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***Full integration versus
partial trade liberalization:
Comparing the economic performance of the New
Members States (NMS) and
Mediterranean Partner Countries (MPCs)***

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Introduction and summary

In the project we compared the depth of trade liberalization and integration with the EU between the MPCs (Mediterranean Partner Countries)¹ and NMS (New Member States)². We analyzed trade implications of preferential arrangements between MPCs and EU in the framework of EUROMED and between Central and East European countries in the frameworks of BAFTA (Baltic Free Trade Area) and CEFTA (Central European Free Trade Area) and so called Europe Agreements. This analysis demonstrated that Europe Agreements and two sub-regional agreements BAFTA and CEFTA have been efficient in promoting bilateral trade among European states. We find that the Europe Agreements as well as BAFTA and CEFTA significantly contributed to increase in both bilateral exports and imports of the CEE countries. In contrast to the NMS the impact of New Association Agreements concluded with the MPCs had been much more limited. We find that while the new Agreements increased significantly imports of the MPCs countries from the EU, they had no impact on their exports to the EU which can be attributed to the asymmetry in trade liberalization between the EU and the MPCs. In particular, liberalization of the EU imports from the MPCs was a gradual process that extended over the last thirty years and there was not much to liberalize in the 1990s while liberalization of the MPCs imports from the EU took place much faster and its scope was much bigger.

Differences in growth rates may stem from differences in trading arrangements of these two regions with the EU-15 and institutional factors within these regions. Despite the similar openness ratio, MPCs maintained (with the exception of Israel) considerably higher levels of trade protection in comparison to NMS. Higher levels of protection, causing production and consumption distortions, can slow down the rate of growth of economies.

¹ The group MPCs consists of: Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, the Palestinian Authority, Syria, Tunisia and Turkey

² The group of NMS consists of: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia and Cyprus and Malta. In our project we analyze only first eight countries.

The degree of trade openness, given the widespread pressures of lobbies in a majority of countries, depends mainly on the governments' commitment to act in the interest of all consumers and on the scope external pressure for liberalization. NMS, by concluding Europe Agreements, were forced to remove tariffs and non-tariff barriers in its trade with the EU. The scope of trade liberalization foreseen in preferential agreements between MPC and the EU is much lower. Thus, without strong external pressure MPC could and did maintain considerably higher levels of trade protection, in comparison to NMS.

In order to verify this hypothesis an attempt has been made to apply the Grossman-Helpman (G-H) model, explaining the interplay between sectoral interest groups and a government to the Polish economy as a representative of NMS. On the other hand Israel was treated as an example of MPC, being able to liberalize significantly its trade policy. We demonstrated that rent seeking of the lobbies had some, although very limited, impact on the scope of non-preferential trade liberalization in Poland. On the other hand, the performance of the G-H model for Israel has not been satisfactory, because of lack of the relevant statistical data allowing to strictly follow the original modeling framework. The model estimated in a simplified way did not show a significant impact of lobbies on tariff schedules of Israel, however, this conclusion is not robust due to poor statistical properties of the model. The verification of the model for other MPCs economies appeared to be even more difficult, due to non existence of relevant sectoral data.

Other important conditions, which are crucial for reaching real trade liberalization and convergence to the advanced EU members, are the business climate and the level of corruption. Our results suggest that corruption increases with a higher number of procedures involved in license granting, enforcing contracts and starting new businesses. According to our study, the recent accession to the EU required from the NMS to put in place certain measures that enforce transparency and competition. The gradual law approximation to the EU *acquis communautaire* boosts performance of the poorer NMS through the facilitation of trade and general economic activity. In this study we compared corruption levels in the MPCs and NMS, that acceded the EU in 2004. The results suggest that if the MPCs reduced their level of business regulation to

that of the NMS, we would observe a predicted fall in corruption (with the exception of Israel and Jordan). This fall is quite large, especially for Syria and Algeria. This in turn, could lead to real further trade liberalization, reducing production and consumption distortions in MPCs.

1. Assessing the impact of Europe Agreements and EUROMED FTAs

1.1. Europe Agreements, BAFTA and CEFTA

In the 1990s the European Union played an active role in sponsoring trade liberalization in Central and Eastern European (CEEC) countries. The CEECs during the communist rule remained isolated from the rest of the world for almost fifty years. The so-called Europe Agreements concluded with the CEE countries were intended to support their economic reforms and prepare them for eventual membership in the EU. These efforts culminated in two subsequent waves of enlargement to the East that took place in 2004 and 2007.

The ultimate goal of joining the EU has been the major factor shaping foreign trade policies in the CEE countries throughout the 1990s. The EU concluded bilateral association agreements with the majority of the CEECs in the first half of the 1990s. These agreements aimed at establishing a hub-and-spoke free trade area covering industrial products and granting some preferences to agricultural goods between the CEECs and the EU over a maximum period of ten years.

In contrast to a typical FTA the Europe Agreements implied asymmetric trade liberalization between the EU and the CEECs with more rapid liberalization by the EU. The trade components of the Europe Agreements overshadowed and extended the Generalized System of Preference status granted by the EU to most CEECs in the early 1990s. By January 1, 1997 the EU eliminated practically all tariffs on imports from the CEECs with the exception of agricultural and “sensitive” products.

Although trade parts of the Europe Agreements with some CEE countries entered into force on different dates ranging from 1992 (former Czechoslovakia, Hungary and

Poland) to 1997 (Slovenia), schedules of elimination of tariffs and non-tariff barriers on industrial products had one important element in common. They all had to be completed by the target date of January 1, 2002. The liberalization of trade in agricultural goods between the EU and the CEECs, however, did not take place until the two waves of enlargement of the EU to the East in 2004 and 2007. Only since then the CEECs have been able to participate fully in the EU Single Market.

In addition to trade liberalization with the West the CEE countries liberalized trade among themselves creating a matrix of bilateral and sub regional free trade agreements. The most important of these was the Central European Free Trade Area established by former Czechoslovakia, Hungary and Poland. The CEFTA agreement was signed on December 21, 1992 and entered into force on March 1, 1993. The initial CEFTA agreements eliminated tariffs on approximately 40 percent of industrial goods. Trade in industrial goods and some agricultural products was further liberalized through a series of additional protocols, mostly signed in 1994 and 1995.

By 1996 almost 80 percent of CEFTA trade in industrial products were free of tariffs. By 1999 tariffs were abolished on almost all industrial products except a minor list of “sensitive” products. The CEFTA membership gradually expanded overtime to include Slovenia (1996), Romania (1997), Bulgaria (1991) and Croatia (2003). The CEFTA agreement was supposed to include also three newly independent Baltic States: Estonia, Latvia and Lithuania that emerged from the former Soviet Union after its collapse in 1991. However, these three countries - in about the same time when CEFTA was built - created their own Baltic Free Trade Area (BAFTA).

In contrast to CEFTA, BAFTA did not enlarge its membership but the coverage of the agreement was increased over time at a faster pace than in the CEFTA member states. In particular, by January 1, 1997 BAFTA included not only industrial but also agricultural and fish products. In this way BAFTA became the first free trade area in the region that provided for completely liberalized trade in these politically sensitive areas.

Consequently, the significant differences in the pace and the coverage of trade liberalization between the BAFTA and the CEFTA member states did not allow creating a single free trade area that would embrace all the CEE countries before their

accession to the EU. Instead, a number of bilateral trade agreements between the BAFTA and the CEFTA countries was signed that complemented sub-regional trade liberalization in Central and Eastern Europe.

We study here the trade effects of the Europe Agreements for bilateral imports and exports of the CEE countries using the generalized gravity equation that can be derived from neoclassical and new trade theory models that assume incomplete specialization in production. In our study we control for the effects of other both plurilateral and bilateral free trade agreements concluded by the CEE countries among themselves as well as with countries located outside the region. We analyze the impact of the association agreements for both exports and imports separately.

The generalized estimating equation that encompasses particular estimating equations is derived from various theoretical models. Apart of standard variables, related to distance, GDP, capital/labour ratio or regional trade agreements we also used dummies indicating whether countries share a common border, a common language and/or a same colonizer.

We find that the Europe Agreements as well as BAFTA and CEFTA significantly contributed to increase in both bilateral exports and imports of the CEEC countries. Moreover, the estimates obtained for BAFTA were of higher magnitude than those obtained for CEFTA. This is in line with our initial expectations given the fact that the BAFTA agreement included not only industrial but also agricultural and marine products.

1.2. EUROMED, bilateral and Agadir Agreements

Unlike trade liberalization with the Central and East European countries trade liberalization with the MPCs was a gradual process that lasted over three decades and is in fact not completed at the time of writing. Moreover, unlike the CEE countries that radically liberalized their trade with the EU in the 1990s, exports from the MPCs have enjoyed preferential treatment by the EU for many years. The first generation Euro-Mediterranean Association Agreements with the selected MPCs that provided free access for their manufactures exports to the EU countries were concluded already at the end of 1960s and early 1970's.

In 1972 the European Commission launched the Global Mediterranean Policy (GMP) that was aimed at providing trade concessions to most MPCs. This policy resulted in a series of so-called Cooperation Agreements that were concluded between 1973 and 1980 with most MPCs. In particular, these agreements extended earlier preferences for MPCs exports of agricultural products both in terms of coverage and the margins of preference. However, at the same time these exports were subject to protectionist measures imposed by the European Common Agricultural Policy (CAP).

Following the southern enlargement the EU concluded a new series of agreements with the MPCs called Adaptation Agreements. As a result of this renovated policy by the end of 1993 all tariffs on exports from the MPCs were eliminated, however, non-tariff barriers (NTBs) to trade related to the CAP were still in force.

The final round of trade liberalization between the EU and the MENA countries was initiated in 1995 at the Barcelona conference that set the ambitious goal of creating the Euro-Mediterranean Free Trade Area (EUROMED) by the target date of 2010. The creation of the EUROMED is to be achieved by means of the new generation of the Euro-Mediterranean Association Agreements between the EU and the MPCs accompanied by free trade agreements between the MPCs themselves. In contrast to earlier, mostly unilateral, trade liberalization (with exception of Cyprus, Turkey, Malta and Israel), the new Association Agreements provide for the implementation of bilateral free trade between the EU and the MPCs. The EUROMED foresees free trade in manufactured goods and progressive liberalization of trade in agricultural products.

In addition to “vertical” bilateral trade liberalization with the EU the MPCs are committed to implement “horizontal” trade liberalization among themselves. However, compared to the Euro-Mediterranean Association Agreements, trade liberalization between particular MPCs is still far less advanced. Given the lack of significant progress in liberalizing trade at the regional and sub-regional levels in the MPCs region some countries located both in the Middle East and North Africa decided to liberalize their trade on bilateral basis. This led to the establishment of the grid of bilateral trade agreements by the end of the 1990s that prepared the ground for the Agadir Declaration signed in 2001 by the representatives of four MPCs: Egypt, Jordan, Morocco and Tunisia. The Agadir Declaration included a commitment to the establishment of a free

trade area (FTA). The Agadir Agreement was signed in 2004 and was initially foreseen to take effect in 2005. However, it encountered delays in entering into force and eventually came into force only in 2007. At this stage it is too early to evaluate its effectiveness. Nevertheless, it was possible to evaluate empirically at least the effectiveness of those bilateral trade agreements concluded among the MPCs in the late 1990s that later laid the foundations for the Agadir Agreement.

Similar to the case of the NMS we study here the trade effects of the new EU Association Agreements for bilateral imports and exports of the MPCs using the generalized gravity equation that can be derived from neoclassical and new trade theory models that assume incomplete specialization in production. In our study we control for the effects of other both plurilateral and bilateral free trade agreements concluded by the MPCs among themselves as well as with countries located outside the region. We analyze the impact of the association agreements for both exports and imports separately.

As in the case with CEE countries, we derive the generalized estimating equation based on various theoretical models. In addition to the standard variables, related to distance, GDP, capital/labour ratio or regional trade agreements we also used dummies indicating whether countries share a common border, a common language (Arabic or Turkish) and/or a same colonizer.

In all the cases our estimations demonstrate that the EU-Association Agreements significantly contributed to the increase in bilateral imports of the MPCs from EU members. The evidence obtained for bilateral trade agreements concluded in the late 1990s between the members of the Agadir group is, however, mixed. While the simple OLS estimates suggest that all bilateral agreements concluded between the Agadir group member states significantly increased their bilateral imports, this evidence is not robust when panel data estimation techniques are employed. In contrast to bilateral imports the new generation EU Association Agreements do not seem to contribute positively to the expansion of exports from the MPCs to the EU. This means that the EU countries will be the main beneficiaries of these agreements, at least in the short run, as the EU markets for industrial products have been open to the MPCs since the 1960s and the 1970s, while the markets for agricultural products still remain relatively closed.

We also find that not all the MPCs were able to benefit equally from the EU Association Agreements. In the case of bilateral imports we obtain positive and statistically significant coefficients for the Agreements only for Israel, Jordan, Morocco and Tunisia, and in the case of bilateral exports only for Tunisia. The results obtained for bilateral trade agreements concluded between the future members of the Agadir group were not significant.

2. Why trade liberalization is difficult and frequently delayed: testing Grossman-Helpman model

2.1. Testing Grossman-Helpman model for Poland

The degree of trade openness, given the widespread pressures of lobbies in a majority of countries, depends mainly on the governments' commitment to act in the interest of all consumers and on the scope of external pressure for liberalization. All NMS, by concluding Europe Agreements, and Central Free Trade Area (CEFTA), were committed to remove tariffs and non-tariff barriers in their trade with the EU.

Polish trade policy in 1990's, during the economic and political transition, was quite similar to that of other Central and East European (CEE) countries. Poland, at the beginning of 1990's had some degree of freedom in its tariff policy towards non-European countries. At that time Poland's tariffs were not subject to the discipline of the GATT and the government had freedom to manoeuvre in shaping its tariff structure. Poland had no legal constraint in the form of a "bound" tariff schedule, although it was a GATT member since 1967.

The preferential tariff liberalization started in 1991. In that year, Poland signed the Europe Agreement (EA) with the European Communities (EC). The commercial part of the EA came into force by 1992. The EC and Poland started FTA for non-agricultural products since March 1994 over a maximum period of ten years. The FTA was not applied to agricultural products. In the case of European Union's (EU) imports this

liberalization has taken five years and was completed by the end of 1997. The timetable of tariff liberalization of Polish imports was extended in time.

Poland signed a similar free trade agreement with EFTA countries. The agreement covered mainly trade in non-agricultural products. EFTA members eliminated most import duties in 1993. Poland gradually liberalized its tariffs and quantitative restrictions on EFTA imports by 1999 (except for steel, petroleum products, and automobiles).

Poland, along with the Czech Republic, Hungary and the Slovak Republic, established also CEFTA (Central European Free Trade Area) in 1992. Afterwards Slovenia 1996, Romania and Bulgaria joined the CEFTA. The CEFTA Agreement established a free-trade area by 2001. CEFTA covered all goods, except for a few agricultural products. Thus, by the end of 1990's almost all Polish duties on non-agricultural imports from European countries have been eliminated. The share of all these European countries exceeded 65% of Poland's total imports.

The non-preferential (MFN, conventional) liberalization of Poland's trade policy towards non-European countries started in 1995. The country took part in the GATT Uruguay Round as the only state having the formal status of a developed country without any "bound" customs duties. After submitting its initial offer on tariff concessions Poland had bilateral negotiations with several countries. Poland's main commitments on trade in goods in the Uruguay Round were to bind 94% of its duties and to reduce tariffs by 38% on industrial products and by 36% on agricultural goods over six years. The simple average bound MFN Polish tariff rate for non-agricultural products was reduced from 16.73 to 9.89 per cent.

The tariff structure was determined, almost from scratch, in the early 1990s by governmental decision. It seems that the interest groups probably did not have very strong influence on the process. The organizations of producers (chambers) were just being established. However, the trade unions were quite powerful. It is possible to show some anecdotal evidence that the tariff changes were influenced by lobbies' pressure. Afterwards the level of import duties was gradually reduced over the next years. The scope of reductions was quite impressive in the case of preferential duties.

In order to verify the possible impact of different lobbies we applied the Grossman-Helpman (G-H) “Protection for sale” model to analyze tariff policy. The governmental policy –in this model - is determined by elected politicians. They simultaneously consider the consumer welfare of the electorate and contributions of lobbies, representing various sectors of the economy. Thus, in the model, various lobbies in organized industries provide contributions to the government in return for influencing the tariff schedules.

Our empirical implementation (similar to that of Maggi and Goldberg for United States) is dealing with Polish trade policy in the late 1990s. We have used the instrumental variable approach to estimate the model, taking into account possible endogeneity of the regressors (import penetration). In the absence of direct measures of industry contributions, we have used similar variables to those used in literature, as a proxy for industry organization. The Herfindahl concentration index seems to be the best proxy for the industry organization. It means that more concentrated industries with fewer companies have better chances to coordinate their actions and are more effective in lobbying. The model was estimated for years 1996-1999.

Our results are broadly in line with the predictions of the Grossman-Helpman (G-H) model. Most of our regressions support the theory and we find support for the (minor) significance of lobbies in the formation of trade policy in Poland. The G-H model seems to work well in the case of MFN tariffs. The importance of the lobbies is, however, significantly lower than in the case of the United States. According to the model the Polish government attached very high weight to social welfare, paying almost no attention to pressures from lobbies. The model finds only very weak support using preferential data. This result seems plausible since in late 1990’s Poland had already no freedom in its preferential policy, due to tariff reductions, in line with provisions of the Europe Agreement.

Thus, we can conclude that the Polish government paid almost no attention to organized protectionist lobbies, and due to external pressure from the EU, EFTA and WTO liberalized its tariff policy very rapidly in the second half on 1990’s. It seems that a similar situation prevailed in other Central and East European, future NMS. All of them

signed Europe Agreements, EFTA and CEFTA agreements and reduced their conventional tariffs in line with Uruguay Round commitments.

2.2. Testing Grossman-Helpman model for Israel

Since 1991 Israel has moved slowly but steadily towards a very open trade regime. The average applied MFN tariff was only 8.9% in 2005. Some 46.4% of the tariff lines carry duties between zero (excluded) and 15% (included). MFN tariffs on agricultural products remain high, with an average tariff of 32.9%, and rates varying considerably among product groups. Israel has bound rates on just half of its tariff lines. The bound rates are often above the applied MFN rates, giving Israel the possibility to unilaterally raise its applied tariffs. However the significance of MFN tariff schedules is limited. The bulk of Israel's imports is conducted within the framework of free-trade agreements.

The oldest NTB in Israel is the kosher certificate requirement. Because of the power of the Rabbinat, any overseas exporter who aims to reach maximal market access and share must comply with kosher requirements. Another idiosyncratic NTB originates from its centralistic structure regarding imports. In many instances, only one firm is allowed to import a certain label.

Protectionism via the use of government procurement has plagued the Israeli economy since Independence in 1948, as public expenditure is unusually high for an OECD-type economy, with the Army and the Ministry of Defence playing a central role. While Israel has been for years party to the plurilateral Agreement on Government Procurement (GPA), it has always invoked developing-country status, allowing it to implement offset arrangements. Foreign governments, particularly the one of the US, have been complaining for years, about the lack of transparency in Israeli practices.

Invoking the status of developing country for applying Uruguay Round resolutions has not been limited to the domain of government procurement, but to other highly relevant issues in the case of Israel, such as TRIPS, where Israel was given until 2000 to change its law on intellectual property.

Since July 2003, Israel has lifted its general prohibition on imports from WTO Members that had no diplomatic relations with it or prohibited imports from Israel. However, a licensing requirement remains in place for some other countries that prohibit imports from Israel.

The agricultural sector is still highly protected, especially in comparison to industrial goods. The only exception to agricultural self-sufficiency is feed grains such as wheat and soybeans, where Israel is a net importer. MFN tariffs on agricultural products did actually rise more than 2.5 times from 1993 to 1999 with the adoption by the GATT's principle of *tariffication*. The huge tariffs protect all local producers, including those kibbutzim and Arab meat producers which are allowed to supply non-kosher meat. Because there are still tariff quotas on some product groups, there is some scope for lobbying the Ministry of Agriculture and Rural Development as well as the one of Industry, Trade, and Labour, which are the ones in charge of the administration of those quotas.

Regarding textiles and wearing apparel, Israel has accepted since at least a decade that the survival of its firms under Israeli ownership and management implies that they have to be "de-localized" to neighbouring countries such as Jordan and Egypt. The process has taken place in an orderly way and is now almost completed.

In our project we also tried to estimate the "Protection for sale" model for Israel. But, in this case we faced some serious problems resulting from limited availability of statistical data. The core estimation equation of the Grossman-Helpman model involves the inverse import penetration ratio as an explanatory variable that is clearly endogenous. The original modeling framework uses instrumental variables to overcome that problem. However, it was impossible to get a robust estimate of predicted import penetration ratios for Israel. The problems stemmed mainly from the lack of sectoral data on capital stock required to predict import penetration in a Heckscher-Ohlin, factor-intensity fashion. Thus, it was impossible to estimate the G-H model correctly using the original framework. Nevertheless, an attempt has been made to estimate the model neglecting the endogeneity problem. Estimates are in line with the theory only for the case of the export intensity ratio (i.e. share of exports in domestic production)

used as industry organization variable for both applied MFN tariffs and weighted average of applied duties (for preferential and non preferential imports).

Poor performance of the G-H model may result from the fact that the Israeli government paid relatively little attention to organized lobbies or that they were poorly organized. Our results suggest that only the export oriented industries in Israel, managed – to a very limited extent - to exert some influence on the government and receive some tariff protection in the framework of preferential agreements. This statement has to be treated with extreme caution, since these estimates are not robust and are subject to statistical problems. Moreover, this policy was probably not a real obstacle in Israeli trade liberalization, since export oriented industries are, almost by definition, not seriously threatened by import competition.

Perhaps, these results explain partially why Israeli governments managed to follow fairly liberal trade policies. Unfortunately, sectoral data, necessary to estimate G-H model, appeared to be unavailable for other more protectionist Mediterranean Partner countries.

3. Business environment: the causes and role of corruption in MPCs and NMS: ways for improvement

The shape of tariff policy can be influenced by lobbies and vested interests groups, as shown in the previous research. But the real access to a given domestic market by foreign and domestic suppliers depends on business environment as well. Bureaucratic delays, costs, and the number of procedures to carry out business activities can severely limit the access to a given market. Thus, the unfavourable business environment can acutely restrict real liberalization of the economy and lead to distortions in production and consumption.

The proliferation of unnecessary regulation can benefit narrow, but powerful groups inside the state administration with privileged access to legislature. With such actions, top bureaucratic officials may organize the business environment as to enrich

themselves. In such cases, even though the government aims to realize public wants, regulatory policies can be implemented in wasteful and incompetent ways, which results in the over-regulation of the businesses. Seeing this, lower-level officials may take advantage of this situation and may seek to delay bureaucratic decisions in order to extract bribes. Thus, they can use their public power to extract bribes from those who need the authorizations or permits. As a result, an excessive number of regulations may result in widespread corruption.

There is a growing statistical evidence that corruption slows down economic growth and foreign direct investment. Corruption in candidate countries had been one of the EU's major concerns time after time, when the European Commission began publishing its annual progress reports on candidates in 1997. The grounds of that anxiety were simple: - the European legal system works under the assumption that law will be implemented, controlled, and enforced by the public administration and judiciary of the member states. Corruption endangers the implementation and execution of rules or makes their adoption merely formal. An implication of the Accession Partnerships is that that the candidate countries must fight against corruption. Moreover, the EU-Commission has adopted a requirement of an anti-corruption framework for all candidates. What is more important, the EU was a major force behind de-regulation in the NMS. Therefore, the EU accession process has had a major impact on corruption in candidate states. This can be confirmed by comparing corruption scores of non-EU post communist countries and New Member States. In our opinion, the recent accession to the EU required from the NMS to put in place measures that enforce transparency and competition.

In MPCs, there has been a tendency for reforms and economic liberalization programs to lag. This underdevelopment of bureaucratic powers and regulation has created opportunities for rent seeking associated with corruption. The MPCs had no such external pressure as the NMS had, applied on them by the European Commission. Hence, the position of interest groups within the MPC still allows rent-seeking behaviour through artificial barriers to entry to internal markets and discourage competition.

The main goal of the project was to analyze the causes of corruption and ways of improvement. Several hypotheses were tested here. Some of them appear quite general, e.g. that (i) corruption is lower in higher economically developed countries and that (ii) stable democratic institutions and corruption are expected to be positively correlated. Two other hypotheses were more important for practical reasons for MPCs; i.e. that (iii) corruption is associated with the number of bureaucratic procedures and (iv) that it rises with bureaucratic delays.

