.204 **11.473**			1.554 **4.488**
Governance quality			0.271 **16.598**		0.107 **4.067**
Infrastructure				0.842 **14.844**	0.563 **8.686**
Dummy: South-Med		0.209 **1.496**	1.433 **9.726**	1.725 **11.331**	2.087 **11.854**
Number of observation	278	278	278	258	258
Adjusted R^2	0.93	0.36	0.52	0.47	0.64

Note: The dependent variable is the ratio of manufactured exports to GDP. Specification 1 includes country and time dummies. All variables are in log except Governance quality and Dummies. Standard-Errors are heteroskedastic-consistent. T-statistics are in bold.

Taking into account the estimated coefficients of Specification 5, we investigate the impacts of possible evolutions of exchange rate, openness, governance quality and infrastructure on the ratio of manufactured exports to GDP. We consider four scenarios:

- Reference scenario (i.e. Continuation of present trends): Future changes in the explanatory variables are assumed to be the same as between 2005-2009.

- EU integration scenario (e.g. Further integration with the EU): Future changes in the explanatory variables are assumed to be the same as in the best performing country in MED-11 during the period 2005-2009

- Regional integration scenario (i.e. Less integration with the EU but greater regional integration): Future changes in the explanatory variables are assumed to equal half the changes in the EU integration scenario

- Pessimistic scenario: Future changes in the explanatory variables are assumed to be the same as in the worst performing country in MED-11 during the period 2005-2009

Table 2 presents the results of the four scenarios for eight "south" MED-11 countries. It contains two panels. The first panel gives, for each country, in addition to the observed ratio of manufactured exports to GDP (On average during the period 2005-2009), the expected

ratios under each scenario. The second panel gives the change, with respect to the observed average. Under the reference scenario (i.e. Continuation of present trends), the ratio of manufactured exports to GDP remains almost unchanged in all countries. This implies that for the ratio to increase in the future, countries must do more efforts than in the past. They need to combine further depreciation of their real effective exchange rate (To improve the price competitiveness of their exports), higher openness of their economy and better quality of institutions and infrastructure. The improvement in the price competitiveness of exports (Through real effective exchange rate depreciation) could be achieved via depreciation of the nominal exchange rate, reduction in production costs, higher productivity or a combination of all. The increase in openness should consider both tariff and non-tariff barriers to trade. Under the assumption that sensible improvements are achieved in these respects, the second scenario (Further integration with the EU) suggests an increase in the ratio of manufactured exports to GDP in all countries. The increase in Algeria is, however, very modest. For this country, the reason lies in its still low manufacturing basis (the ratio of value added of manufactures to GDP is 9% in Algeria, 23% in Jordan and 28% in Turkey on average over the period 2005-2009) which prevent it form fully benefiting from the above mentioned improvements. The increase is the highest (above 7 percentage points) in Jordan, Israel and Tunisia. Under the third scenario (Less integration with the EU but greater regional integration), the increases are unsurprisingly less important than under the second scenario but remain economically significant in Jordan, Israel and Tunisia (around 4 percentage points). Finally, the "Pessimistic" scenario shows a negligible deterioration in Algeria and Egypt and an economically significant deterioration in Jordan, Israel and Tunisia (around 5 percentage points). Interestingly, the deterioration is higher than the improvement expected under the third (Less integration with the EU but greater regional integration) or the first scenario (i.e. Continuation of present trends). Hence, not only the gains from the above mentioned "sensible" improvements is high but the losses from a deterioration are substantial supporting the crucial necessity of vigilance with respect to reforms.