The testing started with the two exogenous variables explaining corruption: the logarithm of GDP per capita and the level of democracy proxied by the political rights variable. This pair of control variables proved to have correct positive sign and be statistically significant. Hence, the first two hypotheses have been positively verified.

Then, we dealt with licenses variables. This topic tracks the procedures, time, and costs to build a warehouse, including obtaining necessary licenses and permits, completing required notifications and inspections, and obtaining utility connections. As expected, it came out in the investigation that longer bureaucratic delays and higher number of procedures were a significant factor in the prevalence of corruption.

On the other hand, official costs of dealing with licenses came out significant only in some of the specifications, with low levels of confidence. The positive signs in all specifications indicate that official costs of bureaucratic procedures do not play a major role in corruption, since businesses prefer predictable official payments to unpredictable informal ones so they substitute one by the other. This means that official incentive payments may be one way to achieve a less corrupt and speedier bureaucracy.

To accomplish a successful reduction in the level of corruption, liberalization and improvements in working of the bureaucracy will be required in most MPCs. Decreasing the number of procedures, streamlining of the bureaucracy and other ways to limit time spent waiting for its decisions may significantly reduce corruption, even if it occurs at a higher official cost of conducting administrative procedures. Given the long history of corruption in the region, the proposed regulatory measures would probably not be sufficient to eradicate it to the level of new members of the European

Union, at least not in the short term. No doubt, it may take years or even decades to bring corruption down.

The possible improvement in the level of corruption in MPCs has been analyzed as well. First, we compared the current level of each of the variables used in the regression for every MPCs country with an average level for the eight NMS from Central Europe.

Then we analyzed the difference between the average level for the eight NMS countries and the level for each MPCs country of each of the variables used in the regression. We have estimated the 'predicted improvement' in the level of corruption in MPCs by multiplying the differences in the level of regulation by the coefficients obtained in the regression (only significant variables were used).

The result is that if the MPCs reduced their level of business regulation to that of the NMS, we would observe a predicted fall in corruption. This fall is quite large, especially for Syria and Algeria. The improvement would move these countries almost to the level of corruption observed currently in Turkey and the improvement in the corruption level in Turkey would move it to the level of corruption observed in the Czech Republic.

However, Israel and Tunisia have a lower level of regulation than the 8 New Member States' average. As a result, a change in the level of regulation to the NMS 8 level would mean an effective increase in regulation. Therefore, this would theoretically increase corruption instead of decreasing it. This hypothetical result seems plausible too, though it is very important to remember, that post-communist countries suffer from legacies of the now obsolete system of central planning. By definition, central planning involved vast and substantial direct governmental intervention in economic decision-making. Therefore, these countries have a very high level of regulation even though liberalization is still undergoing.

This is not in any way connected to the bureaucratic rigidities often ridiculed by opponents of the European Union. In fact, the level of regulation and the time spent dealing with the bureaucracy is much lower in the EU-15 countries than in the 8 NMS by almost an order of significance. Furthermore, as discussed above, the European Commission was a major force behind deregulation in many areas of economic activity in the NMS.

Chapter 1: Assessing trade liberalization using gravity models

In this section we use the gravity model to assess the effect of trade liberalization in two regions: in Central and Eastern Europe and in the Mediterranean Partner countries.

Introduction

Preferential trade liberalization has become a major feature of the global trading system in the last fifty years. The inability to achieve far reaching multilateral trade liberalization under the auspices of the General Agreement on Tariffs and Trade (GATT) and later the World Trade Organization (WTO) has led to the proliferation of regional trade agreements (RTAs) in the world economy. Following the WTO convention the term regional trade agreement encompasses both reciprocal bilateral free trade areas (FTAs) or customs unions (CUs) as well as plurilateral (multicountry) agreements.³ During the 1990s the European Union (EU) was a major player in the RTA game and an active sponsor of bilateral association agreements with individual countries located both in the Central and Eastern Europe (CEE) as well as in the Mediterranean Partner Countries (MPC). However, despite some similarities important differences with respect to the pace and the scope of trade liberalization between these two groups of countries exist.

The first wave of regionalism was triggered by a group of Western European countries which, following the 1957 Treaty of Rome, established the customs union that later evolved into the European Union (EU) and created a network of preferential trade agreements with other partners.⁴ In the 1990s the European Union played also an active

³ In a free trade area all members eliminate barriers to trade in goods among themselves but each member retains the right to maintain different barriers on non-members, while a customs union goes beyond a FTA by establishing a common external tariff on all trade between members and non-members.

⁴ For many years the Mediterranean countries were the priority region for the EU. The first generation association agreements with selected Mediterranean countries were concluded already in the 1960s. In the 1970s the Global Mediterranean Policy (GMP) that resulted in a series of cooperation agreements provided non-discriminatory trade concessions to all countries in the region. Further trade liberalization took place after two waves of enlargement to the South in the 1980s that included Greece (1981) and later Portugal and Spain (1986). Following the Southern enlargement the so-called adaptation agreements were concluded with the remaining Mediterranean countries to reduce increased tariff discrimination between the Southern EU member and non-member countries. In 1995 the Barcelona conference set an ambitious

role in sponsoring trade liberalization in Central and Eastern European countries that during the communist rule remained isolated from the rest of the world for almost fifty years.

The so-called Europe Agreements concluded with the CEE countries were intended to support their economic reforms and prepare them for eventual membership in the EU. These efforts culminated in two subsequent waves of enlargement to the East that took place in 2004 and 2007. At about the same time when the Europe Agreements were signed the CEE countries started to liberalize trade also among themselves. Their efforts resulted in a matrix of sub-regional and bilateral agreements that were supposed to complement trade liberalization with Western Europe.

In contrast to relatively fast trade liberalization with the CEE countries trade liberalization with the MPCs was a gradual process that lasted over three decades. Moreover, unlike the CEE countries that radically liberalized their trade with the EU in the 1990s, exports from the MPCs have enjoyed preferential treatment by the EU for many years. The first generation Euro-Mediterranean Association Agreements with selected MPCs that provided free access for their manufactures exports to the EU countries were concluded already in the 1960s.⁵ In 1972 the European Commission launched the Global Mediterranean Policy (GMP) that was aimed at providing non-discriminatory trade concessions to all MPCs.⁶

This policy resulted in a series of so-called Cooperation Agreements that were concluded between 1973 and 1980 with all MPCs (Peridy, 2005). In particular, these agreements extended earlier preferences for MPC exports of agricultural products both in terms of coverage and the margins of preference. However, at the same time these exports were subject to protectionist measures imposed by the European Common

goal of creating the Euro-Mediterranean Free Trade Area (EUROMED) by 2010. As a result of this new generation association agreements were concluded with most Middle Eastern and North African countries and Cyprus and Malta joined the EU in 2004.

⁵ In addition to liberalization of manufactures goods imports from the associated countries some agricultural imports were granted reductions in the common external tariff.

⁶ Euro-Mediterranean trade liberalization within the framework of the GPM was unilateral except for Israel where reciprocity was required.

Agricultural Policy (CAP). Further liberalization of EU imports from the MPCs took place after the Southern enlargement in 1986 to include Spain and Portugal whose exports obtained unrestricted access to the EU markets.

Following this enlargement the EU concluded a new series of agreements with the MPCs called Adaptation Agreements that were aimed at reducing increased tariff discrimination between those countries that joined the EU and those that stayed outside. As a result of this renovated policy by the end of 1993 all tariffs on exports from the MPC's were eliminated, however, non-tariff barriers (NTBs) to trade related to the CAP were still in force. The final round of trade liberalization between the EU and the MENA countries was initiated in 1995 at the Barcelona conference that set the ambitious goal of creating the Euro-Mediterranean Free Trade Area (EUROMED) by the target date of 2010.

The creation of the EUROMED is to be achieved by means of the new generation of the Euro-Mediterranean Association Agreements between the EU and the MPCs accompanied by free trade agreements between the MPCs themselves. In contrast to earlier, mostly unilateral, trade liberalization the new Association Agreements provide for the implementation of bilateral free trade between the EU and the MENA countries. The EUROMED foresees free trade in manufactured goods and progressive liberalization of trade in agricultural products.⁷

In this paper we use the augmented gravity model to study, first, the trade effects of the EU-sponsored trade liberalization in the CEE countries and compare them with the effects of preferential trade liberalization among themselves. Second, we use the gravity model to study the trade effects of the new EU Association Agreements for bilateral imports and exports of the MPCs.

Two strands in the empirical literature employing the gravity models in the context of Central and Eastern European countries can be distinguished. The first strand that emerged in the early 1990s concentrated on estimating the trade potential of and CEE

⁷ However, the scope of trade liberalization in agricultural products is somewhat limited due to EU's refusal to remove NTBs on agricultural products.

countries and predicting the volume of their trade flows with the West.⁸ The second, less numerous, strand that emerged in the late 1990s and early 2000s focuses on evaluating the ex-post effectiveness of trade liberalization in Central and Eastern Europe. However, most studies that belong to the second genre take into account only the trade effects of the EU Association Agreements and neglect completely the intra-CEE agreements.

The notable two exceptions include studies by Adam et al. (2003) and De Benedictis et al. (2005). Adam et al. (2003) explore empirically the effectiveness of two sub-regional trade agreements: the Central European Free Trade Area (CEFTA) and the Baltic Free Trade Area (BAFTA). In their study they find that both agreements were effective in stimulating trade among the CEE countries, however, the BAFTA agreements turned out to be more effective than CEFTA. Moreover, the effects of the EU Association Agreements were smaller than either BAFTA or CEFTA. In general, the authors conclude that all the agreements were trade creators for their members.

In a more recent study De Benedictis et al. (2005) do not distinguish between BAFTA and CEFTA and use in their estimating equation only one common dummy variable for all regional trade agreements concluded among the CEE countries. Interestingly, they find that while sub-regional FTAs increased bilateral exports between the CEE countries the EU Association Agreements had no impact on their exports to the EU. They attempt to explain this puzzling result by the fact that starting from the end of the 1980s trade between the CEE countries and EU-12 was already intense because reduction of trade barriers had already taken place and there was not much left to liberalize in the 1990s.⁹

Our present study is related to the second strand in the literature.

While there exists substantial literature that deals with evaluating empirically the effects of trade liberalization between the new and the old EU member states relatively little attention has been devoted to studying the effects of the recent EU Association

⁸ The examples include. See Brenton and Manzocchi (2002) for the review of this literature.

⁹ They also argue that their result is in line with many contributions in the earlier literature that emphasized the erosion in the unrealized trade potential of the CEE countries with the EU already in the early 1990s.

Agreements concluded with the MPCs.¹⁰ Therefore, our study attempts to fill in a part of the existing gap in this important field of study.

Although the goal of our study may look similar to some of the previous studies three major differences can be identified. First, to study the effectiveness of particular trade agreements we use the augmented gravity equation that can be directly derived from the neoclassical as well as new trade theory models that assume incomplete specialization in production. Second, in addition to the gravity variables in our estimating equations we control also for the potential effects of various bilateral trade agreements concluded by the CEE countries / MPCs among themselves as well as with countries located outside the region. Third, in our study we present not only the averaged estimates of the effects of preferential trade liberalization in CEE / MPCs obtained for the whole group but also the estimates obtained for the particular countries in the region.

In contrast to previous studies we find that both the EU Association Agreements as well as various sub-regional and bilateral trade agreements were effective in promoting trade of the CEE countries. We also find that while the new EU Association Agreements increased significantly imports of the MPCs from the EU, they had no impact on their exports to the EU which can be attributed to the asymmetry in trade liberalization between the EU and the MENA countries. In particular, liberalization of the EU imports from the MENA countries was a gradual process that extended over the last thirty years and there was not much to liberalize in the 1990s while liberalization of the MPC imports from the EU took place much faster and its scope was much bigger. Moreover, we find that the estimated impact of the Association Agreements on bilateral trade of the MPCs differs greatly across countries.

The structure of this chapter is as follows. In the next section we present the analytical framework used for evaluating empirically the effects of preferential trade liberalization, followed by the definition of variables and data sources used in our

¹⁰ The notable exception is the empirical study by Peridy (2005) who finds that the preferential agreements with the EU positively influenced bilateral exports of the MPCs to the EU. According to him the gross trade creation is estimated to be about 20-27% of actual exports depending on model specification.

empirical study. Two sections each dedicated to a different region, describe, firstly, preferential trade liberalization (in the case of CEE countries focusing on the role of the EU Association Agreements and intra-CEE agreements in this process), and secondly, present and discuss the estimation results obtained for the whole CEE or MPC group as well as for separate countries in each region. Finally, the summary and conclusion for each section are presented.

The Analytical Framework

To study the impact of the free trade agreements on bilateral exports and imports of the CEE countries and given the perceived failure of intra-MPC trade agreements it is interesting to study whether MPCs do any better in the case of Euro-Mediterranean Association Agreements compared to their sub-regional and bilateral trade agreements. We use a gravity model of bilateral trade flows in its extended form that can be derived from neoclassical as well as new trade models that assume incomplete specialization in production. The gravity models have been widely used in empirical studies of economic integration processes to investigate the changes in the geographic trade pattern and the effects of FTAs and currency unions on trade flows. However, most previous studies are based on the gravity models in the simplified form that assumes complete specialization in production either at the country or the firm level and foresees no role for factor proportions. These simplistic models predict that trade between two countries depends only on their size and trade costs between them.

In our view such models cannot be regarded as fully satisfactory as the estimates of the effects of FTAs obtained on the basis of such models may be seriously biased due to the lack of controls for factor proportions that play a key role in the determination of trade flows in the incomplete specialization models especially when they are estimated for the middle- or low-income countries. Therefore, in contrast to such models, the generalized estimating equation that encompasses particular estimating equations derived from various theoretical models used in our empirical study can be expressed in its logarithmic form as follows:

$$\ln T_{ijt} = \sum_{k=1}^n \beta_k \text{RTA}_{ijt} + \alpha_1 \ln Y_{it} + \alpha_2 \ln Y_{jt} + \alpha_3 \ln K_{it}/L_{it} + \alpha_4 \ln K_{jt}/L_{jt} + \alpha_5 \ln \text{DISTANCE}_{ij} + \alpha_6 \text{CONTIGUITY}_{ij} + \alpha_7 \text{LANGUAGE}_{ij} + \alpha_8 \text{COLONY}_{ij} + \alpha_9 \text{COLONIZER}_{ij} + u_i + u_j + u_{ij} + v_t + \varepsilon_{ijt}. \quad (1)$$

where: T_{ijt} is the value of trade flows (exports and imports, respectively) between countries i and j in year t ; RTA_{ijt} is a dummy variable indicating whether countries i and j are both the members of a bilateral or a plurilateral regional preferential trading agreement in year t ; Y_{it} and Y_{jt} are the levels of GDP in countries i and j in year t , respectively; K_{it}/L_{it} and K_{jt}/L_{jt} are the capital per worker stocks in countries i and j in year t , respectively; DISTANCE_{ij} is the distance between countries i and j in year t , respectively; CONTIGUITY_{ij} is a dummy variable indicating whether countries i and j share a common border; LANGUAGE_{ij} is a dummy variables indicating whether at least 9% of the population in countries i and j speak a common language (for the MPCs two other dummy variables were used instead: ARABIC_{ij} and TURKISH_{ij} are two dummy variables indicating whether countries i and j share a common language); COLONY_{ij} is a dummy variable indicating whether countries i and j were in a colonial relationship; COLONIZER_{ij} is a dummy variable indicating whether countries i and j shared a common colonizer (after 1945 the CEE countries being in the Soviet Union's zone of influence); u_i and u_j are the individual fixed effects for countries i and j , respectively; u_{ij} is the country-pair specific effect; v_t is the time specific effect, and ε_{ijt} is the error term that satisfies the standard properties.

The preferential trading agreements once implemented should increase bilateral trade of both trading partners in the case of reciprocity, hence $\beta_i > 0$ for all effective agreements. All theoretical models predict that trade flows should increase with the economic size of both trading partners, hence $\alpha_1, \alpha_2 > 0$. However, the impact of the factor proportion variables cannot be *a priori* determined as it varies across various models of incomplete specialization in production and could be either positive, negative or none depending of the extent of product differentiation. Therefore, the signs of the estimated parameters on the factor proportion variables α_3, α_4 and their statistical significance have to be determined empirically.

We expect trade flows to be negatively related to distance that serves as a proxy for transportation costs which should be low when countries are located close to each other, hence $\alpha_5 < 0$. Common border and language indicator variables serve as proxy for transaction costs which should be lowered when trading partners share a common border and/or speak a common language, therefore $\alpha_6, \alpha_7 > 0$. The colonial ties serve as proxies for historical ties and should positively influence bilateral trade flows, hence $\alpha_8, \alpha_9 > 0$.

Preferential trade liberalization in Central and Eastern Europe: The EU-CEE versus intra-CEE free trade agreements

In this section we study the effects of three types of preferential trade liberalization in ten CEE countries that joined the EU in two subsequent waves of enlargement to the East in 2004 (the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia), and in 2007 (Bulgaria and Romania): trade liberalization with an already existing trade bloc such as the EU or EFTA, the creation of a new sub-regional free trade area such as BAFTA or CEFTA and finally bilateral trade agreements concluded by particular CEE countries among themselves as well as with other countries outside the region.

Trade liberalization with Western Europe

The ultimate goal of joining the EU has been the major factor shaping foreign trade policies in the CEE countries throughout the 1990s. The EU concluded bilateral association agreements (so-called the Europe Agreements) with the majority of the CEECs in the first half of the 1990s (see Table 1).

Table 1. The EU Association and EFTA Agreements
[years in force]

Country	EU	EFTA
Estonia	1995-2004	1996-2004
Latvia	1995-2004	1996-2004
Lithuania	1995-2004	1996-2004
Czech Republic	1992-2004	1992-2004
Slovakia	1992-2004	1992-2004
Hungary	1992-2004	1993-2004
Poland	1992-2004	1993-2004
Slovenia	1997-2004	1995-2004
Romania	1993-2007	1993-2007
Bulgaria	1993-2007	1993-2007

Source: European Commission (2007)

The Europe Agreements aimed at establishing a hub-and-spoke free trade area covering industrial products and granting some preferences to agricultural goods between the CEECs and the EU over a maximum period of ten years. In contrast to a typical FTA

the Europe Agreements implied asymmetric trade liberalization between the EU and the CEECs with more rapid liberalization by the EU. The trade components of the Europe Agreements overshadowed and extended the Generalized System of Preference status granted by the EU to most CEECs in the early 1990s.¹¹ By January 1, 1997 the EU eliminated practically all tariffs on imports from the CEECs with the exception of agricultural and “sensitive” products.

Although trade parts of the Europe Agreements with some CEE countries entered into force on different dates ranging from 1992 (former Czechoslovakia, Hungary and Poland) to 1997 (Slovenia), schedules of elimination of tariffs and non-tariff barriers on industrial products had one important element in common. They all had to be completed by the target date of January 1, 2002. The liberalization of trade in agricultural goods between the EU and the CEECs, however, did not take place until the two waves of enlargement of the EU to the East in 2004 and 2007. Only since then the CEECs have been able to participate fully in the EU Single Market.

In addition to trade liberalization with the EU the CEE countries liberalized in the early 1990s their trade also with other Western European countries that were the members of the European Free Trade Association (EFTA) – another main trade bloc in Europe, although much smaller and much less integrated than the EU. The bilateral free trade agreements between the CEECs and the EFTA member states were patterned on the trade parts of the Europe Agreements as far as the scope and timing of trade liberalization are concerned. These agreements covered mainly trade in industrial products as well as some marine and processed agricultural products.

Similar to the EU Association Agreements also the EFTA agreements implied asymmetric trade liberalization. These agreements opened the EFTA markets to imports from the CEECs faster than the CEE markets to EFTA products. In 1995, as a result of

¹¹ Unilateral trade liberalization with the CEE countries was initiated by the EU immediately after the fall of communism in Central and Eastern Europe. In 1990 the EU granted the Generalized System of Preference (GSP) status to Hungary and Poland, in 1991 to Bulgaria and former Czechoslovakia, and in 1992 to three former Soviet republics: Estonia, Latvia and Lithuania. Slovenia retained the preferential status for its exports into the EU under the so-called autonomous trade preferences granted to former Yugoslavia in the 1980 Cooperation Agreement. The GSP status significantly improved access of exporter from the CEE countries to the EU markets, especially for industrial products. GSP preferential rate embraced 63 percent of all CN tariff lines in EU imports with most of them subject to zero rates.

the EU enlargement, the EFTA lost three of its most important member states: Austria, Finland and Sweden that jointly accounted for more than 50 percent of EFTA's output. However, already in 1992 most EFTA countries signed the agreement with the EU establishing the European Economic Area (EEA).¹²

Through the EEA agreement that entered into force in 1994 the EFTA member states can participate in the EU Single Market. The EEA agreement created a free trade area covering trade in industrial goods and most services as well as liberalized the movement of labour and capital between EFTA and the EU. Therefore, the enlargement of the EU in 1995 did not change much the trade relations between the old and the new EU member states that left the EFTA except for trade in agricultural products.

Trade liberalization among the CEE countries

In addition to trade liberalization with Western Europe the CEE countries liberalized trade also among themselves by creating a matrix of bilateral and plurilateral sub-regional free trade agreements (see Table 2).

¹² The only exception was Switzerland which decided in 2002 in a referendum not to join the EEA. Instead, Switzerland concluded later a separate bilateral agreement with the EU.

Table 2. Bilateral and Plurilateral Free Trade Agreements among the CEE countries

[years in force]

Country	Baltic Free Trade Area (BAFTA)			Central European Free Trade Area (CEFTA)							
	Estonia	Latvia	Lithuania	Czech Republic	Slovakia	Hungary	Poland	Slovenia	Romania	Bulgaria	Croatia
Estonia	X	BAFTA [1994-2004]	BAFTA [1994-2004]	FTA [1998-2004]	FTA [1998-2004]	FTA [1998-2004]	FTA [1999-2004]	FTA [1997-2004]		FTA[2002-2004]	
Latvia	BAFTA [1994-2004]	X	BAFTA [1994-2004]	FTA [1997-2004]	FTA [1997-2004]	FTA [2000-2004]	FTA [1999-2004]	FTA [1996-2004]		FTA[2003-2004]	
Lithuania	BAFTA [1994-2004]	BAFTA [1994-2004]	X	FTA [1997-2004]	FTA [1997-2004]	FTA [2000-2004]	FTA [1997-2004]	FTA [1997-2004]		FTA[2003-2004]	
Czech Republic	FTA [1998-2004]	FTA [1997-2004]	FTA [1997-2004]	X	CEFTA [1993-2004]	CEFTA [1993-2004]	CEFTA [1993-2004]	CEFTA [1996-2004]	CEFTA [1997-2004]	CEFTA [1999-2004]	CEFTA [2003-2004]
Slovakia	FTA [1998-2004]	FTA [1997-2004]	FTA [1997-2004]	CEFTA [1993-2004]	X	CEFTA [1993-2004]	CEFTA [1993-2004]	CEFTA [1996-2004]	CEFTA [1997-2004]	CEFTA [1999-2004]	CEFTA [2003-2004]
Hungary	FTA [1998-2004]	FTA [2000-2004]	FTA [2000-2004]	CEFTA [1993-2004]	CEFTA [1993-2004]	X	CEFTA [1993-2004]	CEFTA [1996-2004]	CEFTA [1997-2004]	CEFTA [1999-2004]	CEFTA [2003-2004]
Poland	FTA [1999-2004]	FTA [1999-2004]	FTA [1997-2004]	CEFTA [1993-2004]	CEFTA [1993-2004]	CEFTA [1993-2004]	X	CEFTA [1996-2004]	CEFTA [1997-2004]	CEFTA [1999-2004]	CEFTA [2003-2004]
Slovenia	FTA [1997-2004]	FTA [1996-2004]	FTA [1997-2004]	CEFTA [1996-2004]	CEFTA [1996-2004]	CEFTA [1996-2004]	CEFTA [1996-2004]	X	CEFTA [1997-2004]	CEFTA [1999-2004]	CEFTA [2003-2004]
Romania				CEFTA [1997-2004]	CEFTA [1997-2004]	CEFTA [1997-2004]	CEFTA [1997-2004]	CEFTA [1997-2004]	X	CEFTA [1999-2007]	CEFTA [2003-2007]
Bulgaria	FTA[2002-2004]	FTA[2003-2004]	FTA[2003-2004]	CEFTA [1999-2004]	CEFTA [1999-2004]	CEFTA [1999-2004]	CEFTA [1999-2004]	CEFTA [1999-2004]	CEFTA [1999-2007]	X	CEFTA [2003-2007]
Croatia				CEFTA [2003-2004]	CEFTA [2003-2004]	CEFTA [2003-2004]	CEFTA [2003-2004]	CEFTA [2003-2004]	CEFTA [2003-2007]	CEFTA [2003-2007]	X

The most important of these was the Central European Free Trade Area established by former Czechoslovakia, Hungary and Poland. The CEFTA agreement was signed on December 21, 1992 and entered into force on March 1, 1993. The initial CEFTA agreement eliminated tariffs on approximately 40 percent of industrial goods. Trade in industrial goods and some agricultural products was further liberalized through a series of additional protocols, mostly signed in 1994 and 1995. By 1996 almost 80 percent of the CEFTA trade in industrial products were free of tariffs. By 1999 tariffs were abolished on almost all industrial products except a minor list of “sensitive” products.¹³

The CEFTA membership gradually expanded overtime to include Slovenia (1996), Romania (1997), Bulgaria (1991) and Croatia (2003). The CEFTA agreement was supposed to include also three newly independent Baltic States: Estonia, Latvia and Lithuania that emerged from the former Soviet Union after its collapse in 1991. However, these three countries in about the same time when the CEFTA was built created their own Baltic Free Trade Area.

The BAFTA agreement was signed on September 13, 1993 and entered in force on April 1, 1994. In contrast to CEFTA, BAFTA did not increase its membership but the coverage of the agreement was increased over time at a faster pace than in the CEFTA member states. In particular, by January 1, 1997 BAFTA included not only industrial but also agricultural and fish products. In this way BAFTA became the first free trade area in the region that provided for completely liberalized trade in these politically sensitive areas.

Consequently, the significant differences in the pace and the coverage of trade liberalization between the BAFTA and the CEFTA member states did not allow creating a single free trade area that would embrace all the CEE countries before their accession to the EU. Instead, a number of bilateral trade agreements between the BAFTA and the CEFTA member countries was signed that complemented sub-regional trade liberalization in Central and Eastern Europe.

¹³ These included mainly certain types of cars whose trade was liberalized by January 1, 2002.

Trade liberalization with other countries

In addition to bilateral and plurilateral trade liberalization among the CEE countries these countries also participated in a number of bilateral free trade agreements concluded with other countries located both in the Middle East as well as in South-Eastern Europe (see Table 3).

Table 3. Bilateral Free Trade Agreements of the CEE countries with other countries
[years in force]

Country	Middle East		South-Eastern Europe		
	Israel	Turkey	Albania	Macedonia	Ukraine
Estonia		FTA [1998-2004]			FTA [1996-2004]
Latvia		FTA [2000-2004]			
Lithuania		FTA [1998-2004]			
Czech Republic	FTA [1997-2004]	FTA [1998-2004]			
Slovakia	FTA [1997-2004]	FTA [1998-2004]			
Hungary	FTA [1998-2004]	FTA [1998-2004]			
Poland	FTA [1998-2004]	FTA [2000-2004]			
Slovenia	FTA [1998-2004]	FTA [2000-2004]		FTA [1996-2004]	
Romania	FTA [2001-2007]	FTA [1998-2007]	FTA [2004-2007]	FTA [2004-2007]	
Bulgaria	FTA [2002-2007]	FTA [1999-2007]	FTA [2003-2007]	FTA [2000-2007]	
Croatia		FTA [2003-present]	FTA [2003-present]		

Most agreements were signed by the CEFTA members with Israel and Turkey in the late 1990s and the early 2000s once these two countries concluded new Association Agreements with the EU.¹⁴ In addition to that the Balkan members of the CEFTA concluded also a number of agreements with neighbouring Balkan countries: Albania and Macedonia. The Baltic states also concluded bilateral free trade agreements with Turkey, and Estonia also a separate agreement with Ukraine.

¹⁴ The new EU association agreement with Turkey established a customs union with the EU that entered into force in 1996.

The Definitions of the Variables and the Data Sources

Our dependent variables used in the estimating equation (1) are bilateral exports and imports of ten CEE countries that joined the EU in the two subsequent waves of enlargement to the East in 2004 and 2007. These include five Central European countries: the Czech Republic, Slovakia, Hungary, Poland and Slovenia, three North-Eastern European states: Estonia, Latvia and Lithuania, and two South-Eastern European countries: Bulgaria and Romania. The trade flows data comes from the single source UN COMTRADE database and is expressed in the constant US dollars in 2000 prices. The sample choice was determined by data availability. The sample covers 195 trading partners of the CEE countries in the period of 1993-2004.¹⁵ This yields a total of approximately 16 thousand observations.

Our main explanatory variables include dummy variables indicating the EU Association Agreements as well as dummy variables indicating various intra-CEE bilateral trade and sub-regional trade agreements discussed in detail in Section 2 that were in force for the time span covered by our sample. In addition to this in our study we control also for potential effects of other preferential trading agreements concluded by the CEE countries. These include bilateral agreements concluded with the EFTA member states, the Mediterranean countries as well as the South Eastern European countries. Moreover, we also control for the potential effects of the EU enlargement in 2004 by including a special dummy variable for the EU-25.

Our main control variables derived from the trade theory include two types of variables. The first refers to economic country size measures while the second to the measures of factor proportions. The country size is measured using the data on trading partners' GDPs expressed in constant 2000 US dollars and evaluated in the PPP terms to assure their cross country comparability. The GDP data comes from the World Development Indicators 2006 (WDI) database compiled and published on a CD-ROM by the World Bank in Washington.

¹⁵ The sample choice was determined by data availability. The sample is limited downwards because of the political changes in Central and Eastern Europe related to the collapse of the Soviet Union and the break-up of Yugoslavia in 1992 and the 'velvet' divorce between the Czech and Slovak Republics that earlier constituted the Czech and Slovak Federal Republic.

Unfortunately, the data on capital per worker is not available for the CEE countries and most of their trading partners. Therefore, in our study we approximate capital-labour ratios in trading partners with their per capita GDP.¹⁶ Data on GDP per capita also comes from the WDI CD-ROM and is expressed in constant 2000 US dollars and evaluated in PPP terms to enable its cross-country comparability.

The remaining control variables include proxies for transportation and transaction costs. Distance between trading partners is measured as simple geographic “as the crow flies” distance between their capital cities and is expressed in kilometres. Distance data comes from the CEPII database available online at www.cepii.fr. In addition to the simple geographic proximity of trading partners we also include a dummy variable for the existence of a common border that takes the value 1 when countries share a common border, zero otherwise.

We include two dummy variables for a common language of trading partners that take on value 1 when the same language used in both countries is spoken by at least 9 percent of the population, zero otherwise. Finally, to control for historical ties we include two dummy variables indicating whether trading countries were in a colonial relationship or had a common colonizer. In the context of Central and Eastern Europe a colonial relationship mostly means whether trading countries were the part of the Austro-Hungarian Empire that in the early 20th century embraced a larger part of Central Europe. In a similar manner the common colonizer variable applies to the Eastern European countries that were the part of the Soviet Union until the early 1990s.

Empirical results

In this section we present two sets of empirical results based on estimating equation (1) that include the averaged estimates for the whole CEE sample as well as the estimates obtained separately for particular CEE countries.

¹⁶ The previous empirical research, for example studies by Hummels and Levinsohn (1995) and Evenett and Keller (2002), shows that capital per worker and GDP per capita are highly correlated.

Estimates for the whole CEE sample

The estimation results obtained for bilateral imports of the CEE countries using different estimation methods are presented in Table 4. The baseline estimates obtained via the traditional OLS estimation method on the pooled dataset for all CEE countries used in our study with individual time effects for particular years of our sample are reported in column (1).¹⁷ The estimation results indicate that both agreements with Western European countries: the EU Association and the EFTA agreements, as well as sub-regional intra-CEE agreements: BAFTA, CEFTA and bilateral agreements concluded between the members of BAFTA and CEFTA were effective in stimulating imports of the Central and East European countries. The evidence for other bilateral agreements is not clear cut. While the agreements concluded with the Mediterranean countries: Israel and Turkey appear to have increased bilateral imports of the CEE countries the estimates for other agreements are either not statistically significant or display negative signs.

The robustness of the OLS estimates is subsequently investigated in columns (2)-(5) that display the estimation results obtained using various estimation techniques that allow us to exploit the panel properties of our dataset. In column (2) in addition to time specific effects we also control for individual country-pair random effects, in column (3) for individual country-pair fixed effects, respectively. However, it has been recently argued that these estimation methods might not be fully correct as specific fixed effects for both trading countries must be taken into account. The estimation results obtained using the fixed effects for both exporting and importing countries are presented in column (4). Finally, using this estimation method in column (5) we control for potential endogeneity of trade agreements using their lagged values.

Table 4. The estimates for bilateral imports of the CEE countries

	OLS	RE	FE	2FE	2FE IV
GDP Partner	1.062 [121.64]***	1.068 [47.87]***	-1.396 [5.63]***	-2.037 [6.28]***	-1.956 [5.34]***
GDP Reporter	0.91 [58.02]***	0.909 [21.93]***	-6.826 [9.54]***	-5.422 [6.02]***	-4.241 [4.11]***
GDP pcap Partner	0.369 [19.54]***	0.473 [12.03]***	2.833 [11.60]***	3.318 [10.75]***	3.417 [10.16]***

¹⁷ The F-tests for time specific effects confirm the appropriateness of including time dummies for particular years of our sample in all estimated regressions for the whole CEE sample.

GDP pcap Reporter	0.54	0.509	7.513	6.3	5.233
	[11.71]***	[4.92]***	[10.75]***	[7.18]***	[5.28]***
Distance	-0.874	-1.009		-1.555	-1.471
	[45.22]***	[19.80]***		[34.06]***	[32.69]***
Colonial relationship	0.275	0.227		-0.474	-0.451
	[1.90]*	[0.39]		[5.19]***	[4.96]***
Common colonizer post 1945	2.948	2.943		1.695	1.541
	[31.05]***	[9.91]***		[18.60]***	[15.82]***
Contiguity	1.178	1.214		0.241	0.285
	[18.38]***	[3.97]***		[4.21]***	[5.07]***
Language	0.793	0.887		0.797	0.768
	[4.88]***	[1.61]		[8.19]***	[7.77]***
EU Membership	0.159	0.111	0.122	0.087	0.081
	[1.67]*	[1.09]	[1.20]	[1.18]	[0.98]
EU Association Agreement	1.143	0.675	0.31	0.232	0.096
	[24.71]***	[9.09]***	[3.85]***	[3.98]***	[0.92]
FTA with EFTA	0.977	0.791	0.583	0.219	-0.15
	[13.24]***	[5.92]***	[4.10]***	[1.97]**	[0.73]
CEFTA	1.148	0.47	0.135	-0.155	-0.047
	[18.20]***	[4.06]***	[1.10]	[2.50]**	[0.66]
BAFTA	0.799	0.882	0.382	1.712	1.937
	[5.97]***	[1.80]*	[0.62]	[13.24]***	[14.33]***
FTA with Macedonia	2.297	-0.895	-1.411	1.469	1.983
	[5.65]***	[1.97]**	[3.08]***	[3.14]***	[4.41]***
FTA with Turkey	0.741	0.78	0.765	0.853	1.034
	[8.77]***	[3.72]***	[3.60]***	[9.20]***	[9.39]***
FTA with Israel	0.973	0.123	0.226	0.106	0.038
	[11.26]***	[0.47]	[0.86]	[0.89]	[0.30]
FTA with Croatia	-0.669	-1.006	-1.052	-1.06	-1.802
	[1.77]*	[1.10]	[1.16]	[9.04]***	[1.62]
CEFTA/Baltic FTAs	1.278	0.449	0.094	0.423	0.487
	[18.29]***	[3.73]***	[0.75]	[6.15]***	[6.23]***
FTA with Albania	-1.581	0.281	0.002	-0.769	0.508
	[2.72]***	[0.38]	[0.00]	[1.64]	[2.58]***
Fta with Ukraine	-0.018	0.455	0.389	-0.455	-0.407
	[0.11]	[0.44]	[0.31]	[2.75]***	[2.43]**
Constant	-42.28	-42.248	118.328	140.92	115.258
	[66.14]***	[29.07]***	[9.68]***	[8.13]***	[5.72]***
Observations	16066	16066	16066	16066	13719
R-squared	0.71	0.71	0.9	0.84	0.84
F test: time dum.	16.73	196.09	16.58	11.4	11.5
Prob > F	0	0	0	0	0
Number of pair2		1623			

Robust t statistics in brackets

Notes: * significant at 10%; ** significant at 5%; *** significant at 1%

The estimation results obtained for the agreements with the EU Association Agreements are robust with respect to the estimation method, although the magnitude of the estimated effects is much smaller when the panel techniques are used compared to those obtained using the traditional OLS method. In all the cases our estimation results demonstrate that the EU-Association Agreements significantly contributed to the increase in bilateral imports of the CEE countries from the EU member states. The evidence obtained for intra-CEE trade

agreements is, however, mixed. While the simple OLS estimates suggest that all agreements concluded by the CEE countries significantly increased their bilateral imports, this evidence is not robust when panel data estimation techniques are employed (except BAFTA, where the coefficient is statistically significant and positive in all specifications). Also the estimation results obtained for the agreements with other countries turned out not to be robust with respect to the choice of the estimation method.

The estimation results for bilateral exports of the CEE countries obtained using different estimation techniques are reported in Table 5. The particular columns of this table are the direct counterparts of the columns in Table 4. Similar to the case of bilateral imports, the baseline estimates obtained using the traditional OLS method on the pooled dataset with individual time effects are presented in column (1), while their robustness is tested in columns (2)-(5) using panel data estimation techniques.

Table 5. The estimates for bilateral exports of the CEE countries

	OLS	RE	FE	2FE	2FE IV
GDP Partner	0.976 [72.72]***	0.969 [30.47]***	-2.707 [4.19]***	-3.105 [3.73]***	-0.094 [0.10]
GDP Reporter	0.864 [116.35]***	0.855 [50.40]***	-0.501 [2.26]**	-0.57 [1.96]*	-0.075 [0.22]
GDP pcap Partner	0.473 [13.14]***	0.585 [7.02]***	4.308 [6.80]***	4.611 [5.52]***	1.645 [1.84]*
GDP pcap Reporter	0.448 [30.23]***	0.412 [13.55]***	1.407 [6.48]***	1.296 [4.67]***	0.933 [3.02]***
Distance	-1.327 [86.49]***	-1.319 [33.56]***		-2.011 [41.98]***	-1.966 [39.72]***
Colonial relationship	0.229 [2.14]**	0.249 [0.56]		-0.112 [1.28]	-0.114 [1.30]
Common colonizer post 1945	2.292 [30.95]***	2.298 [10.00]***		1.576 [19.47]***	1.414 [16.90]***
Contiguity	0.313 [5.80]***	0.333 [1.42]		-0.079 [1.41]	-0.053 [0.92]
Language	0.541 [4.26]***	0.545 [1.29]		0.293 [3.45]***	0.27 [3.18]***
EU Membership	0.291 [3.49]***	0.216 [2.30]**	0.192 [2.02]**	0.312 [4.19]***	0.248 [3.01]***
EU Association Agreement	0.176 [4.70]***	0.378 [5.75]***	0.277 [3.76]***	0.068 [1.10]	0.215 [1.76]*
FTA with EFTA	0.129 [1.95]*	0.571 [4.81]***	0.551 [4.20]***	0.103 [0.72]	0.061 [0.25]
CEFTA	0.284 [5.66]***	0.525 [5.06]***	0.462 [4.09]***	0.693 [11.09]***	0.928 [12.35]***
BAFTA	0.328 [3.27]***	0.842 [2.02]**	0.958 [1.68]*	0.82 [6.13]***	0.97 [6.83]***
FTA with Macedonia	2.573 [8.15]***	0.325 [0.79]	-0.126 [0.30]	2.017 [4.25]***	2.273 [4.28]***
FTA with Turkey	0.012 [0.10]	0.501 [2.65]***	0.522 [2.68]***	0.49 [2.77]***	0.54 [2.90]***

FTA with Israel	-0.081	0.162	0.262	0.386	0.424
	[0.79]	[0.69]	[1.08]	[3.27]***	[3.59]***
FTA with Croatia	0.027	0.378	0.382	0.382	-0.013
	[0.42]	[0.45]	[0.46]	[1.80]*	[0.06]
CEFTA/Baltic FTAs	0.281	0.488	0.377	0.797	0.904
	[4.59]***	[4.48]***	[3.26]***	[10.29]***	[10.19]***
FTA with Albania	0.684	-0.113	-0.335	0.786	1.055
	[1.91]*	[0.16]	[0.49]	[3.75]***	[5.67]***
Fta with Ukraine	0.11	0.102	-0.305	0.006	0.115
	[0.77]	[0.11]	[0.27]	[0.03]	[0.66]
Constant	-35.059	-35.599	35.863	51.835	8.681
	[65.36]***	[31.10]***	[3.22]***	[4.05]***	[0.57]
	16750	16750	16750	16750	14509
R-squared	0.76	0.76	0.9	0.83	0.83
F test: time dum.	14.23	207.67	11.98	7.87	7.17
Prob > F	0	0	0	0	0
Number of pair2		1636			

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

The OLS estimates suggest that both the EU Association Agreements as well as intra-CEE sub-regional and bilateral trade agreements contributed significantly to the development of exports in the Central and Eastern European countries. All other trade agreements were not statistically significant except for those concluded with Albania and Macedonia. In contrast to the estimation results obtained previously for bilateral imports, the results obtained for both the EU Association Agreements and the intra-CEE agreements remain robust with respect to the choice of the estimation method. Interestingly, the estimated parameters obtained for the intra-CEE agreements were always higher than those for the Europe Agreements. Moreover, the coefficients obtained for the BAFTA were always higher than those for the CEFTA which can be explained by the faster and the bigger scope of trade liberalization in the Baltic states than among the Central European countries that did not liberalize trade in agricultural products completely until their entry into the EU in 2004.

Estimates for particular CEE countries

To gain a deeper insight into what drives our empirical results we disaggregate our sample into ten sub-samples for particular CEE countries and estimate the gravity equations for their bilateral exports and imports separately for each country using the traditional OLS method with robust standard errors.¹⁸ The estimation results for bilateral imports of the individual CEE countries are presented in Table 6 while for bilateral exports in Table 7.

Table 6. The estimates for bilateral imports of the CEE countries (single countries)

	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Slovenia	Slovak Republic	Bulgaria	Romania
GDP Partner	1.184 [52.48]***	0.995 [32.96]***	1.148 [49.28]***	0.784 [20.98]***	0.853 [27.03]***	0.987 [40.46]***	1.054 [44.57]***	1.12 [38.80]***	1.138 [41.62]***	1.241 [51.43]***
GDP pcap Partner	0.176 [3.28]***	0.568 [7.86]***	0.272 [4.77]***	0.893 [12.20]***	0.862 [12.62]***	0.21 [4.24]***	0.317 [6.51]***	0.335 [5.26]***	0.319 [5.47]***	0.3 [5.56]***
Distance	-0.873 [16.31]***	-0.74 [8.62]***	-0.659 [11.43]***	-0.755 [9.68]***	-0.887 [10.92]***	-0.526 [9.69]***	-1.089 [21.87]***	-0.706 [11.53]***	-1.051 [16.16]***	-1.086 [19.40]***
Colonial relationship	-0.215 [1.15]	2.254 [10.24]***	0.064 [0.34]	3.57 [15.22]***	2.988 [10.91]***	-0.882 [5.55]***	-0.011 [0.06]	-0.825 [2.71]***	-3.618 [12.16]***	
Common colonizer post 1945		3.352 [13.56]***		3.241 [15.71]***	3.721 [20.01]***					
Contiguity	1.113	0.702	1.744	0.638	0.732	1.801	1.254	1.564	1.115	1.132

¹⁸ Unfortunately, in the case of single country regressions it is not possible to use panel data estimation techniques as the indicator variables are then collinear with the country-pair specific fixed effects.

	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Slovenia	Slovak Republic	Bulgaria	Romania
Language	[5.83]***	[3.66]***	[11.25]***	[2.54]**	[2.75]***	[13.38]***	[7.20]***	[6.28]***	[5.35]***	[7.94]***
			-0.536					-0.334	2.642	1.512
			[2.89]***					[1.42]	[11.68]***	[9.39]***
EU Membership	0.066	-0.061	0.822	0.009	-0.326	-0.067	0.508	0.248		
	[0.28]	[0.19]	[2.68]***	[0.03]	[1.07]	[0.27]	[2.10]**	[0.81]		
EU Association Agreement	0.892	1.388	1.502	1.446	1.471	1.681	0.763	1.178	0.744	0.769
	[5.97]***	[7.50]***	[9.90]***	[8.42]***	[8.25]***	[11.71]***	[6.10]***	[6.59]***	[5.72]***	[6.17]***
FTA with EFTA	0.995	1.771	1.01	1.639	1.803	1.829	0.305	0.845	0.199	0.532
	[5.83]***	[8.92]***	[4.72]***	[7.89]***	[9.23]***	[11.44]***	[1.94]*	[3.60]***	[0.97]	[3.22]***
CEFTA	1.388		1.503			1.371	0.958	1.827	1.255	0.752
	[7.62]***		[9.49]***			[9.49]***	[7.10]***	[8.21]***	[7.47]***	[4.49]***
BAFTA		0.648		0.678	0.441					
		[2.28]**		[3.01]***	[2.04]**					
FTA with Macedonia							2.951		0.553	-1.177
							[18.55]***		[2.16]**	[5.65]***
FTA with Turkey	0.288	1.186	0.944	1.894	1.505	1.293	0.848	0.692	1.169	0.416
	[1.73]*	[5.39]***	[3.86]***	[9.85]***	[7.43]***	[6.70]***	[4.04]***	[2.49]**	[5.96]***	[2.07]**
FTA with Israel	0.899		1.41			1.223	1.354	0.83	0.431	1.342
	[7.76]***		[8.63]***			[8.54]***	[9.61]***	[4.97]***	[2.30]**	[8.58]***
FTA with Croatia						-0.273				
						[0.58]				
Bulgaria-Estonia FTA		1.126							0.069	
		[2.94]***							[0.50]	
Bulgaria-Latvia FTA					1.492				-0.332	
					[2.76]***				[2.38]**	
Bulgaria-Lithuania FTA				1.316					0.953	
				[3.33]***					[3.28]***	
Czech Rep.-Estonia FTA	1.767	2.032								
	[5.82]***	[8.23]***								
Czech Rep.-Latvia FTA	0.739				2.083					
	[4.04]***				[9.98]***					
Czech Rep.-Lithuania FTA	0.859			2.296						
	[4.62]***			[10.57]***						
Estonia-Hungary FTA		2.109	2.696							
		[10.35]***	[9.99]***							
Estonia-Poland FTA		2.018				1.537				
		[7.52]***				[5.78]***				
Estonia-Slovakia FTA		1.468						1.318		
		[7.13]***						[5.27]***		
Estonia-Slovenia FTA		1.537					-0.21			
		[6.53]***					[1.55]			
Hungary-Latvia FTA			0.434		1.927					
			[1.89]*		[7.99]***					
Hungary-Lithuania FTA			1.173	1.764						
			[3.44]***	[6.70]***						
Latvia-Slovakia FTA					2.31			1.916		
					[11.23]***			[7.61]***		
Latvia-Slovenia FTA					1.72		0.496			
					[8.25]***		[3.04]***			
Latvia-Poland FTA					2.524	1.23				
					[9.81]***	[7.20]***				
Lithuania-Slovakia FTA				1.851				0.889		
				[9.40]***				[3.81]***		
Lithuania-Slovenia FTA				2.057			-0.857			
				[9.16]***			[6.06]***			
Lithuania-Poland FTA				2.197		0.367				
				[8.38]***		[1.64]				

	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Slovenia	Slovak Republic	Bulgaria	Romania
FTA with Albania									-1.822 [2.46]**	-2.912 [14.83]***
FTA with Ukraine		-0.295 [1.13]								
Constant	-15.493 [21.76]***	-18.984 [17.61]***	-17.432 [22.85]***	-15.553 [14.05]***	-16.091 [14.34]***	-12.931 [20.48]***	-12.996 [17.32]***	-17.792 [23.50]***	-15.042 [17.25]***	-16.589 [22.57]***
Observations	1801	1427	1878	1311	1227	1813	1754	1612	1532	1711
R-squared	0.74	0.69	0.73	0.68	0.74	0.73	0.75	0.7	0.7	0.73
F test: time dum.	1.03	4.18	0.89	2.89	0.67	1.25	1.69	2.67	2.54	0.99
Prob > F	0.41	0	0.56	0	0.78	0.24	0.06	0	0	0.45

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

We find that the Europe Agreements significantly increased imports of all the CEE countries. The EFTA agreements were also effective in stimulating bilateral imports of the CEECs except for Bulgaria. Also the estimates obtained for the intra-CEE agreements were statistically significant for most countries. In particular, the sub-regional BAFTA and CEFTA agreements were significant for all the CEE countries, although at different levels of significance, while bilateral agreements concluded between the particular BAFTA and the CEFTA member states were statistically significant and displayed the expected positive signs for almost all countries except Slovenia and Bulgaria. The estimation results obtained for bilateral agreements with other countries were country specific.