Table 2: Observed and predicted ratio of manufactured exports to GDP across scenarios

Country	Observed (2005-09)	Reference	EU integration	Regional integration	Pessimistic
		Level (Percentages)			
Algeria	0.57	0.56	0.74	0.64	0.44
Egypt	4.02	4.01	5.24	4.58	3.15
Israel	26.33	26.25	34.36	29.99	20.63
Jordan	25.69	25.61	33.52	29.26	20.12
Morocco	12.08	12.04	15.76	13.75	9.46
Syria	7.42	7.39	9.68	8.45	5.81
Tunisia	30.09	30.00	39.27	34.27	23.57
Turkey	13.54	13.49	17.66	15.42	10.60
		Change (Percentage points)			
Algeria		0.00	0.17	0.08	-0.12
Egypt		-0.01	1.23	0.56	-0.87
Israel		-0.08	8.03	3.66	-5.71
Jordan		-0.08	7.83	3.57	-5.57
Morocco		-0.04	3.68	1.68	-2.62
Syria		-0.02	2.26	1.03	-1.61
Tunisia		-0.09	9.17	4.18	-6.52
Turkey		-0.04	4.13	1.88	-2.93

3. Foreign Direct Investment

Specification

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 the ratio of FDI over GDP to per capita GDP and the growth rate of GDP (UNCTAD, 1998):

$$\text{Log}(FDI_{it} / GDP_{it}) = \beta_{0i} + \beta_{0t} + \beta_1 * \text{Log}(GDP\ per\ capita_{it}) + \beta_2 * \text{Log}(GDP\ Growth_{it}) + \eta_{it} \qquad (3)$$

where

FDI_{it} / GDP_{it} is the ratio of foreign direst investment inflows to gross domestic product for year t and country i;

β_{0i} is country i's fixed effect;

β_{0t} is year t's fixed effect;

η_{it} is the error term

We scaled down FDI by GDP to correct for the differences in countries' sizes. The explanatory variables are in real term. The relationship between per capita GDP and FDI is debated in the empirical literature (Asiedu, 2002). For instance, Schneider and Frey (1985) consider GDP per capita as reflecting the wealth of the resident of the host country and then demand effectiveness. The expected sign of the corresponding coefficient is, therefore, positive. In contrast, Edwards (1990) interprets GDP per capita as the inverse of the return on capital in the host country. Then the coefficient of GDP per capita in the FDI equation is expected to be negative. A higher real per capita income is supposed to decrease the attractiveness of FDI. The growth rate of GDP reflects the dynamism of the host country and its future market size. An increase in this growth rate characterizes a dynamic economy which may be more attractive for investors. The four variables are from the World Development Indicators published by the World Bank.

To select additional explanatory variables, we adopt the same empirical strategy as in the case of manufactured exports. Equation (3) is first estimated as it stands. Then, it is re-estimated without the fixed effects but adding an indicator for each dimension of the "investment climate". The same indicators as for manufactured exports are added (Road infrastructure, "Freedom to Trade Internationally" and the quality of governance).[4] Based on the findings by Borensztein et al. (1998) and Sekkat and Véganzonès (2007), a human capital indicator was also introduced. We use the percentage of population over 25 years having reached secondary from Barro and Lee (2010). The expected sign of the coefficients of these explanatory variables is positive except for openness. The coefficients of "Freedom to Trade Internationally" might be positive or negative following the motive of FDI. If the motive is only to serve the host market, the coefficient should be negative because higher openness means more competition on this market. This is known as the "tariff jumping" motivation for FDI. If the objective is to serve external markets, the coefficients should be positive since higher openness means easier access to foreign markets. Moreover, higher openness can allow cheaper access to imported inputs.

Given the high volatility of FDI over time, we kept time dummies in order to get precise estimate of the coefficients of interest. The F-test confirms the necessity of having time dummies in the regressions.

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[4] One may argue that telephone lines by 1000 inhabitants would be a better proxy to explain FDI. The problem with this variable to explain FDI is that one can not separate causes from effects. Many of the countries under consideration have privatized their telecom sector and sold some parts of it to foreigners. In this case, the causal interpretation is not clear. It might be that FDI caused the number of phones (especially mobiles) to increase and not that phones attract FDI. Moreover, when one looks at the data, the series of phone number is exploding: increasing from 0 to several millions over ten years or so. Even divided by population, the variable poses problem during estimation.

Results

Table 3 presents the estimation results of 6 specifications of Equation 3. The first specification includes only the basic determinants and the country and time dummies. Specifications 2 to 5 include the basic determinants, time dummies and each of the additional determinants separately. Specification 6 includes the basic determinants, time dummies and all the additional determinants. Specification 1 has a high quality of the fit (Adjusted R^2 equals 0.78). None of the other specifications has a better quality of the fit than the first one but such quality increases as long as additional explanatory variables are included. This leads to Specification 6 which has the highest quality of the fit (Adjusted R^2 equals 0.62) after Specification 1. However, the former is preferred over the latter because of its better economic meaning. It will be used for simulation.