The estimation results obtained for bilateral exports of the particular CEE countries are reported in columns (1)-(10). In contrast to the results obtained for imports, we find that the Europe Agreements were effective only in stimulating exports of the Baltic states. Similar results were obtained for trade agreements concluded with the EFTA member countries. The CEFTA agreement contributed to the expansion of exports in only of the three core countries: the Czech Republic, Slovakia and Poland, while the BAFTA agreement was statistically significant for all Baltic states. The bilateral agreements between particular CEE countries were statistically significant for almost all countries. The results obtained for bilateral agreements with other countries were country specific.

**Table 7. The estimates for bilateral exports of the CEE countries
(single countries)**

	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Slovenia	Slovak Republic	Bulgaria	Romania
GDP Partner	0.96 [60.72]***	0.642 [20.21]***	0.982 [61.11]***	0.756 [23.04]***	0.677 [22.63]***	0.843 [40.13]***	0.851 [39.04]***	0.943 [39.70]***	0.952 [42.16]***	0.942 [51.94]***
GDP pcap Partner	0.45 [12.51]***	0.581 [9.04]***	0.687 [18.76]***	0.451 [7.37]***	0.623 [8.80]***	0.457 [11.82]***	0.62 [14.48]***	0.458 [9.87]***	0.258 [5.78]***	0.238 [5.46]***
Distance	-1.406 [40.77]***	-0.886 [11.48]***	-1.578 [48.14]***	-0.964 [13.83]***	-0.819 [11.20]***	-1.249 [33.04]***	-1.571 [34.86]***	-1.352 [32.28]***	-1.517 [35.91]***	-1.332 [30.84]***
Colonial relationship	-0.685 [4.76]***	2.125 [12.44]***	-1.993 [10.10]***	2.756 [10.40]***	2.64 [9.72]***	0.698 [5.90]***	-0.248 [1.86]*	-1.196 [4.88]***	-1.755 [7.07]***	
Common colonizer post 1945		2.18 [11.76]***		3.624 [25.17]***	2.966 [18.74]***					
Contiguity	0.63 [4.92]***	0.639 [3.75]***	-0.163 [1.78]*	0.29 [1.14]	0.198 [0.94]	0.49 [5.11]***	-0.008 [0.06]	0.299 [1.24]	0.145 [0.75]	0.223 [1.11]
Language			0.925 [4.68]***					0.174 [0.99]	1.531 [9.66]***	0.608 [2.32]**
EU Membership	0.6 [3.81]***	0.167 [0.59]	0.552 [2.61]***	-0.137 [0.42]	-0.249 [0.66]	0.321 [1.71]**	0.191 [1.03]	0.189 [0.72]		
EU Association Agreement	-0.725 [7.69]***	1.238 [7.21]***	-0.638 [6.70]***	1.78 [11.40]***	1.452 [8.26]***	0.151 [1.70]*	-0.581 [5.20]***	-0.128 [1.15]	-0.156 [1.60]	0.083 [0.74]
FTA with EFTA	-0.571 [3.85]***	2.105 [9.15]***	-0.866 [7.15]***	2.248 [10.92]***	1.693 [6.06]***	0.291 [1.76]*	-0.79 [5.14]***	-0.217 [1.46]	-0.68 [6.26]***	-0.269 [1.82]*
CEFTA	0.317 [2.90]***		-0.356 [3.32]***			0.288 [3.54]***	-0.084 [0.70]	0.951 [4.89]***	-0.609 [4.77]***	-0.118 [0.72]
BAFTA		1.417 [6.13]***		0.634 [3.66]***	0.672 [3.90]***					
FTA with Macedonia							2.845 [22.68]***		0.55 [2.70]***	1.633 [8.91]***
FTA with Turkey	-0.384 [1.69]*	0.676 [2.06]**	-0.647 [3.80]***	2.631 [19.60]***	-0.526 [2.55]**	0.107 [0.52]	-0.137 [0.83]	-0.013 [0.05]	0.37 [3.55]***	0.093 [0.46]
FTA with Israel	-0.312 [2.47]**		-0.383 [2.71]***			-0.441 [2.63]***	-0.432 [3.89]***	-0.812 [4.78]***	0.07 [0.62]	0.676 [4.73]***
FTA with Croatia						0.383 [3.29]***				
Bulgaria-Estonia FTA		-0.627 [2.97]***							0.355 [2.66]***	
Bulgaria-Latvia FTA					-0.307 [0.68]				0.451 [4.02]***	
Bulgaria-Lithuania FTA				0.947 [1.49]					0.211 [1.95]*	
Czech Rep.-Estonia FTA	0.996 [11.07]***	0.768 [2.61]***								
Czech Rep.-Latvia FTA	0.631 [7.21]***				0.573 [2.64]***					
Czech Rep.-Lithuania FTA	0.76 [10.62]***			0.938 [3.98]***						
Estonia-Hungary FTA		1.573 [6.16]***	0.984 [9.04]***							
Estonia-Poland FTA		0.787 [3.59]***				1.212 [10.72]***				
Estonia-Slovakia FTA		-0.289 [1.39]						0.973 [7.41]***		
Estonia-Slovenia FTA		-0.833 [4.79]***					0.315 [2.80]***			
Hungary-Latvia FTA			0.376 [3.81]***		0.068 [0.32]					
Hungary-Lithuania FTA			0.086 [0.98]	0.928 [3.08]***						
Latvia-Slovakia FTA					1.107 [4.80]***			1.422 [10.80]***		
Latvia-Slovenia FTA					0.679 [3.51]***		0.338 [2.69]***			
Latvia-Poland FTA					1.172 [6.17]***	1.146 [9.62]***				
Lithuania-Slovakia FTA				0.314 [1.44]				0.923 [7.74]***		
Lithuania-Slovenia FTA				-0.298 [1.36]			0.73 [7.61]***			

	Czech	Estonia	Hungary	Lithuania	Latvia	Poland	Slovenia	Slovak	Bulgaria	Romania
	Republic							Republic		
Lithuania-Poland FTA				1.575 [5.25]***		0.646 [5.28]***				
FTA with Albania									0.134 [0.83]	-0.103 [0.59]
FTA with Ukraine		1.065 [4.78]***								
Constant	-6.821 [14.85]***	-8.214 [7.98]***	-8.649 [16.98]***	-8.773 [8.52]***	-9.796 [8.71]***	-5.21 [10.49]***	-5.952 [9.50]***	-9.718 [15.92]***	-5.643 [8.68]***	-6.144 [10.51]***
Observations	1862	1357	1956	1405	1305	1942	1679	1611	1701	1932
R-squared	0.85	0.66	0.85	0.72	0.65	0.81	0.81	0.81	0.77	0.73
F test: time dum.	0.85	2.8	1.34	1.73	0.79	1.61	1.47	5.43	2.84	3.67
Prob > F	0.59	0	0.19	0.05	0.66	0.08	0.13	0	0	0

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Concluding remarks

In this paper we have studied the effectiveness of the EU-sponsored trade liberalization in the CEE countries. We have found that while trade liberalization with the EU in the form of the Association Agreements was on average effective in raising both bilateral imports and bilateral exports of the CEE countries to the EU. At the same time our results show that significant heterogeneity among the CEE countries exist with respect to the timing and the scope of trade liberalization. In particular, the results obtained for particular CEE countries demonstrate that while the Europe Agreements had a positive and statistically significant impact on the imports of all countries in the region, their positive impact on exports is limited only to the Baltic states. This result can be explained by differences in the pace of trade liberalization between the EU and these two groups of countries in the CEE region. In particular, by the fact that the Central European countries have been enjoying a preferential access to the EU markets since the early 1990s while trade liberalization with the Baltics did not take place until the collapse of the Soviet Union.

Assessing the impact of the EU-sponsored trade liberalization in the MENA countries

The Euro-Mediterranean Integration Process

The MENA countries have started their integration experience with the EU more than 30 years ago. In the 1960s and the 1970s preferential trade agreements including the first generation Association and Cooperation Agreements were signed with selected Mediterranean countries: Algeria (1973), Egypt (1972), Morocco (1969), Tunisia (1969) and Turkey (1963). These agreements unilaterally liberalized most EU imports from the MENA countries, while most MENA markets remained protected by high tariffs until the 1990s.¹⁹

The Euro-Mediterranean Conference of Ministers of Foreign Affairs held in Barcelona on 27-28 November 1995 has initiated the so-called Barcelona Process that represents a turning point in the relations between the EU and the MENA countries. In the Barcelona Declaration the EU and the MENA countries established the main objectives of the Barcelona Process, including the creation of the Euro-Mediterranean Free Trade Area by 2010. Together with the EFTA that forms together with the EU the European Economic Area, this zone is foreseen to become world's largest market place that will eventually include about 40 countries and 800 million consumers.²⁰

The Barcelona Process has two complementary dimensions: bilateral and regional. The EU carries out a number of activities bilaterally with each country. The most important ones are the Euro-Mediterranean Association Agreements that the European Commission negotiates individually with particular MENA countries. These new generation agreements that replaced the previous Association and Cooperation Agreements signed in the 1960s and 1970s foresee bilateral trade in manufactured goods and progressive liberalization of trade in agricultural

¹⁹ The exception was Israel where reciprocity was required.

²⁰ Included with the EU member states in this potential agreements were the following Mediterranean countries: Algeria, Cyprus (now the EU member), Egypt, Israel, Jordan, Lebanon, Malta (now the EU member), Morocco, the Palestinian Authority, Syria, Tunisia and Turkey while Libya has the observer status since 1999.

products. The provisions of the Euro-Mediterranean Association Agreements governing the bilateral relations contain the general principles common to all MENA countries as well as specific characteristics that vary across countries.

Table 1. The Euro-Mediterranean Association Agreements

Country	Signature date	Entry into force
Algeria	22.04.2002	01.09.2005
Egypt	25.06.2001	01.06.2004
Israel	20.11.1995	01.06.2000
Jordan	24.11.1997	01.05.2002
Lebanon	17.06.2002	In process of ratification (Interim Agreement for early implementation of trade measures in force since 01.03.2003)
Morocco	26.02.1996	01.03.2000
Palestinian Authority	24.02.1997	01.07.1997 (Interim association agreement)
Syria	Negotiations concluded awaiting for signature	
Tunisia	17.07.1995	01.03.1998
Turkey	06.03.1995	31.12.1995

Source: European Commission (2007).

http://ec.europa.eu/external_relations/euromed/med_ass_agreements.htm

With the conclusion of negotiations with Syria in 2004 the network of bilateral Association Agreements with the MENA countries has been completed (see Table 1). After the signature the agreements entered a lengthy ratification process by the national parliaments of the EU member states and the MENA countries. The Association Agreements came progressively into force in Tunisia (1998), Israel (2000), Morocco (2000), Jordan (2002), Egypt (2004) and Algeria (2005).²¹ The Interim Agreements for early implementation of trade related matters are in force in the Palestinian Authority (1997) and Lebanon (2003). Moreover, special agreements establishing a customs union with the EU were signed with the European Mediterranean EU candidate countries: Cyprus, Malta and Turkey that entered into force before their accession into the EU. The EU enlargement on May 1, 2004 brought

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²¹ The implementation of the trade part of the Association Agreement with Israel has started already on January 1, 1996. In our econometric study presented further in the text we also used year 1989 as the date when unilateral liberalization of Israeli imports of manufactured goods from the EU took place, however, the estimation results were very similar.

Cyprus and Malta into the EU, whereas the customs union agreement with Turkey (1996) is still in force.

In addition to “vertical” bilateral trade liberalization with the EU the MENA countries are committed to implement “horizontal” trade liberalization among themselves. However, compared to the Euro-Mediterranean Association Agreements trade liberalization between particular MENA countries is still far less advanced. Some doubts about the desirability of intra-MENA trade liberalization stem from the long history of failure in creating a well functioning plurilateral free trade agreement.

Commonly mentioned examples of such failure stories include the Arab Common Market and other initiatives of the Arab League and the Council of Economic Unity, as well as various sub-regional arrangements such as among Maghreb countries, and many other trade agreements formed among countries of the MENA region. According to Nugent and Yousef (2005, p.1) “Not only have these special arrangements been far from fully realized, but also even normal trade among countries of the region has been periodically and unexpectedly interrupted by trade boycotts, ad hoc border closings and so on.”

Given the lack of significant progress in liberalizing trade at the regional and sub-regional levels in the MENA region some countries located both in the Middle East and North Africa decided to liberalize their trade on bilateral basis. This led to the establishment of the grid of bilateral trade agreements by the end of the 1990s that prepared the ground for the Agadir Declaration signed in 2001 by the representatives of four MENA countries: Egypt, Jordan, Morocco and Tunisia. The Agadir Declaration included a commitment to the establishment of a free trade area (FTA) between these countries that remained open onto other Arab countries.²²

In 2003 the four member countries of the Agadir group finalized the agreement on the establishment of a free trade area among themselves that would replace the existing bilateral trade agreements of the 1990s. The Agadir Agreement was signed in 2004 and was initially

²² Lebanon and Syria are currently in the process of negotiations to join the Agadir Organization. Other potential entrants include Algeria, Libya, Mauritania and the Palestinian Authority.

foreseen to take effect in 2005. However, it encountered delays in entering into force due to the slow ratification process by some countries and eventually came into force only in 2007.²³

The Agadir Agreement is seen as a stepping stone to the formation of a well functioning regional trade agreement that would complement on-going trade liberalization with the EU and eventually lead to the creation of the EUROMED. However, at this stage it is too early to evaluate its effectiveness. Nevertheless, it is possible to evaluate empirically at least the effectiveness of those bilateral trade agreements concluded among the MENA countries in the late 1990s that later laid the foundations for the Agadir Agreement.

The effectiveness of these bilateral agreements has been frequently questioned in the literature but to the best of our knowledge there were no previous formal attempts to verify their effectiveness empirically. Therefore, in addition to studying the effectiveness of the Euro-Mediterranean Association Agreements we also study the effectiveness of bilateral trade agreements of the particular Agadir countries to check whether these claims are really justified.

Other agreements by MENA countries

Most MENA countries in addition to the EU Association Agreements concluded at about the same time also free trade agreements with the EFTA countries that along with the EU form the European Economic Area since 1994. The EFTA agreements with the MENA countries that were in force during the period covered by our sample include Turkey (1992), Israel

²³ The declared goals of the Agadir Agreement in addition to the elimination of tariffs include also harmonization of laws in economic matters and coordination of sectoral and global economic policies, especially in the fields of international trade, agriculture, industry, finance, taxes and customs. A key element of the Agadir Agreement is the adoption of the Euro-Mediterranean Protocol on the rules of origin that allow MENA countries to benefit from diagonal cumulation of value added. In contrast to the US rules of origin that consider value added domestically in the country that exports to the US this means that it turns the blind eye to where value was added for the purpose of preferential tariffs as long as it was in an FTA partner country. These conflicting regimes give the EU an advantage in its competition with the US to secure the Euro-Mediterranean FTA as a counter force to the US-Middle East FTA.

(1993), Morocco (1999), and Jordan (2002).²⁴ In addition to the bilateral trade agreement between Israel and Turkey that is in force since 1997 these countries concluded a number of bilateral agreements with the CEE countries most of which joined the EU in two subsequent waves of enlargement in 2004 and 2007.

Israeli free trade agreements with the CEE that entered into force include the agreements with the Czech and Slovak Republics (1997), Hungary (1998), Poland (1998), Slovenia (1998), Romania (2001) and Bulgaria (2002). Turkish free trade agreements with the CEE countries that entered into force include the Czech and Slovak Republics (1998), Estonia (1998), Lithuania (1998), Hungary (1998), Romania (1998), Bulgaria (1999), Latvia (2000), Poland (2000), Slovenia (2000) and Croatia (2003).²⁵

In our study we control also for the potential effects of plurilateral and bilateral trade agreements concluded among the MENA countries. The plurilateral agreements include the Arab Maghreb Union (AMU) and the Arab Cooperation Council (ACC). These are two sub-regional agreements established in 1989 in the MENA region. The AMU includes five North African countries: Algeria, Libya, Mauritania, Morocco and Tunisia while the ACC includes four countries located in the Middle East: Egypt, Iraq, Jordan and Yemen.

The AMU was concluded with the aim to "...work gradually towards the realization of the freedom of movement of people, goods, services and capital" (Banks, 1995; p. 1030). The AMU was supposed to revive the old idea of regional integration in the Maghreb countries proposed already in the 1960s in the form of the Maghreb Customs Union (MCU) that was never implemented. However, despite the declared ambitious goals of the AMU that included the establishment of the free trade area in 1992, a common market by 2000 and eventually a monetary union in already in 1993 leaders of the Maghreb countries agreed to postpone the discussion of the integration issues.

²⁴ In addition to these, the EFTA concluded also other agreements with the MENA countries that include Tunisia (2005), the Palestinian Authority (1999), and Lebanon (2007). The agreement concluded with Egypt has not entered into force yet.

²⁵ In addition to these Turkey concluded also bilateral agreements with the Balkan countries that emerged from the former Yugoslavia. These include the FTA with the FYR of Macedonia that entered into force in 2000 and was followed by the entry into force of the FTA with Bosnia-Herzegovina in 2003.

Similar to the AMU, the ACC was formed in response to the slow pace of trade liberalization in the Arab countries and its intention was to revive regional integration in the Middle East proposed also in the 1960s in the form of the Arab Common Market (ACM) that has never been applied in practice despite some partial trade liberalization between 1965 and 1971. Similar to the AMU, also the ACC did not manage to achieve its the original goal of creating a sub-regional common market as a result of the political crisis that followed Iraq's invasion of Kuwait in 1990s.

Given the failure of plurilateral trade liberalization at the sub-regional level some of the MENA countries decided to pursue trade liberalization on a bilateral basis. This resulted in a series of bilateral agreements concluded both between the MENA countries as well as with the countries outside the region. In this respect two most active countries in the region were two former members of the ACC: Egypt and Jordan that liberalized trade not only among themselves but also with other MENA countries including two other future members of the Agadir group: Tunisia and Morocco as well as with other Arab countries.

These four future members of the Agadir group by the end of the 1990s have established a network of bilateral trade agreements among themselves most of which entered into force in 1999. In addition to these agreements we take into account in our study also other agreements that entered into force concluded by Egypt with Syria (1991), and by Jordan with United Arab Emirates (2001), Bahrain (2002), Syria (2002), Sudan (2004).²⁶

Finally, to complete the analysis of the impact of bilateral free trade agreements we also control for the agreements concluded by some of the MENA countries with the North American countries that formed the NAFTA. The agreements that were in force during the period of our investigation include the agreements concluded by Israel with the US (1985), Canada (1997) and Mexico(2000) as well as the agreement concluded by Jordan with the US (2001).

²⁶ Other agreements that were in force but whose effectiveness cannot be verified empirically due to the lack of data include the agreements concluded by Egypt with Libya (1991), Lebanon (1995) and Iraq (2001), and by Jordan with Kuwait (2002) and Lebanon (2003).

The Definitions of the Variables and the Data Sources

Our dependent variables used in the estimating equation (1) are bilateral exports and imports of seven MENA countries that are the most advanced in liberalizing their trade with the EU as well as with each other. These include four North African countries: Algeria, Egypt, Morocco and Tunisia, and three countries located in the Middle East: Israel, Jordan and Turkey. The sample choice has been determined by data availability. The trade flows data comes from the single source UN COMTRADE database and is expressed in the constant US dollars in 2000 prices. The trade data is available for 196 trading partners and covers the period of 1980-2004. This yields a total of almost 19 thousand observations.

Our main explanatory variables include dummy variables indicating the EU Association Agreements as well as dummy variables indicating the bilateral trade agreements between the Agadir countries discussed in detail in Section 2 that were in force for the time span covered by our sample. In addition to this in our study we control also for potential effects of other preferential trading agreements concluded by the MENA countries. These include: the EFTA agreements, the Arab Maghreb Union, the Arab Cooperation Council, various bilateral agreements between MENA countries as well as bilateral agreements with the EU associated states (now new EU member countries) in Central and Eastern Europe and the NAFTA countries: Canada, Mexico and the US.²⁷

Our main control variables derived from the trade theory include two types of variables. The first refers to economic country size measures while the second to the measures of factor proportions. The country size is measured using the data on trading partners' GDPs expressed in constant 2000 US dollars and evaluated in the PPP terms to assure their cross country comparability. The GDP data comes from the World Development Indicators 2006 (WDI) database compiled and published on a CD-ROM by the World Bank in Washington.

²⁷ In our study we take into account potential effects of preferential trading agreements at different stages of their implementation as some of these agreements despite their entry into force have not been fully implemented yet and much of the liberalizing effort is still to come.

Unfortunately, the data on capital per worker is not available for the MENA countries and most of their trading partners. Therefore, in our study we approximate capital-labor ratios in trading partners with their per capita GDP.²⁸ Data on GDP per capita also comes from the WDI CD-ROM and is expressed in constant 2000 US dollars and evaluated in PPP terms to enable its cross-country comparability.

The remaining control variables include proxies for transportation and transaction costs. Distance between trading partners is measured as simple geographic “as the crow flies” distance between their capital cities and is expressed in kilometers. Distance data comes from the CEPII database available online at www.cepii.fr. In addition to the simple geographic proximity of trading partners we also include a dummy variable for the existence of a common border that takes the value 1 when countries share a common border, zero otherwise.

We include two dummy variables for a common language of trading partners that take on value 1 when the official language used in both countries is Arabic or Turkish, zero otherwise. Finally, to control for historical ties we include two dummy variables indicating whether trading countries were in a colonial relationship or had a common colonizer.

Empirical results

In this section we present two sets of empirical results based on estimating equation (1) that include the averaged estimates for the whole MENA sample as well as the estimates obtained separately for particular MENA countries.

Estimates for the whole MENA sample

The estimation results for bilateral imports of the MENA countries obtained using different estimation methods are reported in Table 2. The baseline estimates obtained via the traditional OLS estimation method on the pooled dataset for all MENA countries used in our study with

²⁸ The previous empirical research, for example studies by Hummels and Levinsohn (1995) and Evenett and Keller (2002), shows that capital per worker and GDP per capita are highly correlated.

individual time effects for particular years of our sample are reported in column (1).²⁹ The robustness of these estimates is subsequently investigated in columns (2)-(5) using various estimation techniques that allow us to exploit the panel properties of our dataset.

In columns (2) and (3) we report estimation results obtained using in addition to time specific effects also individual country-pair fixed and random effects, respectively. However, it has been recently argued that these estimation methods might not be fully correct as specific fixed effects for both trading countries must be taken into account. The estimation results obtained using the fixed effects for both exporting and importing countries are presented in column (4). Finally, using this estimation method in column (5) we control for potential endogeneity of trade agreements using their lagged values.

²⁹ The F-tests for time specific effects confirm the appropriateness of including time dummies for particular years of our sample in all estimated regressions for the whole MENA sample.

Table 2. The estimates for bilateral imports of the MPCs
[robust t-statistics]

Explanatory variables	OLS (1)	RE (2)	FE (3)	2FE (4)	2FEIV (5)
EU-Association Agreement	0.712 [12.99]***	0.274 [3.51]***	0.238 [2.93]***	0.215 [4.39]***	0.299 [5.43]***
EFTA	0.865 [6.61]***	0.407 [2.45]**	0.331 [1.98]**	0.944 [6.95]***	1.068 [7.28]***
AMU	-0.107 [0.75]	0.638 [2.98]***	0.619 [2.83]***	0.167 [0.82]	-0.169 [0.81]
ACC	0.745 [3.32]***	0.81 [1.10]	0.831 [1.13]	0.391 [1.54]	-0.271 [0.42]
jordanmorocco	1.237 [8.90]***	1.075 [2.34]**	1.086 [2.36]**	0.717 [3.14]***	0.617 [2.43]**
moroccotunisia	0.704 [4.61]***	-0.323 [0.68]	-0.434 [0.92]	0.72 [3.71]***	0.918 [4.53]***
egypttunisia	0.492 [6.27]***	0.047 [0.10]	-0.115 [0.25]	0.372 [2.59]***	0.41 [2.56]**
egyptjordan	0.816 [5.25]***	0.611 [1.31]	0.57 [1.22]	0.45 [2.43]**	0.353 [1.87]*
egyptmorocco	0.612 [3.74]***	1.027 [2.23]**	0.971 [2.12]**	0.351 [1.76]*	0.335 [1.59]
jordantunisia	1.159 [4.38]***	0.11 [0.24]	0.012 [0.03]	0.778 [2.83]***	0.749 [2.85]***
moroccouae	1.538 [5.48]***	-0.036 [0.04]	-0.396 [0.46]	1.762 [4.90]***	1.55 [4.41]***
jordanlebanon	1.461 [2.73]***	-0.325 [0.44]	-0.287 [0.39]	0.52 [1.80]*	0.355 [1.09]
egyptsyria	0.324 [1.82]*	1.28 [2.33]**	1.192 [2.15]**	-0.305 [1.29]	-0.446 [2.00]**
jordansudan	1.087 [11.71]***	0.029 [0.02]	0.167 [0.12]	1.316 [6.42]***	1.194 [5.68]***
jordansyria	1.922 [9.32]***	0.47 [0.55]	0.516 [0.60]	0.736 [2.76]***	0.566 [2.33]**
jordanbahrain	1.148 [5.32]***	-0.158 [0.18]	-0.086 [0.10]	0.799 [2.81]***	0.417 [1.53]
jordanuae	1.469 [13.61]***	1.834 [2.41]**	1.724 [2.26]**	2.162 [8.46]***	1.753 [7.30]***
israelturkey	1.476 [10.43]***	1.429 [3.40]***	1.327 [3.16]***	1.91 [8.00]***	1.887 [7.33]***
bulgaria	1.826 [16.04]***	1.327 [2.56]**	1.31 [2.53]**	0.213 [1.13]	0.361 [2.06]**
czech	0.612 [4.93]***	0.287 [0.52]	0.293 [0.51]	0.494 [3.02]***	0.676 [4.44]***
estonia	0.813 [4.04]***	0.04 [0.05]	0.079 [0.10]	0.69 [2.18]**	0.365 [1.16]
hungary	0.832 [7.19]***	0.653 [1.49]	0.641 [1.46]	0.486 [2.91]***	0.617 [3.88]***
latvia	-1.035 [2.74]***	0.166 [0.21]	0.418 [0.53]	-0.78 [2.04]**	-1.313 [4.72]***
lithuania	1.884 [15.61]***	1.303 [1.73]*	1.324 [1.72]*	3.037 [13.67]***	3.003 [12.96]***
poland	-0.155 [1.18]	0.343 [0.66]	0.48 [0.92]	0.041 [0.27]	0.18 [1.36]
romania	1.504 [13.02]***	0.546 [1.03]	0.533 [0.99]	0.233 [1.61]	0.314 [2.52]**
slovakia	0.384 [2.08]**	0.218 [0.39]	0.283 [0.49]	0.625 [3.49]***	0.87 [4.85]***
slovenia	1.116 [11.67]***	0.52 [0.96]	0.526 [0.95]	0.685 [4.95]***	0.748 [5.25]***
croatia	0.261 [0.82]	0.415 [0.39]	0.49 [0.46]	-0.034 [0.11]	0.498 [4.12]***
canada	0.752 [9.19]***	-0.036 [0.06]	-0.125 [0.21]	0.32 [3.82]***	0.324 [3.67]***
mexico	-0.839 [11.10]***	-0.016 [0.02]	-0.017 [0.02]	1.063 [4.74]***	0.991 [4.40]***
us	0.722 [6.68]***	-0.098 [0.19]	-0.097 [0.18]	0.813 [8.28]***	0.887 [8.92]***

Y _i (partner)	1.159	1.212	1.481	1.001	1.224
	[129.22]***	[42.88]***	[9.52]***	[4.97]***	[5.89]***
Y _j (reporting)	0.64	0.752	0.805	-0.358	-0.526
	[38.94]***	[13.61]***	[2.92]***	[1.11]	[1.63]
K/L _i (partner)	0.626	0.412	-0.194	0.217	0.027
	[37.50]***	[9.41]***	[1.33]	[1.13]	[0.14]
K/L _j (reporting)	-0.056	0.283	1.368	1.983	1.853
	[1.95]*	[3.75]***	[6.40]***	[8.43]***	[7.73]***
DISTANCE _{ij}	-0.877	-0.903		-0.806	-0.832
	[43.27]***	[12.97]***		[18.56]***	[20.29]***
COLONY _{ij}	0.576	0.749		0.301	0.244
	[8.99]***	[1.87]*		[3.87]***	[3.16]***
COLONIZER _{ij}	1.07	0.596		0.675	0.829
	[16.59]***	[3.32]***		[9.89]***	[12.38]***
ARABIC _{ij}	0.342	0.585		0.86	0.702
	[7.21]***	[3.91]***		[12.29]***	[10.19]***
TURKISH _{ij}	-1.373	-1.178		-1.742	-1.376
	[4.02]***	[0.69]		[4.92]***	[4.18]***
CONTIGUITY _{ij}	0.248	-0.264		0.788	0.81
	[1.89]*	[0.69]		[5.44]***	[5.67]***
Constant	-33.943	-38.985	-57.958	-19.727	-19.07
	[62.78]***	[23.65]***	[9.36]***	[2.68]***	[2.56]**
Observations	18577	18577	18577	18577	16390
R-squared	0.64	0.63	0.08	0.74	0.75
F test: time dum.	17.49	254.07	4.49	2.31	2.81
Prob > F	0	0	0	0	0

Notes: - ***, **, * significant at the 1%, 5% and 10% levels of statistical significance, respectively.

In all the cases our estimation results demonstrate that the EU-Association Agreements significantly contributed to the increase in bilateral imports of the MPCs from the EU member states. The evidence obtained for bilateral trade agreements concluded in the late 1990s between the members of the Agadir group is, however, mixed. While the simple OLS estimates suggest that all bilateral agreements concluded between the Agadir group member states significantly increased their bilateral imports, this evidence is not robust when panel data estimation techniques are employed.

The estimates obtained for sub-regional plurilateral trade agreements in the MENA region: the AMU and the ACC are not robust with respect to the estimation method and suggest that once panel data estimation techniques are used, these agreements were not effective in stimulating bilateral imports of the MPCs. In contrast to these, the agreements concluded with the EFTA countries seem to have exerted a significant impact on bilateral imports of the MPCs, although the estimated magnitudes of this impact vary across the estimation methods.

The estimation results obtained for particular bilateral agreements with Central and Eastern European countries concluded by Israel and Turkey are country specific and not

robust, while the dummy variable for the bilateral agreement concluded between Israel and Turkey remains positive and statistically significant across all model specifications. Similarly, estimation results obtained for bilateral agreements concluded by particular MPCs with other Arab countries are country specific and not robust.

Finally, the agreements concluded with particular member states of the NAFTA: Canada, Mexico and the US are also not robust. Summing up, the assembled empirical evidence demonstrates that trade liberalization with the West European countries, including both the EU as well as EFTA countries, has been effective in increasing the bilateral imports of the MPCs, while the results obtained for other agreements are country specific and their simple generalization is not possible.

The estimation results for bilateral exports of the MPCs obtained using different estimation techniques are reported in Table 3. The particular columns of this table are the direct counterparts of the columns in Table 2. Similar to the case of bilateral imports, the baseline estimates obtained using the traditional OLS method on the pooled dataset with individual time effects are presented in column (1), while their robustness is tested in columns (2)-(5) using panel data estimation techniques.

Table 3. The estimates for bilateral exports of the MPCs
[robust t-statistics]

Explanatory variables	OLS (1)	RE (2)	FE (3)	2FE (4)	2FEIV (5)
EU-Association Agreement	0.500 [8.48]***	-0.244 [2.93]***	-0.219 [2.50]**	-0.255 [4.22]***	-0.126 [1.87]*
EFTA	0.324 [2.80]***	-0.313 [1.82]*	-0.341 [1.97]**	0.118 [0.90]	0.297 [2.24]**
AMU	1.084 [6.80]***	1.037 [4.92]***	0.985 [4.58]***	1.019 [5.13]***	0.753 [3.62]***
ACC	0.742 [3.28]***	0.861 [1.13]	0.888 [1.17]	0.485 [1.91]*	0.019 [0.03]
jordanmorocco	1.702 [7.09]***	0.699 [1.47]	0.513 [1.08]	0.685 [3.85]***	0.668 [3.64]***
moroccotunisia	-0.271 [1.59]	-0.986 [2.02]**	-0.99 [2.04]**	-0.6 [3.32]***	-0.465 [2.46]**
egypttunisia	0.441 [3.07]***	-0.448 [0.94]	-0.559 [1.18]	0.775 [5.15]***	0.768 [4.92]***
egyptjordan	0.488 [2.27]**	0.183 [0.38]	-0.058 [0.12]	-0.113 [0.56]	-0.093 [0.45]
egyptmorocco	0.882 [4.18]***	0.579 [1.21]	0.557 [1.17]	1.005 [5.62]***	0.998 [5.74]***
jordantunisia	1.32 [7.73]***	-0.314 [0.66]	-0.591 [1.24]	0.527 [2.14]**	0.577 [2.35]**
moroccouae	0.867 [10.09]***	0.399 [0.45]	-0.149 [0.17]	-0.258 [1.25]	-0.249 [1.16]
jordanlebanon	1.968 [23.12]***	-0.454 [0.59]	-0.676 [0.88]	0.443 [1.01]	0.386 [0.91]
egyptsyria	0.542 [4.90]***	3.535 [6.21]***	3.568 [6.21]***	0.339 [1.42]	0.429 [1.76]*
jordansudan	2.56 [28.32]***	0.401 [0.27]	0.21 [0.14]	2.115 [9.77]***	2.099 [9.56]***
jordansyria	1.515 [7.97]***	-0.011 [0.01]	-0.298 [0.34]	0.114 [0.45]	0.234 [0.93]
jordanbahrain	2.268 [15.91]***	-0.362 [0.41]	-0.675 [0.76]	1.556 [6.27]***	1.312 [5.47]***
jordanuae	2.663 [23.84]***	0.11 [0.14]	-0.695 [0.88]	1.884 [7.68]***	1.89 [7.58]***
israelturkey	0.907 [5.35]***	0.943 [2.17]**	0.81 [1.86]*	0.579 [1.37]	0.652 [1.48]
bulgaria	0.316 [2.07]**	0.959 [1.78]*	1.171 [2.18]**	-0.712 [3.57]***	-0.483 [2.28]**
czech	0.165 [1.67]*	0.109 [0.19]	0.157 [0.26]	0.723 [3.89]***	0.785 [4.48]***
estonia	1.177 [8.53]***	1.624 [2.09]**	1.907 [2.39]**	1.565 [5.77]***	1.348 [5.61]***
hungary	0.286 [3.25]***	0.539 [1.19]	0.67 [1.48]	0.64 [3.90]***	0.869 [5.35]***
latvia	0.918 [10.40]***	1.012 [1.22]	1.241 [1.48]	1.347 [5.51]***	1.398 [5.55]***
lithuania	0.851 [5.32]***	1.125 [1.45]	1.328 [1.66]*	1.396 [4.49]***	1.15 [3.57]***
poland	0.245 [2.08]**	0.338 [0.63]	0.463 [0.86]	0.484 [2.97]***	0.628 [4.14]***
romania	0.544 [4.81]***	0.388 [0.70]	0.483 [0.87]	-0.103 [0.46]	-0.056 [0.23]
slovakia	-0.292 [2.26]**	-0.008 [0.01]	0.12 [0.20]	0.657 [3.23]***	0.743 [3.46]***
slovenia	1.06 [10.31]***	0.441 [0.79]	0.449 [0.79]	0.479 [2.13]**	0.672 [2.95]***
croatia	1.027 [15.48]***	0.918 [0.83]	1.034 [0.94]	0.414 [2.60]***	0.522 [3.12]***
canada	0.838 [8.43]***	-0.011 [0.02]	-0.118 [0.19]	0.45 [3.12]***	0.607 [4.35]***
mexico	-0.414 [4.83]***	-0.197 [0.22]	-0.124 [0.14]	-0.761 [4.73]***	-0.878 [5.56]***
us	1.813 [15.99]***	1.166 [2.16]**	1.091 [1.96]*	0.832 [5.04]***	0.915 [5.42]***

Yi (partner)	0.944	1.009	2.267	1.966	1.594
	[53.60]***	[18.48]***	[7.69]***	[4.79]***	[3.80]***
Yj (reporting)	1.004	1.032	1.832	1.128	1.243
	[115.32]***	[38.14]***	[11.62]***	[5.63]***	[5.78]***
K/Li (partner)	0.797	0.916	0.602	0.867	1.06
	[32.35]***	[12.05]***	[2.55]**	[2.75]***	[3.24]***
K/Lj (reporting)	0.371	0.162	-0.974	-0.291	-0.349
	[22.73]***	[3.79]***	[6.62]***	[1.54]	[1.70]*
DISTANCEij	-1.227	-1.211		-1.492	-1.533
	[57.95]***	[17.60]***		[31.28]***	[32.45]***
COLONYij	1.229	1.592		0.687	0.651
	[17.54]***	[3.99]***		[8.12]***	[7.75]***
COLONIZERij	0.767	0.537		0.451	0.515
	[11.91]***	[3.09]***		[6.16]***	[6.81]***
ARABICij	0.666	0.822		0.91	0.834
	[13.87]***	[5.63]***		[12.97]***	[11.62]***
TURKISHij	-0.08	0.078		-0.807	-0.405
	[0.23]	[0.05]		[2.16]**	[1.67]*
CONTIGUITYij	-0.314	-0.272		-0.037	-0.029
	[2.36]**	[0.70]		[0.25]	[0.20]
Constant	-40.728	-42.944	-90.601	-61.245	-55.98
	[73.09]***	[26.35]***	[13.97]***	[7.12]***	[6.32]***
Observations	18839	18839	18839	18839	16635
R-squared	0.61	0.59	0.15	0.69	0.69
F test: time dum.	9.08	117.61	6.67	2.84	3.1
Prob > F	0	0	0	0	0

Notes: - ***, **, * significant at the 1%, 5% and 10% levels of statistical significance, respectively.

In contrast to the estimation results obtained previously for bilateral imports it turns out that the results obtained for the EU Association Agreements are not robust with respect to the choice of the estimation method. While the estimated coefficient on the indicator variable for the EU Association Agreements is positive and statistically significant when the gravity model is estimated by the simple OLS method it changes its sign and loses statistical significance when more appropriate panel techniques are employed. This result is, however, not very surprising given the fact that the liberalization of the MPC exports to the EU was a gradual process that extended over three decades and in the 1990s there was not much left to liberalize except trade in agricultural goods.

The results obtained for particular bilateral trade agreements concluded between the future members of the Agadir group are also not robust. Surprisingly, the indicator variable for the AMU is positive and statistically significant across all the specifications which suggests that this plurilateral agreement was successful in stimulating exports at least of some MPCs.³⁰ Unlike the results obtained for the AMU, our estimation results show also the impact

³⁰ This result is surprising given the fact that the Arab Maghreb Union was never fully implemented. Perhaps, our dummy variable for the Arab Maghreb Union captures some other effects common to these countries that positively affect their bilateral trade flows.

of the ACC on bilateral trade flows was not robust. A very similar result can be reported for the agreement concluded with the EFTA countries. Also the estimation results obtained for particular bilateral agreements of Israel and Turkey as well as between themselves are not robust. Out of the agreements concluded with the NAFTA countries only the agreement with the US seems to affect bilateral exports of the MPCs.

Summing up, in contrast to bilateral imports the new generation EU Association Agreements do not seem to contribute positively to the expansion of exports from the MPCs to the EU. This means that the EU countries will be the main beneficiaries of these agreements, at least in the short run, as the EU markets for industrial products have been open to the MPCs since the 1960s and the 1970s while the markets for agricultural products still remain relatively closed.

Estimates for particular MPCs

To gain a deeper insight into what drives our empirical results we split our sample into seven subsamples for particular MPCs and estimate the gravity equations for their bilateral exports and imports separately for each country using the traditional OLS method with robust standard errors.³¹ The estimation results for bilateral imports of the individual MPCs are presented in Table 4 while for bilateral exports in Table 5.

³¹ Unfortunately, in the case of single country regressions it is not possible to use panel data estimation techniques as the indicator variables are then collinear with the country-pair specific fixed effects.

**Table 4. The estimates for bilateral imports of the MPCs
(single countries)**
[robust t-statistics]

Explanatory variables	Algeria	Morocco	Tunisia	Israel	Jordan	Turkey	Egypt
EU-Association Agreement		0.563 [4.73]***	0.819 [7.37]***	0.724 [4.29]***	0.46 [2.42]**	0.03 [0.31]	-0.183 [0.71]
EFTA		-0.043 [0.27]		0.888 [4.55]***	-0.889 [1.18]	-0.245 [1.81]*	
AMU	0.132 [0.32]	-0.486 [1.56]	0.624 [2.68]***				
ACC					-0.013 [0.04]		1.017 [3.65]***
jordanmorocco		0.689 [3.74]***			1.019 [4.46]***		
moroccotunisia		0.358 [1.13]	-0.094 [0.40]				
egypttunisia			0.515 [3.52]***				0.292 [1.79]*
egyptjordan					0.338 [1.10]		0.801 [4.56]***
egyptmorocco		0.624 [2.46]**					0.229 [1.16]
jordantunisia			1.994 [12.35]***		-0.101 [0.41]		
moroccouae		1.464 [4.51]***					
jordanlebanon					1.08 [1.77]*		
egyptsyria							0.174 [0.81]
jordansudan					0.534 [2.20]**		
jordansyria					1.499 [4.79]***		
jordanbahrain					0.691 [2.54]**		
jordanuae					1.011 [5.10]***		
israelturkey				1.858 [8.91]***		-0.193 [1.34]	
bulgaria				1.875 [9.44]***		0.97 [5.42]***	
czech				0.046 [0.28]		-0.509 [2.37]**	
estonia						-0.174 [0.80]	
hungary				0.479 [2.66]***		-0.511 [2.93]***	
latvia						-2.072 [5.88]***	
lithuania						0.805 [6.30]***	
poland				-0.757 [4.19]***		-1.037 [5.08]***	
romania				1.468 [7.31]***		-0.098 [0.60]	
slovakia				-0.422 [2.00]**		-0.51 [2.10]**	
slovenia				0.463 [2.56]**		0.036 [0.29]	
croatia						-1.233 [5.26]***	
canada				-0.563 [3.44]***			
mexico		-0.717 [6.32]***					
us				-0.524	-0.304		

Yi (partner)	1.149	1.168	1.166	[3.67]***	[1.83]*	1.144	1.182
	[44.52]***	[51.44]***	[56.40]***	[44.80]***	[46.40]***	[54.63]***	[50.40]***
Yj (reporting)		-0.309	-1.072	-0.684	-1.156	1.263	-0.368
		[0.89]	[3.88]***	[1.82]*	[3.35]***	[4.05]***	[1.12]
K/Li (partner)	0.706	0.488	0.501	1.052	0.586	0.629	0.691
	[14.47]***	[11.26]***	[11.73]***	[20.82]***	[14.01]***	[15.68]***	[16.57]***
K/Lj (reporting)							
DISTANCEij	-0.752	-0.846	-1.014	-0.626	-0.799	-1.235	-0.958
	[13.49]***	[15.69]***	[21.26]***	[9.88]***	[14.96]***	[27.10]***	[16.42]***
COLONYij	1.795	1.488	1.155	-0.113	1.14		
	[10.31]***	[8.47]***	[7.43]***	[0.66]	[10.24]***		
COLONIZERij	1.617	0.89	0.9	0.083	0.515	-1.032	0.991
	[11.15]***	[6.14]***	[8.24]***	[0.59]	[5.80]***	[7.93]***	[6.18]***
ARABICij	-0.153	0.534	0.919	0.496	0.751		0.386
	[1.22]	[4.23]***	[8.18]***	[3.68]***	[4.74]***		[3.03]***
TURKISHij						-0.782	
						[2.46]**	
CONTIGUITYij	0.294	-0.971	-1.379	-0.095	0.393	1.112	-0.439
	[0.78]	[1.86]*	[5.63]***	[0.18]	[1.26]	[7.39]***	[1.55]
Constant	-19.743	-10.454	8.781	-7.414	7.476	-47.58	-9.113
	[21.59]***	[1.21]	[1.28]	[0.77]	[0.92]	[5.72]***	[1.06]
Observations	2597	2779	2730	2402	2351	2936	2782
R-squared	0.62	0.64	0.68	0.69	0.64	0.72	0.64
F test: time dum.	4.05	1.24	0.46	0.91	1.03	1.77	1.39
Prob > F	0.00	0.20	0.99	0.59	0.42	0.01	0.10

Notes: - ***, **, * significant at the 1%, 5% and 10% levels of statistical significance, respectively.

We find that not all the MPCs were able to benefit equally from the EU Association Agreements. In the case of bilateral imports we obtain positive and statistically significant coefficients of the indicator variables for the EU Association Agreements only for Israel, Jordan, Morocco and Tunisia, and in the case of bilateral exports only for Tunisia. The results obtained for bilateral trade agreements concluded between the future members of the Agadir group were not robust.

In particular, when we looked at their bilateral imports it turned out that the only bilateral agreement that stimulated imports of both countries was the agreement concluded between Jordan and Morocco. However, when we looked at bilateral exports it turned out that this agreement was effective only for Morocco and Jordan's exports to Morocco did not increase as the previous set of estimates might suggest. Similarly, the results obtained for the agreement concluded between Jordan and Tunisia suggest that it was effective in stimulating exports of both countries while when we looked at the results obtained for bilateral imports it turned out that this agreement was effective only in stimulating exports from Tunisia to Jordan.

Table 5. The estimates for bilateral exports of the MPCs (single countries)

[robust t-statistics]

Explanatory variables	Algeria	Morocco	Tunisia	Israel	Jordan	Turkey	Egypt
EU-Association Agreement		-0.021 [0.15]	0.777 [5.99]***	0.08 [0.70]	0.121 [0.58]	-0.664 [6.83]***	-0.435 [1.07]
EFTA		-0.001 [0.00]		0.132 [0.96]	-1.959 [3.84]***	-0.73 [8.34]***	
AMU	2.671 [6.44]***	1.435 [4.74]***	0.56 [3.15]***				
ACC					-0.655 [2.05]**		0.77 [4.10]***
jordanmorocco		1.881 [10.34]***			-0.601 [2.79]***		
moroccotunisia		-2.004 [6.45]***	0.014 [0.07]				
egypttunisia			0.304 [1.71]*				0.292 [1.71]*
egyptjordan					-1.005 [4.97]***		0.114 [0.55]
egyptmorocco		-0.463 [2.57]**					1.077 [6.18]***
jordantunisia			0.983 [4.99]***		0.663 [3.75]***		
moroccouae		0.258 [1.64]					
jordanlebanon					1.159 [2.66]***		
egyptsyria							-0.251 [1.62]
jordansudan					-0.032 [0.15]		
jordansyria					0.268 [1.05]		
jordanbahrain					0.949 [3.53]***		
jordanuae					0.996 [4.75]***		
israelturkey				0.913 [6.18]***		-0.425 [4.22]***	
bulgaria				0.466 [3.62]***		-1.122 [6.32]***	
czech				-0.204 [1.88]*		-1.504 [12.91]***	
estonia						-0.607 [6.24]***	
hungary				0.234 [2.03]**		-1.627 [14.45]***	
latvia						-0.965 [12.93]***	
lithuania						-0.984 [8.80]***	
poland				-0.15 [1.28]		-1.303 [8.59]***	
romania				1.069 [7.58]***		-1.734 [12.77]***	
slovakia				-0.466 [3.84]***		-2.007 [12.58]***	
slovenia				1.004 [5.81]***		-0.934 [8.73]***	
croatia						-1.119 [11.02]***	
canada				-0.934 [7.07]***			
mexico				-0.562 [4.95]***			
us				-0.354	2.537		

Yi (partner)		0.077	0.192	[2.93]***	[14.36]***	2.699	0.683
		[0.24]	[0.65]	[0.02]	[2.58]***	[12.82]***	[2.40]**
Yj (reporting)	1.04	1.079	0.926	1.109	1.178	0.936	1.024
	[26.93]***	[53.69]***	[38.76]***	[52.22]***	[44.83]***	[65.45]***	[49.87]***
K/Li (partner)							
K/Lj (reporting)	0.58	0.362	0.345	0.625	0.035	0.466	0.411
	[8.20]***	[9.78]***	[8.25]***	[15.69]***	[0.77]	[15.71]***	[11.98]***
DISTANCEij	-1.407	-1.464	-1.486	-0.42	-0.846	-1.628	-1.512
	[16.81]***	[27.34]***	[28.41]***	[7.95]***	[13.95]***	[40.12]***	[29.18]***
COLONYij	0.768	1.484	0.957	-0.282	1.811		
	[2.85]***	[10.58]***	[7.33]***	[1.88]*	[17.69]***		
COLONIZERij	2.7	0.889	1.457	-0.328	0.97	-0.123	0.834
	[11.88]***	[7.19]***	[15.57]***	[2.73]***	[6.86]***	[0.78]	[5.80]***
ARABICij	-0.76	0.847	0.9	0.871	2.271		1.145
	[4.06]***	[7.92]***	[9.20]***	[7.44]***	[15.33]***		[10.78]***
TURKISHij						-0.144	
						[0.43]	
CONTIGUITYij	0.813	-5.125	-1.021	-0.375	0.651	0.397	0.434
	[2.22]**	[8.15]***	[5.17]***	[1.16]	[2.42]**	[2.32]**	[2.00]**
Constant	-11.601	-11.998	-11.634	-20.366	-41.864	-75.803	-26.137
	[8.44]***	[1.52]	[1.59]	[3.32]***	[4.32]***	[13.39]***	[3.53]***
Observations	2068	2904	2593	2891	2272	3194	2917
R-squared	0.52	0.64	0.62	0.73	0.6	0.78	0.67
F test: time dum.	3.87	1.54	1.3	1.16	1.68	1.35	1.64
Prob > F	0.00	0.05	0.15	0.27	0.02	0.12	0.03

Notes: - ***, **, * significant at the 1%, 5% and 10% levels of statistical significance, respectively.