All estimated coefficients of Specification 6 are significant with the expected sign except the ones pertaining to GDP growth and education which are non significant. The coefficient of the per capita GDP is significant and negative which is coherent with Edwards (1990)'s interpretation i.e. GDP per capita as the inverse of the return on capital in the host country. The other estimated coefficients imply that a higher openness of the economy, the availability of infrastructure and a better quality of institution increase the attractiveness of countries with respect to FDI.

Table 3. Determinants of FDI inflows

Variable	Specification 1 (Fixed effects)	Specification 2 (OLS)	Specification 3 (OLS)	Specification 4 (OLS)	Specification 5 (OLS)	Specification 6 (OLS)
Constant		3.7473 **6.6947**	4.5141 **7.3705**	-0.0188 **-0.0300**	-0.3905 **-0.5870**	5.1407 **9.8103**
GDP per capita	-0.5826 **-1.3377**	-0.4411 **-9.2963**	-0.7278 **-10.4115**	-0.1573 **-2.1537**	-0.0947 **-1.4421**	-0.7601 **-11.7014**
GDP Growth	-0.7490 **-0.4915**	1.7972 **1.1463**	-0.2233 **-0.1218**	3.0604 **1.3957**	0.3732 **0.1938**	-0.3311 **-0.2310**
Openness		2.4191 **6.2936**				1.2093 **2.3748**
Governance quality			0.2618 **13.2800**			0.2288 **9.6348**
Education				0.6565 **1.5498**		-0.3356 **-0.9850**
Infrastructure					0.1323 **9.6467**	0.1432 **6.8797**
Dummy: South-Med		-0.3536 **-3.7938**	0.5784 **4.5883**	-0.3563 **-3.9456**	-0.1442 **-1.3187**	0.6933 **6.5068**
Number of observation	368	348	368	348	345	325
Adjusted R^2	0.78	0.32	0.49	0.17	0.25	0.62

Note: The dependent variable is the ratio of FDI to GDP. Specification 1 includes country and time dummies. All other specifications contain time dummies. All variables are in log except GDP growth, Education, Governance quality, infrastructure and Dummy. Standard-Errors are heteroskedastic-consistent. T-statistics are in bold.

Taking into account the estimated coefficients of Specification 6, we investigate the impacts of possible evolutions of the significant explanatory variables (i.e. GDP per capita, Openness, Governance quality and Infrastructure) on the ratio of FDI to GDP. We consider the same four scenarios as for manufactured exports.

Table 4 presents the results of the four scenarios for eight "south" MED-11 countries. It contains two panels. The first panel gives, for each country, in addition to the observed ratio of FDI to GDP (On average during the period 2005-2009), the expected ratios under each scenario. The second panel gives the change, with respect to the observed average. Under the reference scenario (i.e. Continuation of present trends), the ratio of FDI to GDP decreases slightly in all countries but Jordan where the decrease is relatively important. Under the scenario of further integration with the EU, the ratio of FDI to GDP increases in all countries. The increase is the highest (Almost 2 percentage points) in Jordan and non negligible in Egypt, Israel and Tunisia (Above 0.6 percentage points). Under the third

scenario (Less integration with the EU but greater regional integration), the increases are unsurprisingly less important than under the second scenario but remain non negligible in Egypt, Israel and Tunisia (Above 0.3 percentage points) and economically significant in Jordan (around 0.9 percentage points). Finally, the "Pessimistic" scenario shows a sensible decrease in all countries. The most affected economy is Jordan (-4 percentage points) followed by Egypt, Israel and Tunisia (around -1.5 percentage points). The deteriorations are much higher than the improvements expected under the most optimistic scenario (Further integration with the EU). It is also much higher than under the first scenario (i.e. Continuation of present trends). Hence, like for manufactured exports the results support the crucial necessity of vigilance with respect to reforms.