Summing up, these empirical results generally support the commonly made claims that trade liberalization among the MPCs in the form of bilateral trade agreements that preceded the Agadir Agreement was insufficient and its effectiveness can be called into question. Nevertheless, we were able to demonstrate that they allowed at least some MPCs to increase their bilateral trade flows.

Concluding remarks

In this paper we have studied the effectiveness of the EU-sponsored trade liberalization in the Mediterranean Partner Countries. We have found that while trade liberalization with the EU in the form of new Association Agreements was on average effective in raising bilateral imports of the MPCs from the EU at the same time they did not contribute positively to the expansion of their exports to the EU. This suggests that the EU member states will be the main beneficiaries of the EUROMED, at least in the short run, due to the opening of the MPC markets to industrial products from the EU. The effects of the Euro-Mediterranean

Agreements on the third countries are not clear and deserve closer attention in future empirical studies.³²

Unfortunately, the Association Agreements so far did not bring any significant progress in the field of trade liberalization in agricultural goods where a strong trade potential still exists. Moreover, the EU still subsidizes its agricultural sector through the CAP which effectively counterbalances comparative advantage of the MPCs and prevents their agricultural goods from competing on an even playing field in the EU markets. All these severely restrict the inflow of the MPC exports of agricultural goods into the EU. Therefore, if the Association Agreements are to exert a symmetric impact on bilateral trade flows between the EU and the MPCs the EU should make its markets more open to agricultural imports from the MPCs.

Another important issue is that vertical “hub and spoke” trade liberalization between the EU and the MPCs in the form of Association Agreements if not complemented by horizontal trade liberalization among the MPCs themselves might have adverse effects for the location and development of their industrial activity leading to increased unemployment in these countries as suggested by some new economic geography models.³³ Therefore, future empirical studies should address this important issue by looking at the impact of asymmetric trade liberalization on investment creation and investment diversion in the MPCs.

Moreover, while the majority of the EU Association Agreements have already entered into force horizontal trade liberalization among the MPCs is still lagging behind. Therefore, it is to be hoped that the EU Association Agreements will spur far reaching trade liberalization in the MPCs resulting in the creation of the regional FTA that would counterbalance or at least reduce the impact of “hub and spoke” trade liberalization with the EU. The Agadir Agreement is frequently seen as a stepping stone to the formation of such a regional trading agreement. However, given the delays in its implementation it is too early to evaluate its effectiveness.

³² In particular, it is not clear whether the increase in the MENA imports from the EU comes at the expense of the suppliers of manufactured goods located in other OECD countries that did not conclude free trade agreements with the MENA countries. For example, Toviás (1997) argues that a part of the increase of imports from the EU may represent trade diversion against other OECD countries.

³³ See for example Puga and Venables (1997). Although their insights turned out not to be robust with respect to model assumptions as demonstrated in Baldwin et al. (2003) the potential threat still exists.

Nevertheless, we were able to investigate the effectiveness of bilateral trade agreements concluded between the MPCs that preceded the Agadir Agreement. Our results obtained for the individual bilateral agreements concluded between particular MPCs do not support the view that these agreements are an effective way to stimulate trade in the MENA region. Therefore, future empirical studies should verify whether the Agadir Organization will be able to significantly increase trade among its member countries.

Chapter 2: Grossman-Helpman Model

In this chapter we test Grossman-Helpman model, explaining the interplay between sectoral interest groups and a government. The Polish economy as a representative of NMS. On the other hand Israel was treated as an example of MPC, being able to liberalize significantly its trade policy.

Introduction

The Grossman and Helpman (1994) model (G-H) is probably the most advanced and well known model of political economy of trade policy. It is aimed at explaining the pattern of trade policy through operation of endogenous domestic lobbies.

In the early work of Findlay and Wellisz (1984) the interplay between domestic lobbies, representing capital and land owners, was represented by the “black box” tariff formation function. In the median voter model (Mayer, 1984), trade policy was determined by majority vote. In the G-H model the governmental policy is determined by elected politicians. The government, in its decisions, takes into account the welfare of the society and the contributions of lobbies, representing various sectors of the economy.

In the first part of the chapter we present an empirical study of the endogenous tariff policy formation in Poland in mid 1990's. The selection of the period is not accidental. As we argue, trade policy was still autonomous in the early 1990s, but flexibility in tariff formation slowly decreased in the late 1990s, when Europe Agreement and WTO Uruguay Round duty reduction commitments were gradually implemented. We also believe that tariffs, similarly to the original G-H model, better reflect the pattern of protection, in comparison to non-tariff measures.

Our results are in line with the predictions of the Grossman-Helpman (G-H) model. Majority of our regressions support the theory and we find support for the significance of lobbies in formation of trade policy in Poland. The G-H model seems to work much better in the case of MFN than for preferential tariffs. There is some anecdotal evidence that lobbies managed to influence Polish trade policy several times, and this evidence is confirmed in our calculations.

The importance of the lobbies is, however, significantly lower than in the case of the United States.

In the second part of the chapter we made an attempt to test empirically the Grossman-Helpman model for Israel. We applied almost the same specification of the model to that used for Poland. But, in this case we faced some serious problems, resulting probably from limited availability of statistical data. Poor performance of the G-H model in the case of Israel will be interpreted in the final section of the chapter.

We present stylized facts on Israeli trade policy. We discuss recent unilateral liberalization of MFN tariffs and scope of free trade areas signed by Israel. Their impact on Israeli trade flows was presented in the section 1.2. of the report. We also discuss some specific non-tariff measures (NTM) applied by the government and non-governmental organizations. Special attention is devoted to sectoral policies in agriculture, textiles and high-tech industries.

The core estimation equation of the Grossman-Helpman model requires that the inverse import penetration ratio is used as an explanatory variable, that is clearly endogeneous. The original modelling framework applied by Goldberg-Maggi (1999) uses instrumental variables to overcome that problem. However, it was impossible to get a robust estimate of the predicted import penetration ratio for Israel. The problems stemmed mainly from the lack of sectoral data on capital stock required to predict import penetration in a Heckscher-Ohlin, factor-intensity fashion. Nevertheless, an attempt has been made to estimate the model neglecting the endogeneity problem.

The chapter is organized as follows. We start with the presentation of the Grossman-Helpman model and proceed with the description of empirical studies made on this subject. Two sections regarding Poland and Israel follow, each comprising the review of the trade policy of the relevant country, brief discussion of the estimation technique and the presentation of the empirical results.

The “Protection for Sale” model

The formal G-H model, in a somewhat simplified version by Goldberg and Maggi (1999) and Feenstra (2004), can be described as follows. There is a continuum of individuals (consumers), with identical preferences of quasi-linear utility (increasing & strictly concave)

function (U), given by: $c_0 + \sum_{i=1}^N u_i(c_i)$ where: c_0 is a *numeraire* export good and c_i denotes the consumption vector of all other goods ($h=1, \dots, n$). Assuming that I is the budget constraint of a representative consumer, and $d_i(p_i)$ is per capita consumption of each good, then remaining income is spent on the *numeraire* good, i.e. $c_0 = I - p'd(p)$; where: $p = (p_1, p_2, \dots, p_N)$ is the vector of domestic prices. Each consumer maximizes utility subject to budget constraint: $c_0 + p'c \leq I$. Therefore, the individual utility is given by:

$$V(p, I) \equiv I - p'd(p) + \sum_{i=1}^N u_i[d_i(p_i)]. \quad \text{Denoting consumer surplus as:}$$

$$S(p) \equiv \sum_{i=1}^N u_i[d_i(p_i)] - p'd(p) \quad \text{we can rewrite the representative consumer welfare as:}$$

$$V(p, I) \equiv I + S(p).$$

On the production side there are N industries with sector specific (capital) inputs and labour. The total supply of labour has measure one. The *numeraire* good is produced with one unit of labour that the wage is equal to one. Each other good is produced from labour and factor specific input. The supply function of good i is denoted by $y_i(p_i)$. The returns to factor specific input i are equal to $\pi_i(p_i)$ and therefore by Hotelling's lemma $\pi_i'(p_i) = y_i(p_i)$.

We analyze a small economy in which the international prices of goods are fixed at p_i^* . Each of N industries receives a specific tariff t_i^s , where $t_i^s > 0$ indicates a tariff in an import industry or a subsidy in an export industry. Obviously $t_i^s < 0$ means a subsidy in an import industry or a tariff in export industry. The tariff introduces a wedge between domestic and international price: $p_i = p_i^* + t_i^s$. Defining imports of each of i industry as: $m_i(p_i) = d_i(p_i) - y_i(p_i)$ (which are negative if there are exports), we can denote tariff revenue

collected as $T(p) = \sum_{i=1}^N (p_i - p_i^*) m_i(p_i)$. The revenue is distributed by a pool subsidy of to all

individuals. Then, summing up labour income, returns to specific factors and tax revenue we

$$\text{get the total social welfare: } W(p) = \sum_{i=1}^N W_i(p) = 1 + \sum_{i=1}^N \pi_i(p_i) + \sum_{i=1}^N t_i^s m_i + \sum_{i=1}^N S_i.$$

Let us describe the role of lobbies in the economy. Each individual owns a unit of labour and at most one unit of specific factor. Some owners of specific factors form a lobby, so there is a subset $L \in \{1, 2, \dots, n\}$ of industries organized into lobbies. Let us denote α_i the fraction of people who own specific factor i . The purpose of each lobby i is to provide contributions (C_i) to the government in return for influencing the tariff/subsidy in sector i . The summing up of all indirect utilities of all individuals who belong to lobby i , and rearranging it, we get the welfare of lobby i equal to: $W_i = \pi_i + \alpha_i \left(1 + \sum_{j=1}^n t_j m_j^s + \sum_{j=1}^n S_j \right)$. Therefore, the lobby's objective is to maximize: $W_i - C_i$. On the other hand the objective of the government is to maximize a combination of social welfare and contributions received: $G = \beta W(p) + (1 - \beta) \sum_{i \in L} C_i$, where $\beta \in [0, 1]$ captures the weight of welfare in government's objective.

Assuming that the interaction between lobbies and government takes the form of either "menu auction" or a Nash bargaining solution, the joint surplus of the society and lobbies can be written as: $\Omega = \beta W(p) + (1 - \beta) \sum_{j \in L} W_j$. Taking into account the definition of $W(p)$ we can rewrite Ω as: $\Omega = \beta + (1 - \beta) \alpha_L + \sum_{i=1}^n [\beta + (1 - \beta) I_i] \pi_i + \sum_{i=1}^n [\beta + (1 - \beta) \alpha_L] (t_i m_i + s_i)$.

Where $\alpha_L \equiv \sum_{i \in L} \alpha_i$ represents the share of population that owns some specific factor, and I_i is a dummy that takes value one if $i \in L$ and zero otherwise.

The first order condition for Ω maximization over tariffs t_i^s (and domestic prices) yields the following result:

$$t_i^s = \frac{I_i - \alpha_i}{\frac{\beta}{1 - \beta} + \alpha_L} \cdot \frac{x_i}{-m_i} \quad (1)$$

Where x_i is the output of good i . The equation (1) can also be expressed in terms of import penetration and import elasticity as follows:

$$\frac{t_i}{1+t_i} = \frac{I_i - \alpha_i}{\frac{\beta}{1-\beta} + \alpha_L} \cdot \frac{x_i}{m_i e_i}, \quad (2)$$

where t_i is the *ad valorem* tariff, and e_i is the import demand elasticity for good i .

The main conclusion from the model indicates that for organized sectors the level of protection increases with x_i/m_i (inverse of import penetration), since $\alpha_L/(\beta/1-\beta) + \alpha_L > 0$. In other words, if domestic output (in relation to imports) is larger, then the owners of the specific factors have more to gain from increased protection. Also, sectors with higher price elasticity should be less protected. This is because the deadweight loss is larger with higher import demand elasticity.

Review of empirical studies

Maggi and Goldberg (1994), in their seminal paper, present a modified version of the Grossman and Helpman model, that yields the same predictions but provides an estimable equation. In their model, the objective function of the tariff setting government is dependent on the welfare of the society (with weight β) and the contributions paid to the government (with weight $1-\beta$). Maximization of the objective function yields the following equation:

$$\frac{t_i}{1+t_i} e_i = \frac{I_i - \alpha_L}{\frac{\beta}{1-\beta} + \alpha_L} \cdot \frac{x_i}{m_i} + \varepsilon_i = \gamma \frac{x_i}{m_i} + \delta \mathcal{I} \frac{x_i}{m_i} + \varepsilon_i, \quad (3)$$

where t_i is the tariff level, e_i is the elasticity of demand, x_i/m_i is the import penetration ratio, I_i is a dummy variable that takes a value of one if an industry is organized and ε_i is an error term. This specification allows recovery of the structural parameters of the Grossman and Helpman model since $\gamma = [-\alpha_L/(\beta/1-\beta) + \alpha_L]$ and $\delta = [1/(\beta/1-\beta) + \alpha_L]$. The (α_L) denotes a fraction of the population represented by a lobby, and (β) the weight of the society welfare in the government objective function; thus allowing to assess the impact of lobbies in the tariff setting process.

The construction of political organization dummy (I_i) in the Goldberg-Maggi paper is based on political action committee (PAC) campaign contributions for 1981-82 and 1983-84 congressional elections. A threshold level of \$100 million was applied. The industries providing contributions above that level were treated as being organized.³⁴ The main problem with empirical verification involves the possible endogeneity of import penetration ratios. The other practical difficulty is the question of correct identification of organized sectors. Therefore, Goldberg and Maggi (1994) use two auxiliary regressions to predict both import penetration ratios and political organization dummies.³⁵

The results of empirical work by Goldberg and Maggi are encouraging. The basic specification estimated value of $\gamma=-0.0093$ and that of $\delta=0.0106$ are broadly in line with predictions of G-H model. The implied values of β equals 0.986, which means that the consumer welfare is almost 100 times higher in the government's objective function than the political contributions. In the other specification β equals 0.981 (but is statistically smaller than one), which is only slightly less optimistic.

There are several other empirical studies based on the idea developed by Grossman and Helpman. The study prepared by Grether, De Melo and Olarrega (2002) referred to political economy of trade policy in Mexico. Other work by Mitra, Thomkos, Ulubasoglu (2002) analyzed pattern of protection in Turkey and McCalman (2004) studied determinants of protection in Australia. Finally Tavares (2003a) analyzed the determinants of common external tariff in the European Union.

The major problem in most studies is the lack of data on political action committee campaign contributions, which could serve as the proxy for a sectoral political organization. This sort of data is unavailable in countries other than U.S. In some cases (e.g. McCalman) the political organization variable was estimated using a probit model. In the same study a set of instruments were divided into two groups in each sector: those that affect the probability of being politically organized, and those that account for comparative advantage, having possible impact on import penetration.

³⁴ In fact, there was an additional equation in the model of Goldberg and Maggi (1999), related to the level of non-tariff protection.

³⁵ Indeed, in the original model, an industry paying a contributions shall be treated as organized. It was impossible to apply this concept directly since all industries pay some contributions.

Probably the most extensive list of industry-specific variables was compiled by Tavares (2003a), largely inspired by the work of Grether, De Melo and Olarreaga (2001). Tavares was aiming at explaining the pattern of tariff protection in the European Union. The other large set of variables was proposed by McCalman (2004).

The specification of variables used in empirical studies can be, somewhat arbitrary, grouped into two broad categories of industry characteristics, having impact on political organization and import penetration.

Generally the variables affecting the probability that the sector is **politically organized** that are used in the literature can be classified into two groups. The first group contains industry specific institutional variables. These include, first of all, political action committee campaign contributions made during congressional elections (higher contribution reflects better organization of the lobby) used by Goldberg and Maggi (1999). Some authors instead used the degree of unionization variable, assuming that the higher level of workers' participation in trade unions (significant shares of employment) the more there will be protection (Mitra, Thomakos, Ulubasoglu (2002) and Grether, De Melo, Olarreaga (2001)). Alternatively, it is possible to use variables describing the institutional impact of region specific chambers and associations. Grether, De Melo, Olarreaga (2001), assume that if firms in a given industry are spread across the country, then their influence on the government's decision-making process is stronger as they exert their influence through different (more numerous) associations.

The second group of variables is related to the market structure that may affect the ability of a sector to organize itself. These include the number of firms in the industry (smaller number of firms alleviates the free rider problem in coordinating a lobby, thus increasing the level of protection, variable used by Tavares, 2003a and McCalman, 2004) and industry concentration (eg. Herfindahl index, used by Grether, De Melo, Olarreaga, 2001 and McCalman, 2004). Grether, De Melo, Olarreaga (2001) and McCalman (2004) employ also a measure of the employment share of a sector in a given country's total employment. They claim that the larger the industry seeking protection, the greater is the incentive to join in the tariff-setting process. Grether, De Melo, Olarreaga (2001) also claim that the tariff level may be higher in sectors with large shares of FDI because owners of foreign capital may have access to a better lobbying technology. Probably multinational companies have a larger experience of lobbying in different countries which they can adapt to the host government. Also,

governments may be more sensitive to FDI interests than to the interests of nationals. This can also result from the fact that foreign companies may be more credible in the lobbying game than domestic producers.

Moreover, some authors claim that declining industries (those with large increases in import penetration) tend to obtain more protection, to reduce adjustment costs (Grether, De Melo, Olarreaga, 2001, Hillman, 1982, or Brainard and Verdier, 1994). In a dynamic context, the compensation effect predicts that slow-growing industries will lobby more as the opportunity cost of lobbying will be lower.

To avoid the endogeneity of the inverse import penetration ratio, most authors have used instrumental variables. These include factor intensity characteristics, such as labour intensity (Grether, De Melo, Olarreaga, 2001), wage per worker (Trefler, 1993 and McCalman, 2004), capital-labour ratio (Grether, De Melo, Olarreaga, 2001 and McCalman, 2004) or human capital-labour ratio (McCalman, 2004).

The large number of variables used reflects difficulties in finding suitable measures and limited availability of some statistical data in analyzed countries. In our empirical part we will concentrate only on some of those variables, which are available for Poland.

Testing Grossman-Helpman Model for Poland

Some stylized facts on Polish trade policy

The opening up of the Polish economy was an important element in the process of economic transformation. Trade liberalization started in January 1990 when the zloty became convertible and almost all-domestic prices were released from administrative control. Majority of non-tariff measures were eliminated at that time. The new customs code, introduced in January of 1990, was compatible with international norms. The tariff description, the rules of customs' valuation, and the anti-dumping procedures were in line with the GATT articles. The average level of tariffs was 8.9 per cent *ad valorem* in the

beginning of 1990. But the tariff structure was not fully adapted to requirements of the market economy, and was somewhat arbitrary.

At that time Poland's tariffs were not subject to the discipline of the GATT and the government enjoyed a great deal of freedom when shaping the tariff structure. Poland had no legal constraint in the form of "bound" tariff schedule, although it was a GATT member since 1967. As a former communist country, it had a unique reciprocity formula in the Protocol of accession to GATT. In exchange for the MFN status among GATT members, Poland committed itself to increase the value of its imports from the members of GATT by at least seven percent annually. This commitment became impossible to fulfil by the mid 1970's. But formally nothing has been changed until the creation of the WTO in 1994. Therefore tariff changes were feasible in the beginning of 1990s.³⁶

On August 1, 1991, the new tariff schedule came into force. The new schedule adopted the commodity nomenclature applied by the European Community (EC). Average nominal (unweighted) customs rates calculated on the basis of MFN were raised from 11.65 to 17.02.³⁷ Such changes were feasible since Polish tariffs were unbound in the GATT.

"The increase was motivated by the need to increase fiscal revenues, and by the desire to afford a degree of protection to Polish producers competing with imports." "Sensitive" agricultural goods, such as butter and meat, automobiles and electronics." were among products that had been granted particularly high protection.³⁸ However, the notion of a sensitive product was not clearly defined at that time. The government administration had limited knowledge of what the reasonable tariff pattern should be.³⁹ On the other hand, the organized interest groups were either weak or nonexistent at that time. Therefore, in the early 1990s, the influence of domestic lobbies should not have been significant.

³⁶ Position of Poland was different from that one of Hungary or Czechoslovakia. These two countries were also GATT members under communist regime, but had standard schedules of concessions. Their tariffs were "bound" at the beginning of economic transition.

³⁷ When duty suspensions were also taken into consideration the average level was raised from 5.82 to 16.83 per cent Poland's Foreign Trade Policy 1993-1994 (1994), p. 63.

³⁸ Kierzkowski, Okolski, Wellisz (1993), p. 56.

³⁹ The opinion expressed by professor Stanislaw Wellisz, who acted, in the beginning of 1990's, as an economic adviser to Polish government.

The preferential tariff liberalization started in 1994. In 1991, Poland signed the Europe Agreement (EA) with the EC.⁴⁰ The commercial part of the EA came into force by 1992. The EC and Poland started to create a free trade area (FTA) for non-agricultural products since March 1994 over a maximum period of ten years. The FTA did not apply to agricultural products. As far as the European Union's (EU) imports are concerned, the liberalization process has taken five years and was completed by the end of 1997. The timetable of tariff liberalization of Polish imports was more extended in time. Majority of reductions for other industrial products (43% of Polish imports in 1993) was implemented in equal steps from 1995 until 1999. The liberalization of tariffs on cars and other motor vehicles was postponed till 2002.

The EA contained some safeguard clauses. The most important is probably the so-called Restructuring Clause (art. 28 of EA) which could have been applied only by Polish side in the form of temporarily increased import duties. "These measures may only concern infant industries, or certain sectors undergoing restructuring or facing serious difficulties, particularly where these difficulties produce important social problems."

Poland signed a similar free trade agreement with EFTA **countries** (Austria, Finland, Island, Liechtenstein, Norway, Switzerland, Sweden). The agreement covered mainly trade in non-agricultural products. EFTA members eliminated most import duties in 1993. Poland gradually liberalized its tariffs and quantitative restrictions on EFTA imports by 1999 (except for steel, petroleum products, and automobiles).

Poland, along with the Czech Republic, Hungary and the Slovak Republic, established the CEFTA (Central European Free Trade Area) in 1992. Afterwards, Slovenia 1996, Romania and Bulgaria joined the CEFTA. The CEFTA Agreement established a free-trade area by 2001. CEFTA covered all goods, except for a few agricultural products. Thus, by the end of 1990s, almost all Polish duties on non-agricultural imports from majority of European countries have been eliminated. The share of these countries exceeded 65% of Poland's total imports.

⁴⁰ Europe Agreement (1994).

The non-preferential (MFN, conventional) liberalization of Poland's trade policy towards non-European countries started in 1995. The country took part in the GATT Uruguay Round as the only state having the formal status of a developed country without any "bound" customs duties. After submitting its initial offer on tariff concessions, Poland took part in bilateral negotiations with several countries. The main Poland's commitments in the Uruguay Round concerning merchandise trade were to bind 94% of its duties and to reduce tariffs by 38% on industrial products and by 36% on agricultural goods over a period of six years.⁴¹ The simple average bound MFN Polish tariff rate for non-agricultural products was gradually reduced from 16.73 to 9.89 per cent. Thus, in 1995 Poland's special terms of accession to the GATT became irrelevant.

The tariff structure was determined, almost from scratch, in early 1990s by governmental decisions and it seems that the interest groups probably did not have very strong influence on the process. The organizations of producers (chambers) were just being established. However, the trade unions were quite powerful. Afterwards the level of import duties was gradually reduced over next years. The scope of reductions was quite impressive in the case of preferential duties. Yet, it is possible to show some anecdotal evidence that the tariff changes were influenced by lobbies' pressure.

In January 1992, shortly after signing the Europe Agreement, Poland raised MFN customs duties for motor vehicles from 15 to 35 percent. At the same time the duty free quota (for 30000 vehicles) for automobile imports from the EU was granted. These trade policy changes were in coincidence with large FDI of the leading European motor car company in Poland.⁴² India challenged these measures in GATT in November 1994 under Article I (MFN clause) and XXIV (formation of FTA). Consultations took place in order to find a solution satisfying both parties.⁴³ At the end Poland compromised, and agreed to open a temporary (two-year) tariff quota for small passenger cars originating in developing countries. Such a solution allowed for a formal settlement of the trade dispute on the WTO forum.

⁴¹ Trade Policy Review Poland, Report by the Secretariat, 2000, p.24.

⁴² According to Grether, De Melo, Olarreaga (2001) FDI had an impact on the pattern of tariff structure in Mexico.

⁴³ WTO Document: WT/DS/19/2, dated 11 September 1996.

The other notable examples of changes in trade policy in the second half of 1990's involve the application of restructuring clauses by Poland.⁴⁴ In 1994, for the first time, the clause was applied to imported telecommunication equipment from the EU members. According to the government, the decision resulted from the necessity to restore the profitability of telecommunication equipment manufacturing in Poland that was heavily dependent on imported components. The restructuring clause was also used in 1996 to oil-refining products. Poland extended the period of reducing customs duties on oil-refining products until 2001 (according to the original timetable, customs duties were to be brought down to 0 at the beginning of 1999).⁴⁵ The restructuring clause, was applied for the third time, in 1997. Poland decided then to maintain tariffs at 9% in order to protect its restructuring of steel industry, despite the time-table of liberalization under Europe Agreement. One can reasonably argue that the application of restructuring clauses resulted from efficient lobbying, since this was almost explicitly foreseen by article 28 of the Europe Agreement.

The third and the most spectacular case involves the application of various import-reducing measures applied to imported gelatine. The main lobbyist was Mr. K. Grabek, the owner of three out of four factories producing gelatine in Poland and the sixth richest individual in Poland in 1999. He managed to get support from press and many influential politicians. Due to his lobbying, the sanitary norm for gelatine became more restrictive in 1993, the variables levies were introduced in 1995, and import duties were increased (from 15 to 56 per cent) in 1995. Finally, a total import ban on gelatine was imposed in 1998, under the claim that imported gelatine - if produced from bones of animals suffering from mad-cow disease - can be a public health hazard.⁴⁶

What was therefore the role of lobbying in early 1990's? According to sociological questionnaire surveys made in 1993, the role of lobbies in Polish Parliament was quite important. The Members of the Parliament believed that the second task of the MP is to represent interest groups (11.1 percent of replies), and third to "organize the economy" (10.5 per cent of replies). On the other hand they believed that the organized interest groups did

⁴⁴ Michalek (2005).

⁴⁵ Poland's Foreign Trade Policy, 1995-1996, p.58-59.

⁴⁶ Jasiiecki, Moleda-Zdziech and Kurczewska (2000), p. 99-101.

have important impact on political decisions taken by other MPs (13 percent of replies).⁴⁷ The objective of this paper is to trace the impact of organized groups on Poland's government objectives using the methodology from Goldberg and Maggi study.

Estimation technique and data

In our study we adopt a modified version of the empirical specification proposed by Goldberg and Maggi. In the original paper, the authors estimate equation (3) in a maximum likelihood framework. Since both variables, inverse import penetration and industry organisation dummy may be affected by the level of tariffs, there might be an endogeneity problem. This is resolved by using instruments for both variables in question.

The endogeneity problem is more severe in the case of inverse import penetration, which may be heavily affected by the tariff on the left hand-side of the equation (3). Also, what the Grossman and Helpman model cares about is trade flows that stem from the Heckscher-Ohlin type of comparative advantage. In the first stage model we construct the inverse import penetration ratio in the same fashion as Maggi and Goldberg (see equation 3 further below). In order to avoid the endogeneity problem, we regress the actual inverse import penetration ratio on capital share in output, investment share in output, labour share in output, employment level and investment level. In this way we project the theoretical inverse import penetration as a reflection of comparative advantage stemming from factor endowments. Following Maggi and Goldberg, we have also estimated an alternative version of the first stage model where we also included concentration indices and the share of subsidies in output. Therefore, we estimate two versions of the first stage model with concentration and subsidies excluded (model 1) and included (model 2). The results of first stage regressions are given in the Appendix (Table 3). Including concentration and subsidies does not add to the overall fit of the first stage model.

In our case, the data on the industry contributions were unavailable, since in the 1990s there was no official way for the industry to contribute to political campaign. However, as the

⁴⁷ Wesolowski ed. (1998), p. 140 and 182.

anecdotic evidence above shows, there were cases where trade policy was changed, obviously as a result of some interest groups pressure.

In the absence of direct measures of industry contributions, we have used similar variables to those used in literature, as a proxy for industry organization. These variables include: (i) Herfindahl concentration indices, (ii) capital-labour ratio (as we may expect that capital intensive industry may have more organised lobbies), (iii) export intensity (since export industries may receive special treatment by the government) and (iv) share of government subsidies in the total value of sales.

The last variable requires some comments, since it has not been used in the other empirical studies. On one hand, subsidies could be treated as a variable equivalent to import duties, measuring the “remuneration” paid by the government to an industry in exchange for contributions. On the other hand, however, the receipt of subsidies by a given industry can reflect the level of political organization; organized sectors, where interest groups are stronger, can probably receive higher pecuniary benefits. In Poland, chambers of producers were not well organized, but trade unions were powerful, being able to influence governments’ decisions. That is why we treat unit subsidies as a measure which can explain the level of industry organization.

We therefore construct four estimated versions of the variable I (one for each of the variables listed above) in the following way: it takes the value of 1 if the variable in question for a given industry is higher than the average for the given year and it takes the value of zero otherwise. Using the proxied variable is probably less prone to the endogeneity problem as using the contributions directly (also, Maggi and Goldberg in their sensitivity study, used non-instrumented I in the regression and obtained similar results).

Thus, the full model has the following form:

$$\frac{t_i}{1+t_i} e_i = \gamma \frac{x_i}{m_i} + \delta I \frac{x_i}{m_i} + \varepsilon_i \quad (4)$$

$$\frac{x_i}{m_i} = \xi' Z_i + \mu_i \quad (5)$$

where t_i is the tariff, e_i is the elasticity of import demand, $\frac{x_i}{m_i}$ is the inverse penetration ratio,

Z_i is the vector of instruments listed above, ε_i and μ_i are error terms. In the first stage we estimate equation (5) by OLS and in the second stage include the projected inverse import penetration ratio on the right hand-side of equation (4), which we estimate by OLS. The specifications and results for both versions (model 1 and model 2) of equation (5) are given in the Table 3 of Appendix.

Data on both the conventional (MFN)⁴⁸ tariffs and preferential tariffs applied towards the EU countries⁴⁹ for Poland for most of the 1990s comes from the Foreign Trade Data Center (CIHZ). These data were prepared in 8-digit Combined Nomenclature aggregation, which we aggregate into the 3-digit NACE using a Eurostat Concordance table. We use the Polish import data from Eurostat's Comext Database as weights. The output, export, import, subsidies, capital, labour, wage data comes from Polish Central Statistical Office (GUS). Data on Herfindahl indices were calculated using the micro-level GUS data in possession of National Bank of Poland. The data on import demand elasticities were unavailable for Poland. The study often used in the literature is the Shiells, Stern and Deardorff (1986). However, since not only it provides elasticities for a different economy and period but also uses SITC 3-digit classification, we have decided to set the elasticity of import demand for all sectors at -1. Our final dataset includes data for 87 NACE rev.1.1 3-digit sectors for the period of 1996-1999.

Estimation results

We have estimated the system of equations (4) and (5) using two alternative versions of equation (5). The first stage results for both models are listed in the appendix. Since the variation of tariffs over time is rather low, we have decided not to use the fixed effects panel estimation. Instead we do a pooled OLS for all periods and for each period separately. The results of estimation in four different specifications (and model 1 as first stage regression) for

⁴⁸ Conventional tariffs are "bound" duties applied to imports from all the WTO members.

⁴⁹ Very similar tariffs were also applied to imports from EFTA and CEFTA members states.

MFN tariffs are presented in Table 1. The estimation for preferential EU duties are given in the Appendix (Tables 4 and 5).

Table 1 Estimation results using model 1 (employment excluded) as first stage

Periods	X/M	I*X/M(concentration)	Obs.	alpha	l	beta	Beta=1	p-val	
All	-0.00008	[4.97]***	0.00012	[6.26]***	348	0.61	0.99988	39.24	0.00
1996	-0.00011	[3.23]***	0.00015	[3.73]***	87	0.70	0.99985	13.91	0.00
1997	-0.00009	[2.88]***	0.00015	[3.51]***	87	0.56	0.99985	12.29	0.00
1998	-0.00006	[2.29]**	0.00010	[3.10]***	87	0.63	0.99990	9.63	0.00
1999	-0.00005	[1.99]*	0.00010	[2.73]***	87	0.54	0.99990	7.48	0.01
	X/M	I*X/M(exp. intensity)	Obs.	alpha	l	beta	Beta=1	p-val	
All	-0.00008	[3.85]***	0.00005	[2.34]**	348	1.41	0.99995	5.46	0.02
1996	-0.00010	[2.13]**	0.00004	[0.95]	87	2.23	0.99996	0.91	0.34
1997	-0.00008	[2.03]**	0.00006	[1.22]	87	1.37	0.99994	1.48	0.23
1998	-0.00007	[2.01]**	0.00006	[1.38]	87	1.26	0.99994	1.91	0.17
1999	-0.00006	[1.55]	0.00005	[1.21]	87	1.11	0.99995	1.47	0.23
	X/M	I*X/M(subsidies)	Obs.	alpha	l	beta	Beta=1	p-val	
All	-0.00007	[4.28]***	0.00009	[2.75]***	348	0.72	0.99991	7.58	0.01
1996	-0.00009	[2.64]***	0.00012	[2.13]**	87	0.77	0.99988	4.52	0.04
1997	-0.00007	[2.56]**	0.00024	[2.90]***	87	0.31	0.99976	8.41	0.00
1998	-0.00006	[2.15]**	0.00010	[2.33]**	87	0.63	0.99990	5.42	0.02
1999	-0.00004	[1.48]	0.00004	[0.69]	87	1.12	0.99996	0.47	0.49
	X/M	I*X/M(K/L)	Obs.	alpha	l	beta	Beta=1	p-val	
All	-0.00009	[6.01]***	0.00010	[4.95]***	348	0.87	0.99990	24.47	0.00
1996	-0.00010	[3.11]***	0.00007	[1.00]	87	1.48	0.99993	1.00	0.32
1997	-0.00010	[3.30]***	0.00013	[3.40]***	87	0.80	0.99987	11.56	0.00
1998	-0.00008	[3.07]***	0.00010	[3.29]***	87	0.81	0.99990	10.81	0.00
1999	-0.00007	[2.56]**	0.00010	[3.06]***	87	0.71	0.99990	9.33	0.00

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Estimation of all four specifications of industry organization gives correct (i.e. in-line in the theory) parameter estimates in most of the periods. Herfindahl index of concentration, unit subsidy level and capital-labour (K/L) ratio seem to be the best proxies for the industry organization level. As stated before, the original Grossman-Helpman model requires the following to be true: $\gamma < 0$, $\delta > 0$ and $\gamma + \delta > 0$. In most cases, we find strong support for the first two hypotheses. However, it is true in all periods only for specifications using industry concentration indices as a proxy for industry organisation. In the case of specifications using capital-labour ratios and unit subsidies, we find only limited support for the second relation. In most cases we find only weak support for the third relation (the sum of two coefficients is not statistically greater than zero).

We can recover the structural parameters of the Grossman and Helpman model. As above: $\gamma = -\alpha_L / [(\beta/1 - \beta) + \alpha_L]$ and $\delta = 1 / [(\beta/1 - \beta) + \alpha_L]$. After simple algebraic manipulation, we get: $\alpha_L = -\frac{\gamma}{\delta}$ and $\beta = \frac{1 + \gamma}{1 + \gamma + \delta}$. The calculated coefficients are listed in last two columns of Table 1. We can see that both α_L and β are in most cases within the [0,1] range. The F-test statistic given in the one but last column corresponds to the test with the null hypothesis that $\beta=1$. This hypothesis is rejected in most cases at standard significance level (except the specification using export intensity).

Results from estimations using model 2 as first stage regression are listed in Table 2 (see Appendix). Similarly, models using concentration ratios and capital-labour ratios provide satisfactory results in terms of significance and signs of the explanatory variables. All three relations stemming from theory are satisfied (only weakly in the case of third relation), in most of the cases. However, the variabilities of calculated α_L and β values are visibly larger. In some cases, α_L takes values beyond the desired threshold (especially in the case of export intensity and unit subsidies proxies).

All above estimations were performed, as already indicated, using the conventional MFN tariff rate. We have also tried to use the preferential rate applied to import from the EU as the explanatory variable. The respective regression results are listed in the appendix in tables 4 and 5. We can see that the Grossman and Helpman model finds very weak support using preferential data. Coefficients often have wrong signs and interpretation of the model is very limited. It may reflect the fact that the government's autonomy in preferential trade policy (and possible influence of lobbies) was much more limited in comparison to MFN duties. Surprisingly, contrary to the regressions using conventional tariffs, the most realistic results are obtained in the equation using unit subsidies as proxy for industry organization. It may thus be the case, that the industries that are the most active in influencing the government's pace of EU tariff reduction are also the ones that receive the largest unit subsidies.

What stems from the G-H model concerning determination of Polish trade policy? The estimated coefficients for the weight that the government attaches to social welfare (β) are close to 1 in all MFN cases under consideration. However, this estimate is statistically different from one (the test using Delta method rejects the hypothesis of equality to 1 at least

5% significance in most cases). This is a higher weight than in the original Maggi and Goldberg estimation (around 0.98). The parameter α_L suggests that a large fraction of the population (at least 50%) is represented by a lobby. What it suggests is that lobbies had a smaller influence on trade policy than in the case of the United States, but this influence was still significant. Such low parameter estimates (while significant) stems from the fact, that overall tariff level is quite low (average tariff during the period under consideration is 12 percent for MFN duties and close to 2 percent for preferential tariffs).

Conclusions

Our empirical implementation of the Grossman and Helpman model of endogenous trade policy determination deals with the problem of Polish trade policy in the late 1990s. We use the instrumental variable approach to estimate the model taking into account endogeneity of the regressors. Herfindahl index and unit subsidy level seem to be the best proxies for the industry organization level. The latter variable was used basing on the presumption that the sectors which are better organized can receive higher pecuniary benefits.

Our results are in line with the predictions of the theory. Most of our regressions support the theory and we find support for the significance of lobbies in formation of trade policy in Poland. The data seem to confirm findings from the Grossman-Helpman model much more in the case of conventional tariff than in the case of tariff on imports from the EU. There is some anecdotic evidence that lobbies had influenced Polish trade policy several times, and we believe that this evidence is confirmed in the calculations. The importance of lobbies is, however, significantly lower than in the case of the United States. The latter is in line with our expectations, given the limited period of functioning of market economy in Poland and smaller differences in ownership pattern.

Appendix

Table 2 Estimation results using model 2 (employment included) as first stage

Periods	X/M	I*X/M(concentration)	Obs.	alpha l	beta	Beta=1	p-val		
All	-0.00008	[5.15]***	0.00011	[5.80]***	348	0.70	0.99989	33.70	0.00
1996	-0.00011	[3.31]***	0.00014	[3.72]***	87	0.78	0.99986	13.81	0.00
1997	-0.00009	[2.93]***	0.00012	[2.91]***	87	0.72	0.99988	8.48	0.00
1998	-0.00007	[2.51]**	0.00010	[3.15]***	87	0.67	0.99990	9.94	0.00
1999	-0.00005	[2.01]**	0.00010	[2.65]***	87	0.56	0.99990	7.00	0.01
Periods	X/M	I*X/M(exp. intensity)	Obs.	alpha l	beta	Beta=1	p-val		
All	-0.00008	[4.61]***	0.00006	[2.85]***	348	1.35	0.99994	8.10	0.00
1996	-0.00011	[2.56]**	0.00006	[1.33]	87	1.84	0.99994	1.76	0.19
1997	-0.00009	[2.70]***	0.00007	[1.59]	87	1.34	0.99993	2.52	0.12
1998	-0.00008	[2.33]**	0.00006	[1.59]	87	1.24	0.99994	2.53	0.12
1999	-0.00006	[1.75]*	0.00005	[1.37]	87	1.10	0.99995	1.87	0.17
Periods	X/M	I*X/M(subsidies)	Obs.	alpha l	beta	Beta=1	p-val		
All	-0.00007	[4.34]***	0.00006	[2.23]**	348	1.17	0.99994	4.95	0.03
1996	-0.00009	[2.70]***	0.00007	[1.70]*	87	1.39	0.99993	2.90	0.09
1997	-0.00007	[2.48]**	0.00008	[0.73]	87	0.90	0.99992	0.53	0.47
1998	-0.00006	[2.17]**	0.00007	[2.31]**	87	0.84	0.99993	5.36	0.02
1999	-0.00004	[1.52]	0.00003	[0.59]	87	1.39	0.99997	0.35	0.56
Periods	X/M	I*X/M(K/L)	Obs.	alpha l	beta	Beta=1	p-val		
All	-0.00009	[6.00]***	0.00009	[4.16]***	348	1.01	0.99991	17.30	0.00
1996	-0.00010	[3.14]***	0.00005	[0.70]	87	1.98	0.99995	0.49	0.49
1997	-0.00010	[3.41]***	0.00011	[3.07]***	87	0.97	0.99989	9.44	0.00
1998	-0.00008	[3.01]***	0.00009	[2.88]***	87	0.93	0.99991	8.31	0.00
1999	-0.00007	[2.47]**	0.00009	[2.84]***	87	0.77	0.99991	8.06	0.01

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3 First stage estimation results of inverse of import penetration ratio

Variable	Model 1	Model 2
Capital share	-98.26 [1.09]	-304.00 [2.62]***
Investment share	-2499.03 [3.25]***	-2378.88 [3.08]***
Labour share	-2891.07 [1.92]*	-3433.08 [2.00]**
Employment	0.01 [1.84]*	0.01 [1.79]*
Investment	0.00 [3.28]***	0.00 [3.35]***
Concentration		-217.58 [1.43]
Subsidies		3533.68 [2.66]***
Obs.	352	352
R-squared	0.19	0.19

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4 Estimation results using model 1 as first stage (EU tariff)

Periods	X/M	I*X/M(concentration)	Obs.	alpha l	beta	Beta=1	p-val
All	-0.00002 [2.78]***	-0.00001 [0.40]	349	-3.05	1.00001	0.16	0.69
1996	-0.00002 [1.67]*	-0.00004 [0.77]	88	-0.62	1.00004	0.60	0.44
1997	-0.00002 [1.11]	0.00002 [0.51]	88	1.04	0.99998	0.26	0.61
1998	-0.00002 [1.38]	0.00000 [0.06]	87	-14.00	1.00000	0.00	0.95
1999	-0.00002 [1.09]	0.00000 [0.24]	86	-3.45	1.00000	0.06	0.81
Periods	X/M	I*X/M(exp. intensity)	Obs.	alpha l	beta	Beta=1	p-val
All	-0.00001 [1.23]	-0.00004 [2.70]***	349	-0.22	1.00004	7.29	0.01
1996	0.00000 [0.24]	-0.00007 [3.07]***	88	-0.05	1.00007	9.45	0.00
1997	0.00000 [0.07]	-0.00005 [1.67]*	88	0.02	1.00005	2.79	0.10
1998	-0.00001 [0.78]	-0.00003 [1.27]	87	-0.26	1.00003	1.61	0.21
1999	-0.00001 [0.82]	-0.00002 [0.96]	86	-0.31	1.00002	0.93	0.34
Periods	X/M	I*X/M(subsidies)	Obs.	alpha l	beta	Beta=1	p-val
All	-0.00003 [3.64]***	0.00004 [2.87]***	349	0.69	0.99996	8.25	0.00
1996	-0.00003 [2.32]**	0.00007 [1.84]*	88	0.44	0.99993	3.37	0.07
1997	-0.00002 [1.39]	0.00011 [2.26]**	88	0.23	0.99989	5.11	0.03
1998	-0.00002 [1.76]*	0.00004 [2.25]**	87	0.64	0.99996	5.04	0.03
1999	-0.00003 [1.73]*	0.00003 [2.03]**	86	0.78	0.99997	4.13	0.05
Periods	X/M	I*X/M(K/L)	Obs.	alpha l	beta	Beta=1	p-val
All	-0.00001 [1.37]	-0.00004 [2.98]***	349	-0.25	1.00004	8.85	0.00
1996	-0.00002 [1.65]	-0.00002 [0.48]	88	-1.47	1.00002	0.23	0.64
1997	0.00000 [0.04]	-0.00005 [1.52]	88	-0.01	1.00005	2.31	0.13
1998	0.00000 [0.65]	-0.00005 [2.12]**	87	-0.10	1.00005	4.50	0.04
1999	0.00000 [1.19]	-0.00005 [2.80]***	86	0.03	1.00005	7.85	0.01

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5 Estimation results using model 2 as first stage (EU tariff)

Periods	X/M		I*X/M(concentration)		Obs.	alpha 1	beta	Beta=1	p-val
All	-0.00003	[3.02]***	-0.00002	[0.87]	349	-1.56	1.00002	0.75	0.39
1996	-0.00002	[1.76]*	-0.00005	[1.08]	88	-0.47	1.00005	1.16	0.28
1997	-0.00002	[1.17]	0.00000	[0.03]	88	17.00	1.00000	0.00	0.97
1998	-0.00002	[1.51]	0.00000	[0.07]	87	12.59	1.00000	0.00	0.94
1999	-0.00002	[1.09]	-0.00001	[0.31]	86	-2.54	1.00001	0.10	0.76
Periods	X/M		I*X/M(exp. intensity)		Obs.	alpha 1	beta	Beta=1	p-val
All	-0.00001	[1.89]*	-0.00004	[2.56]**	349	-0.36	1.00004	6.53	0.01
1996	-0.00001	[0.76]	-0.00006	[2.74]***	88	-0.14	1.00006	7.48	0.01
1997	0.00000	[0.34]	-0.00005	[1.57]	88	-0.09	1.00005	2.48	0.12
1998	-0.00001	[1.02]	-0.00003	[1.23]	87	-0.34	1.00003	1.51	0.22
1999	-0.00001	[0.78]	-0.00002	[1.02]	86	-0.28	1.00002	1.04	0.31
Periods	X/M		I*X/M(subsidies)		Obs.	alpha 1	beta	Beta=1	p-val
All	-0.00003	[3.77]***	0.00003	[1.70]*	349	1.18	0.99997	2.89	0.09
1996	-0.00003	[2.25]**	0.00003	[0.98]	88	1.00	0.99997	0.97	0.33
1997	-0.00002	[1.36]	0.00004	[0.65]	88	0.55	0.99996	0.42	0.52
1998	-0.00002	[1.82]*	0.00003	[2.17]**	87	0.76	0.99997	4.70	0.03
1999	-0.00002	[1.73]*	0.00003	[2.07]**	86	0.73	0.99997	4.26	0.04
Periods	X/M		I*X/M(K/L)		Obs.	alpha 1	beta	Beta=1	p-val
All	-0.00001	[1.61]	-0.00005	[3.59]***	349	-0.24	1.00005	12.89	0.00
1996	-0.00002	[1.68]*	-0.00002	[0.77]	88	-0.92	1.00002	0.59	0.45
1997	0.00000	[0.11]	-0.00006	[2.04]**	88	-0.02	1.00006	4.17	0.04
1998	0.00000	[0.67]	-0.00005	[2.52]**	87	-0.09	1.00005	6.34	0.01
1999	0.00000	[0.96]	-0.00005	[2.91]***	86	0.02	1.00005	8.46	0.00

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Testing Grossman-Helpman model for Israel

In this part of the chapter we made an attempt to test empirically the Grossman-Helpman model for Israel. We applied almost the same specification as was used for Poland in the previous part, however, the limited availability of the data caused some serious econometric problems, resulting in the poor performance of the model. We start with some stylized facts on Israel's trade policy. Afterwards we present the results of estimation of Grossman-Helpman model.