Note that the increases (or decreases) in the ratio of FDI to GDP don't account for possible increase (or decreases) of the total volume of world FDI. On the one hand, there is a mechanical effect by which, every things being equal, higher world FDI translates into higher ratio of FDI inflows to GDP in each country. On the other hand, Méon and Sekkat (2010) suggested that higher world FDI might benefit countries with weaker business climate more than those with stronger one. Hence, our simulated increase (or decreases) might be under estimated.

Table 4. Observed and predicted ratios of FDI to GDP across scenarios

Country	Observed (2005-09)	Reference	EU integration	Regional integration	Pessimistic
Level (Percentages)					
Algeria	1.37	1.28	1.51	1.44	1.03
Egypt	7.44	6.98	8.25	7.83	5.62
Israel	6.13	5.75	6.8	6.45	4.63
Jordan	16.71	15.68	18.53	17.6	12.63
Morocco	3.25	3.05	3.6	3.42	2.45
Syria	2.52	2.36	2.79	2.65	1.9
Tunisia	6.21	5.82	6.88	6.54	4.69
Turkey	2.94	2.76	3.26	3.1	2.22
Change (Percentage points)					
Algeria		-0.09	0.14	0.07	-0.34
Egypt		-0.46	0.81	0.39	-1.82
Israel		-0.38	0.67	0.32	-1.5
Jordan		-1.03	1.82	0.89	-4.08
Morocco		-0.2	0.35	0.17	-0.8
Syria		-0.16	0.27	0.13	-0.62
Tunisia		-0.39	0.67	0.33	-1.52
Turkey		-0.18	0.32	0.16	-0.72

4. Conclusion

This paper investigates the link between the evolution of the Region's integration in the world economy and the reforms implemented (or not). It focuses on manufactured exports and FDI and examines the evolution, determinants and prospects of such integration. Drawing on the literature, the paper disentangles the contribution in terms of trade policy, exchange rate policy, governance's quality and infrastructure availability. For each variable of interest, the analysis offers, first, an estimation of the impacts of the determinants and, second, an assessment of their evolution under different scenarios pertaining to the evolution of the determinants.

The econometric analysis confirmed the role of exchange rate depreciation, the openness of the economy and the quality of institution or infrastructure in fostering manufactured exports. Similarly, estimation showed that a higher openness of the economy, the availability of infrastructure and a better quality of institution increase the attractiveness of countries with respect to FDI.

Taking into account the estimated coefficients, we investigated the impacts of possible evolutions of the relevant explanatory variables on the ratio of manufactured exports to GDP and on the one of FDI to GDP. We considered four scenarios: Continuation of present trends, deeper integration with the EU, less integration with the EU but greater regional integration and a pessimistic scenario where the future changes in the explanatory variables are assumed to be the same as in the worst performing country in MED-11 during the period 2005-2009.

Unsurprisingly, the highest positive impacts on the ratio of manufactured exports to GDP and on the one of FDI to GDP are associated with the second scenario (Further integration with the EU). The ratio of manufactured exports to GDP increases in all countries but Algeria. The increase is the highest (above 7 percentage points) in Jordan, Israel and Tunisia. The ratio of FDI to GDP increases in all countries. The increase is the highest (Almost 2 percentage points) in Jordan and non negligible in Egypt, Israel and Tunisia (Above 0.6 percentage points). Moreover, both ratios deteriorate under the first scenario (Continuation of present trends) and, of course, under the pessimistic scenario. The deteriorations are much higher than the improvements expected under the scenarios of further integration with the EU. Hence, not only the gains from improvements in exchange rate management, openness of the economy and quality of institution and infrastructure are high but the losses from deteriorations are substantial. This implies that vigilance with respect to the progress in reforms is crucial.

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Appendix

Appendix A: List of variables considered

Name

Direct investment in reporting economy (FDI Inward mil USD)

Direct investment abroad (FDI Outward mil USD)
Direct investment in reporting economy (FDI Inward mil USD)

Direct investment abroad (FDI Outward mil USD)

Tariff rate, applied, simple mean, all products (%)

Tariff rate, most favored nation, simple mean, all products (%)

Tariff rate, applied, weighted mean, all products (%)

Tariff rate, most favored nation, weighted mean, all products (%)

International trade tax revenues (% of trade sector)

Mean tariff rate

Taxes in international trade

Size of the trade sector relative to expected

Black-market exchange rates

Capital Controls

International capital market controls

Freedom to trade internationally

Total number of BITs in force

Total number of BITs signed

Power Distance Index (PDI)

Individualism (IDV)
Masculinity (MAS)

Uncertainty Avoidance Index (UAI)

Long-Term Orientation (LTO)
Indulgence versus Restraint

Ease of Doing Business Rank
Starting a Business - Rank

Starting a Business - Procedures (number)

Starting a Business - Time (days)
Starting a Business - Cost (% of income per capita)

Starting a Business - Min. capital (% of income per capita)

Dealing with Construction Permits - Rank
Dealing with Construction Permits - Procedures (number)

Dealing with Construction Permits - Time (days)

Dealing with Construction Permits - Cost (% of income per capita)

Registering Property - Rank

Registering Property - Procedures (number)

Registering Property - Time (days)

Name

Registering Property - Cost (% of property value)

Getting Credit - Rank

Getting Credit - Strength of legal rights index (0-10)

Getting Credit - Depth of credit information index (0-6)

Getting Credit - Public registry coverage (% of adults)

Getting Credit - Private bureau coverage (% of adults)

Protecting Investors - Rank

Protecting Investors - Extent of disclosure index (0-10)

Protecting Investors - Extent of director liability index (0-10)

Protecting Investors - Ease of shareholder suits index (0-10)

Protecting Investors - Strength of investor protection index (0-10)

Paying Taxes - Rank

Paying Taxes - Payments (number per year)

Paying Taxes - Time (hours per year)

Paying Taxes - Profit tax (%)

Paying Taxes - Labor tax and contributions (%)

Paying Taxes - Other taxes (%)

Paying Taxes - Total tax rate (% profit)

Trading Across Borders - Rank

Trading Across Borders - Documents to export (number)

Trading Across Borders - Time to export (days)

Trading Across Borders - Cost to export (US$ per container)

Trading Across Borders - Documents to import (number)

Trading Across Borders - Time to import (days)

Trading Across Borders - Cost to import (US$ per container)

Enforcing Contracts - Rank

Enforcing Contracts - Procedures (number)

Enforcing Contracts - Time (days)

Enforcing Contracts - Cost (% of claim)

Closing a Business - Rank

Closing a Business - Recovery rate (cents on the dollar)

Closing a Business - Time (years)

Closing a Business - Cost (% of estate)

Employing workers - Difficulty of hiring index (0-100)

Employing workers - Rigidity of hours index (0-100)

Employing workers - Difficulty of redundancy index (0-100)

Employing workers - Rigidity of employment index (0-100)

Employing workers - Nonwage labor cost (% of salary)

Employing workers - Redundancy cost (weeks of salary)

Percentage of No schooling

Percentage of pop+25 having reached 2ary

Percentage of pop +25 having completed 2ary

Name

Percentage of pop +25 having reached 3ary

Percentage of pop +25 having completed 3ary

Average years of total schooling in pop 25+

Average years of primary schooling in pop 25+

Average years of 2ary schooling in pop 25+

Average years of 3ary schooling in pop 25+

Voice and accountability

Political stability and absence of violence

Government Effectiveness

Regulatory Quality

Rule of Law

Control of corruption

Wages per employee
(in US$)

Telephone lines

Telephone lines (per 100 people)

Mobile and fixed-line telephone subscribers

Mobile and fixed-line telephone subscribers per employee

Mobile and fixed-line telephone subscribers (per 100 people)

Population covered by mobile cellular network (%)

Mobile cellular subscriptions

Mobile cellular subscriptions (per 100 people)

Fixed broadband Internet subscribers

Logistics performance index: Efficiency of customs clearance
process (1=low to 5=high)

Logistics performance index: Quality of trade and transport-related
infrastructure (1=low to 5=high)

Logistics performance index: Ease

Logistics performance index: Quality

Logistics performance index: Frequency

Logistics performance index: Trac consignments

Logistics performance index: Overall

GDP (current mil USD)

GDP (constant 2000 mil USD)

GDP growth (annual %)

GDP per capita (current USD)

GDP per capita (constant 2000 USD)

GDP per capita growth (annual %)

Appendix B: Descriptive statistics

Table B.1: Manufactured exports equation

Variables	Mean	Std Dev	Minimum	Maximum	Median
Manufactured exports/GDP	-2.323	1.078	-6.390	-0.488	-2.017
REER	0.033	0.219	-0.437	1.464	0.000
Demand	-1.577	0.166	-1.820	-1.332	-1.626
Openness	-0.460	0.203	-1.152	-0.190	-0.422
Governance quality	2.942	4.413	-8.051	7.877	4.435
Infrastructure	-0.654	1.400	-3.294	2.270	-0.191

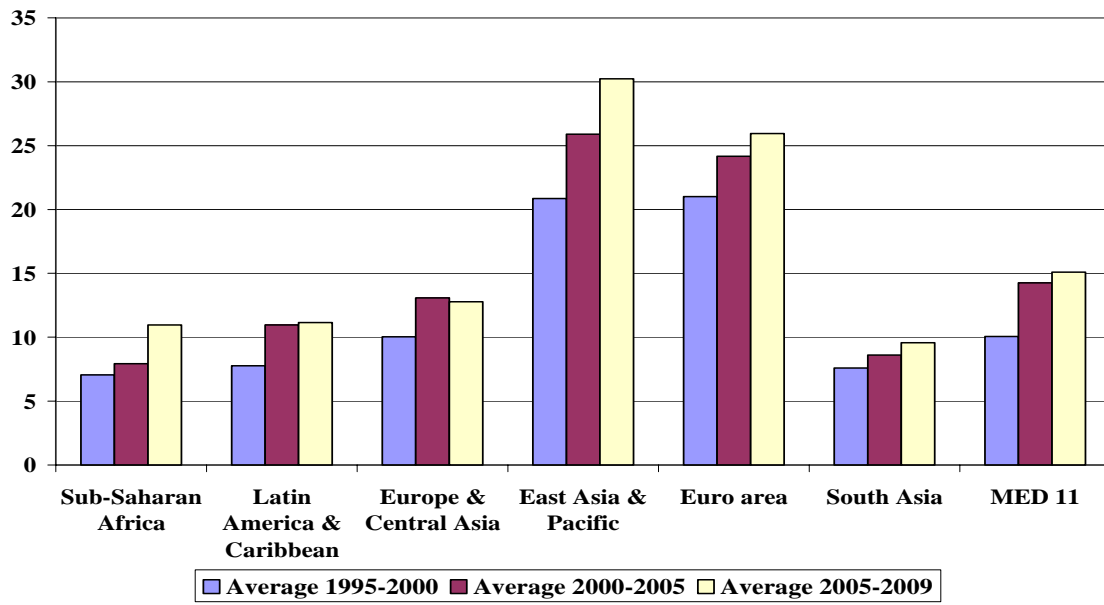Note: All variables are in log except Governance quality.

Table B.2: FDI equation

Variables	Mean	Std Dev	Minimum	Maximum	Median
FDI/GDP	-1.868	1.005	-6.997	0.118	-1.845
GDP per capita	8.597	1.058	6.787	10.071	9.053
GDP Growth	0.035	0.033	-0.135	0.187	0.036
Openness	-0.465	0.212	-1.152	-0.190	-0.411
Governance quality	2.194	4.503	-8.051	7.877	3.691
Education	0.289	0.134	0.046	0.587	0.292
Infrastructure	1.098	1.606	0.037	9.675	0.716

Note: All variables are in log except GDP growth, Education, Governance quality and infrastructure.

Appendix C: Manufactured exports in the MED-11

Figure C.1

Manufactured exports (% of GDP)

■ Average 1995-2000 ■ Average 2000-2005 ☐ Average 2005-2009

Figure C.2

Manufactured Exports (% of GDP)

■ Average 1995-2000 ■ Average 2000-2005 ☐ Average 2005-2009