Some stylized facts on Israel's trade policy

Since 1991 Israel has moved slowly but steadily towards a very open trade regime. Endeavours in this direction include, among others, increased transparency of its tariff system. Unilateral tariff liberalization to be operated since then through 1998 was meant to bring maximum MFN tariff rates for most products to a range of 8-12 percent over a period of six years. All major political parties accepted a gradual liberalization of trade policy in order to increase the efficiency of the regulated economy in which the level of public expenditure was unusually high for a developed country. The plan required thus a gradual reduction of tariffs, when as a first step tariffs replaced NTBs (Non-Tariff Barriers) like licenses and quotas. The reduction process was postponed to 2000 for the textile industry, but market forces proved to be very strong, so that beginning in 2000 most of Israel's textile plants closed down and moved their production to neighbouring countries such as Jordan and Egypt. Since 1998-2000, Israel has continued to implement trade liberalization reforms, albeit at a somewhat slower pace than in the previous six-year period. The average applied MFN tariff has fallen from 10.8% in 2000 to 8.9% in 2005, with a maximum rate of 560% on fresh or dried dates (!), and high tariff dispersion as the coefficient of variation reaches 2.8. About 48.5% of all tariff lines now carry the zero rate, up from 45.1% in 2000 (WTO 2006). Other frequent tariff rates are 12% (2,094 lines), 10% (614 lines), and 8% (603 lines). Some 46.4% of the tariff lines carry duties between zero (excluded) and 15% (included).

MFN tariff rates on non-agricultural products (WTO definition) are generally lower (5.1% on average), with the highest rates (ranging up to 34.4%) applying to fish and fishery products and textiles and clothing. MFN tariffs on agricultural products (WTO definition) remain high, with an average tariff of 32.9%, and rates varying considerably among product groups. Tariffs are particularly high on dairy products (with an average rate of 124.4%), fruit and vegetables (54.0%), and live animals and products thereof (50.4%) (see later). Tariffs are relatively low on chemicals and photographic supplies (with an average rate of 2.2%), mineral products (3.6%), and transport equipment (3.6%).

Due to the low tariffs, tariff escalation almost does not exist, with a higher range, close to 8 percent for final and semi-processed products and a lower range for unprocessed products. This system usually provides states a greater degree of protection for the local manufacturing sector, but in recent years tariff escalation has not been maintained in all stages of processing. Overall, the current tariffs represent negative escalation for raw materials and intermediate goods, implying lower effective protection for every stage of processing than was indicated by nominal rates.

Coverage of an additional tariff called the “safeguard levy” has also been substantially reduced and phased out, from the equivalent of 2.7 percent of the tariff lines in 1992 to 0.8 percent in 1999 to nil at present. The main difference between MFN tariffs and the safeguard levy is that any change in the former requires approval by the Knesset (the Israeli Parliament), while the levy did not. This fact had introduced a certain element of uncertainty to tariff protection and under strong protestations by the US it had to be phased out. Another aspect of uncertainty for importers results from the fact that Israel has bound rates on just half of its tariff lines. The bound rates are often above the applied MFN rates, giving Israel the possibility to unilaterally raise its applied tariffs. This issue might be solved by narrowing the gap between bound and applied rates, as well as by increasing the coverage of tariff bindings.

However the significance of MFN tariff schedules is limited. The bulk of Israel’s imports to supply local consumers is conducted within the framework of free-trade agreements with the EU (now covering 27 countries), the US, EFTA, Canada, Mexico, Turkey; a partial preferential agreement with Jordan and the Customs Union Agreement with the PA. Thus, in

practice most importers do not pay the MFN applied tariff, since only about a quarter of Israel's total imports take place under MFN agreements. For instance, the EU-25 and the US (which in 2004 represented together more than 58% of Israel's merchandise imports) export their goods within the ambit of their respective bilateral trade agreements and receive either duty-free status or their exports are taxed less than the MFN rate. Note that many tariff preferences are subject to quotas. It is also to be noted that in contrast to Poland, an EU member, Israel does not intend to apply Generalized Preferences (GSP) to developing countries in the foreseeable future.

Because of the limited role that tariffs (and in the event preferential tariffs) play nowadays in Israel's trade policy, but for the special case of agricultural and food imports (see below), attention must be turned briefly to non-tariff barriers (NTBs).

As an integral part of its strategy to become an open economy, Israel abolished many NTBs that used to exist decades ago. The trade agreement between the EU and Israel, for example, prohibits import restrictions except under strict conditions for safeguard or balance-of-payment reasons. However, NTBs such as import licenses, standards and quality controls still exist.

The oldest NTB in Israel is the kosher certificate requirement. The Jewish religion, which in Israel is not separated from the State, demands that almost every product entering the country must be kosher. Over the last decade, with the massive influx of immigrants from Russia, who brought with them a new and more liberal culture and also began to import non-kosher products, the restriction became less rigorous, although officially nothing has changed. In December 1994, Israel restated a ban on imports of non-kosher meat and meat products. And more generally, because of the power of the Rabbinate, any overseas exporter who aims to reach unlimited market access and significant share in Israel must comply with kosher requirements and therefore bear the additional cost of carrying out the "kosher" process.

One of the main NTBs in the Israeli economy originates from its centralistic structure regarding imports. While in most countries of the world, especially those with open economies, many firms may import identical products, in Israel only one firm is allowed to

import a certain label. For example, a study conducted in Israel in 1988 discovered that three main importers hold more than half of the import market in 75 percent of the imported products (Brezis, 1999). Since the study was carried out the situation has improved dramatically, but the issue of the high concentration in imports has not been resolved altogether.

Two main setbacks continue to characterise the structure of the import market: an importer imports a certain label exclusively and usually imports a number of labels from the same sector, i.e. cars, alcohol or perfumes. There are almost no parallel imports, leading to a situation in which foreign producers who did not sign agreements with the "exclusive importer" in Israel are denied access to the market. While the phenomenon might be acceptable in heterogeneous products, in homogeneous (standardized) products like cement, for example, it is not.

The reason for a lack of parallel imports is mostly historical and goes back to the period when Israel had low foreign exchange reserves. Due to that fact the government tried to restrict imports by restricting the number of authorised importers (Brezis, 1999, p.7). Until 1991, Israeli importers received a license only if they had the ability to cover imports with their private foreign exchange reserves or via barter deals. This policy became one of the main NTBs and created a large number of import monopolies, which exist even today. The best examples are vehicle importers (Karasso, Lubinsky, Meir) as well as importers of wheat (Zanziper) and some cosmetic products (Shastovich).

The Israeli government has been trying in recent years to remedy this situation and some publications reveal that it might approve parallel imports in the vehicles sector shortly. Yet several years ago, e.g., all import licensing covered still 8.5 percent of tariff lines, down from 19.2 percent of tariff lines in 1992. Most of the remaining licenses related to safety and security concerns (WTO, 1999). Additionally, in 1998 the Ministry of Industry Trade and Labour changed the law regarding import licenses for products with spare parts to allow parallel imports (Brezis, 1999). This type of products previously also fell under restrictions forbidding parallel imports.

Special licensing regimes have prevailed until very recently for countries that did not have an MFN agreement with Israel, such as Albania, Indonesia or Cambodia. All imports from these

countries were traditionally subject to licensing. More generally, since July 2003, Israel has lifted its general prohibition on imports from WTO Members that had no diplomatic relations with it or prohibited imports from Israel, e.g. Bahrain, Bangladesh, Brunei, Chad, Cuba, Kuwait, Malaysia, Morocco, Pakistan, Tunisia, and the United Arab Emirates. However, a licensing requirement remains in place for eight other countries that prohibit imports from Israel. And some prohibitions of imports according to origin still prevail. In that respect, clearly, the largest anomaly in Israel's import trade policy is the prohibition of importing from two of its neighbours, Syria and the Lebanon. To that should be added the non-application of the Customs Envelope Agreement of September 1994 with the PA since at least the year 2000, because of the security situation. Normalization of trade relations with these three Israel's immediate neighbours in the future could make a clear difference for the Israeli consumer. Because of the importance of transport costs on trade in fresh and bulky products, the huge MFN tariffs applied by Israel on many food imports (see below) are prohibitive. They would turn to non-prohibitive for a large range of products if they could be freely imported from Syria, the Lebanon and the PA⁵⁰. No preferential trade agreements with the neighbours would actually be needed to promote the latter's exports. They should actually be prevented from emerging, as this would imply discriminating in favour of Arab countries in the Israeli local market against other developing economies with the implied cost of trade diversion which the 1991 unilateral trade liberalization strategy was trying to prevent.

Another NTB is standardisation and quality controls. All products entering Israel must comply with local standards, as determined by the Standards Institution of Israel and the Ministry of Industry Trade and Labour. A first type of standard, called "Israeli Standard", relates to quality of the product, but is not binding. A second type, called "Official Israeli Standard" is mandatory and products cannot enter the local market without this official mark given by the Ministry of Industry and Trade.

While standardisation is customary in many Western countries in order to protect local customers from low-quality products, in Israel its origin is quite different. In the past standards were set in such a way as to protect local producers and prevent imports of competing products. In the last decade, particularly since the adoption of the Standards Law

⁵⁰ A good example are dates where the MFN tariff rate is currently 560% and which probably protects local production by kibbutzim in the Jordan Valley and by Bedouin tribes in the Neguev desert.

of 1998, the Ministry of Industry Trade and Labour has been working for the phasing out of many official standards aimed at preventing imports. Some 250 of 540 official standards were dropped, among them marks for the length of simple matches and a standard to determine a minimal number of ventilator speeds (Brezis, 1999). More generally, the Israeli government has been moving over time in the direction of bringing its standards into line with international ones and completely abolishing some anachronistic local standards. Currently, one quarter of the mandatory standards emulate international standards.

Protectionism via the use of government procurement has plagued the Israeli economy since Independence in 1948, as the State and its agencies have played a dominating role in developing the economy in the first 40 years after independence and in defending its citizens since this very day. In other words, public expenditure is unusually high for an OECD-type economy, with the Army and the Ministry of Defence playing a central role. A clear sign of protectionist intent in that respect is that while Israel has been for years party to the plurilateral Agreement on Government Procurement (GPA), it has always invoked developing-country status, allowing it to implement offset arrangements. For instance, the decision adopted by the Committee on Government Procurement in December 2004 allows Israel to require offsets for up to 20% of a contract. Government agencies and state-owned companies are required even today to follow an offset policy, designed to promote national manufactures (Mandatory Tenders Regulation (Preference for Israeli Products and Mandatory Business Cooperation) of 1995). All international public tenders with a value of US\$ 0.5 million or above must include a clause on "industrial cooperation" (IC) with Israeli entities in the amount of at least 35% (30% in tenders covered by the GPA) of the value of the contract. To satisfy the IC offset requirement, a foreign supplier can subcontract to local companies, invest in local industries, undertake a know-how transfer, or acquire goods made in Israel or from work or services performed in Israel.

Foreign governments, particularly the one of the US, have been complaining for years, about the lack of transparency in Israeli practices. For instance there is the problem of the language. Officially, only for tenders under the GPA, the information must be published in an English newspaper (either the Jerusalem Post or the International Herald Tribune-Ha'aretz). Even so, the USTR has been claiming of lack of transparency and lengthy procedures, as well as arbitrary awards of contracts. For example, although some Israeli government entities make a

point to notify the US government on tenders valued at over US\$50,000, many do not. Notifications, say US authorities, are often received shortly before deadlines and only in Hebrew. Complex technical specifications and kosher certification requirements discourage foreign participation in government tenders for food (US Department of State, 2002). For tenders not covered by the GPA, Israel's tendering regulations award price preferences to local suppliers, certain regions, and local subcontracting. The price preferences are up to 15% for Israeli companies. And it suffices to organize a closed tender for procurement of goods up to an amount of 312000 NIS (less than 60000 euros) by any government Ministry (but for the Defence Ministry where the amount is limited to half this amount).

Invoking the status of developing country for applying Uruguay Round resolutions has not been limited to the domain of government procurement, but to other highly relevant issues in the case of Israel, such as TRIPS, where Israel was given until 2000 to change its law on intellectual property. In fact Israel continues to invoke this status at a time it has been invited in May 2007 to conduct negotiations for membership in the OECD. Once a member, Israel will clearly have difficulty in justifying "infant industry-infant country" status, allowing for disguised protectionism. Observe that Poland opted long ago not to play this game when it decided to apply for EU membership in the mid-1990s.⁵¹

There are huge inter-sectorial differences in the levels of protectionism applied by Israel. Agriculture is a case in point. Since the inception of the State the agricultural sector has been defined as one of the vital parts of the economy and the first Zionist settlers at the beginning of the previous century dedicated themselves to its development, despite the fact that climatic conditions in Israel are not favourable to most crops.

For the last few decades the economy's focus has switched from agriculture to other areas of expertise, mostly high-tech; agriculture represents only 1.6 percent of the GDP, down from 2.5 percent in 2001 (HSBC, 2004). However, in absolute terms agricultural output has grown almost without interruption since 1948 and reached US\$3.3 billion in 2000. The irony is that Israel's agricultural sector supplies until this very day most of the country's food needs and

⁵¹ Poland had a chance to apply (within its Europe Agreement) a Restructuring Clause (art. 28 of EA) which could have been applied only by Polish side in the form of temporary increased import duties. "These measures may only concern infant industries, or certain sectors undergoing restructuring or facing serious difficulties, particularly where these difficulties produce important social problems." This clause was invoked three times before the accession to the EU.

around 20 percent of the yearly production designated for export (Tovias, 2003). This impressive trade performance is feasible through a combination of high level of tariff protection with export promotion policies. The only exception to agricultural self-sufficiency is feed grains such as wheat and soybeans, where Israel is a net importer. This is only possible, because as happens in the EU or the US, the agricultural sector is still highly protected, especially in comparison to industrial goods. Despite the general process of lowering MFN tariffs on most imports, MFN tariffs on agricultural products did rise more than 2.5 times from 1993 to 1999 with the adoption by the GATT's Marrakech Agreement of 1994 of the so-called principle of *tariffication* (WTO, 1999). According to WTO(2006), Israeli farmers benefit still from relatively high tariff protection. In 2005, the average MFN applied tariff (including the *ad valorem* equivalents of specific, compound, and alternate duties) on agricultural products (ISIC Revision 2 definition) is 41%. Around 40% of agricultural goods enter Israel duty free compared with around 51% of non-agricultural products. MFN applied tariffs are higher than the overall average rate in six subsectors: live animals (with an average tariff of 29.0%), meat products (64.6%), dairy products (120.6%), edible vegetables (63%), edible fruit (87.1%), and preparations of cereals, flour, starch or milk products (42.3%). The average MFN applied tariffs on these products, and on vegetable plaiting materials, sugars and sugar confectionery, and edible preparations have increased since the previous TPR of Israel in 1999. Note that tariff rates on imports of fruit (87.1% on average), vegetables (63%) and related products are relatively high having substantially increased since 1999 when the WTO published its previous TPR. This in spite of the fact that Israel says it has a comparative advantage. Within these groups there is also high dispersion due to tariff peaks on certain fruit (344%) and vegetables (560%). Applied MFN tariffs are generally relatively low on cereal and oilseed products (average of about 10%), with the exception of wheat (50%) and certain vegetable seeds (tariff peaks of up to 114%). Tariff protection for dairy and meat products is high and has also increased since 1999. Applied MFN tariffs on meat average 64.6%. One of the ironies is that these tariffs protect all local producers, including those kibbutzim and Arab meat producers which are allowed to supply non-kosher meat. Imports of milk products are still subject to high applied MFN tariffs of between zero and 212%. Imports of cheese are subject to relatively high tariff rates and tariff quotas. Bound rates on fresh, grated or blue cheese ranged between 185% and 290% in 1995

and between 157% and 247% in 2004. These horrendous rates are there to protect not only small family farms but also *moshavim* (production cooperatives) and *kibbutzim* (communes).

Tariff quotas apply to 12 product groups although for most of these products the in-quota tariff rate is above the MFN applied rate, thus rendering the quota redundant (WTO 2006). When it is not, there is obviously some scope for lobbying the Ministries of Agriculture and Rural Development (for agricultural products and fresh food) and Industry, Trade, and Labour (for processed food) which are the ones in charge of the administration of those quotas. They apply among others to imports of prunes, walnuts, sweet corn, and concentrated citrus fruit.

Another protection measure for agriculture were variable import levies applied to imports of basic products like sugar, pasta, sunflower seeds, jams, fruits, wine, cheese and frozen fish (WTO, 1999). At the end of 1990's, in accordance with the WTO Agreement on Agriculture, all variable levies were eliminated. Now, Israel applies tariff quotas to 12 product groups (nuts, corns, orange juice, sheep and goat milk and cheese). "However, for most of these products the in-quota tariff rate is above the MFN applied rate, thus rendering the quota redundant.⁵² As a result, these tariff quotas are in general overfilled" (WTO, 2006, p. 63). On the other hand, note that some of the PTAs signed by Israel with third countries offer the latter some tariff preferences (generally within a quota). For instance, in 1996 Israel and the US signed an agricultural trade accord aimed at including the remaining goods not covered by the 1985 FTA agreement. Accordingly, agricultural imports from the USA were entitled to a preference of 10 percent (USDA, 2005). This implies, of course, devastating trade diversion against non-preferred countries, such as Argentina.

A second sector deserving particular attention covers food, beverages and tobacco industries. In 2002, it accounted for about 15% of industrial production; it was the second largest employer in the industrial sector with more than 16% of industrial employment in 2004. The sector exhibits an oligopolistic market structure, especially in the case of tobacco products, soft drinks, fresh juices and wines. According to the political economy models oligopolistic structure favours the emergence and operation of lobbies. The industries are mostly oriented towards the domestic market, with exports representing only 6% of production or less. The

⁵² In principle "in quota" tariff rates should be below MFN rates in order to enable a minimum level of imports to a protected market.

simple average MFN for the sector has increased from 20.5% in 1999 to 25.5% in 2005. According to WTO (2006), average tariffs have increased for food manufacturing and preparations, but decreased for the beverage and tobacco industries. MFN tariffs are particularly high on dairy products (112.7% on average), manufacture of bakery products (60.9%) and meat products (50.3%). Tariff rates also feature a high dispersion, ranging from zero to 340% in the food industry and fruit and vegetables canning.

Finally, it is interesting to note that regarding textiles and wearing apparel, the simple average applied MFN tariffs are at present "only" 7.7% (down from 12.5% in 1999) and 11.3% (down from 31.2% in 1999), respectively. As noted in much of the literature on Israel's trade policy, Israel has accepted since at least a decade that if textile and clothing firms are to survive under Israeli ownership and management they had to be "de-localized" to neighbouring countries such as Jordan and Egypt and some less developed East European countries (like Romania) . The process has taken place in an orderly way and is now almost completed. It is remarkable to note that whereas such a move has been accepted as a second best for the textiles and clothing industry, such is not the case neither for the agricultural nor for the food sectors. Apart from the old conventional argument that population dispersion is a defense imperative, something which was also true regarding textiles and clothing, there are two other possible reasons one can think about. One might be that small protected farms are partly in the hand of settlers in the West Bank, including the Jordan Valley (and until 2005 in the Gaza Strip). They have had a lot of clout in certain key political parties. Another reason for the high tariffs might be the fear of the government that lowering protection might leave without alternative employment the very poor Arab Israeli population in the Neguev desert, made up of Bedouin tribes. Such a move could lead to a nationalist uprising in Israel or to massive migration to urban suburbs in the centre of the country. So here the lobby in favour of maintaining protection would be the defense establishment and the intelligence services. The oligopolistic food industry had probably also played a role in lobbying for higher level of protection.

Thus, it seems that the Israeli government was efficient - especially in comparison to other MPCs - in implementing gradual, mostly unilateral, liberalization of its trade policy regime. Agriculture is the only major exception to the liberalization tendency. This trend reflects mainly a broad consensus among major political parties in Israel in pursuing liberal trade

policy reforms. On the other hand it can mean that protectionist pressures from organized sectoral lobbies were either weak or inefficient⁵³. We will try to verify the last hypothesis by testing the Grossman-Helpman model.

In order to verify the possible impact of different lobbies on the government we will apply the G-H “Protection for sale” model. The governmental policy – in this model - is determined by elected politicians. They simultaneously consider the consumer welfare of electorate and contributions of lobbies, representing various sectors of the economy. Thus, in the model, various lobbies in organized industries provide contributions to the government in return for influencing the tariff schedules. The detailed structure of the model and review of empirical literature was already presented in the previous section on Poland.

Empirical verification of Grossman-Helpman model for Israeli trade policy⁵⁴

The model we present here for Israel is nearly the same to that applied to Poland. The structure of the Grossman-Helpman model and the review of empirical literature is presented in the paper on Poland’s trade policy. In the first stage, in order to cope with the endogeneity problem of import penetration ratio, we used instrumental approach, following Goldberg and Maggi (1999). Thus, we regressed inverse import penetration ratio on investment share in output, labour share in output, employment level, investment, investment level, intra-industry level and concentration index. Unfortunately, the results obtained in the estimation were not sufficient and credible. We may think that the unsatisfactory outcome could be attributable to lack of the sectoral data on physical capital and government subsidies. The former variable is crucial in explaining trade flows in the factor abundance, Heckscher-Ohlin framework commonly employed in estimations of the Grossman-Helpman model.

Therefore we decided to include solely the actual inverse import penetration ratios in the estimation and regressed the following equation:

⁵³ Once again with the exception of agricultural lobbies

⁵⁴ The data for the other MPCs was not available at the desired level of detail, therefore we included only Israel in the analysis.

$$\frac{t_i}{1+t_i} e_i = \gamma \frac{x_i}{m_i} + \delta I \frac{x_i}{m_i} + \varepsilon_i$$

where, t_i is the tariff, e_i is the elasticity of import demand, $\frac{x_i}{m_i}$ is the inverse penetration ratio, I is the industry organization dummy, ε_i and μ_i are error terms. This is the same equation, as the equation (6) in the case of Poland. However, the proxies used for industry organization are different for Israel: (i) the concentration index (proxied by the ratio of sales of the four largest establishments to total sales of the industry), (ii) export intensity, (iii) intra-industry trade index and (iv) investment-labour ratio. We set the I dummy to one whenever the variable in question exceeded the average across industries. We used the Grubel-Lloyd index of intra-industry trade as industries seeking protection, with lower intra-industry trade, will find their task harder if they have to counter not only consumer dissatisfaction, but also producers who purchase their goods as intermediates (Marvel and Ray, 1983).

The model was estimated by OLS, for the years 1995, 1999 and 2002-2003. Two types of duties were considered: effectively applied tariffs and MFN tariffs. For any product, effectively applied duty considers the preferential tariff if there is any, otherwise it takes the MFN applied tariff⁵⁵. In case of year 1995, tariffs applied in 1993 were used as a proxy for tariffs applied in 1995. The data on production, investment, labour and concentration come from the Israeli Central Bureau of Statistics. The relevant data was converted to US dollars according to the average annual exchange rate and then deflated by overall PPI using 2000 as a base year. The trade data is taken from COMTRADE. The elasticity of import demand for all sectors is set to -1⁵⁶. The final dataset includes 58 NACE rev. 1.1 3 digit sectors.

In Table 1 below we present the results of regression for effectively applied tariffs. The results of the estimation for the MFN tariffs are similar and we present them in Table 2.

⁵⁵ This definition and the tariffs data come from The World Integrated Trade Solution (WITS) database.

⁵⁶ The data on import demand elasticities were unavailable for Israel. The study often used in the literature is Shiells, Stern and Deardorff (1986). However, since not only it provides elasticities for a different economy and period but also uses SITC 3-digit classification, we have decided to set the elasticity of import demand for all sectors at -1.

Table 1 Estimation results for Israeli effectively applied duties

Periods	X/M		I*X/M(concentration)		Obs.	alpha l	Beta	Beta=1	p-val
All	-0.00117	[1.87]*	0.00088	[1.24]	232	1.33	0.99912	1.53	0.22
1995	-0.00233	[1.73]*	0.00239	[1.78]*	58	0.97	0.99761	3.18	0.08
1999	-0.00194	[1.58]	-0.00006	[0.03]	58	-31.37	1.00006	0.00	0.97
2002	-0.00073	[0.57]	-0.00159	[0.71]	58	-0.46	1.00159	0.50	0.48
2003	-0.00148	[1.72]*	-0.00044	[0.21]	58	-3.35	1.00044	0.04	0.83
Periods	X/M		I*X/M(exp. intensity)		Obs.	alpha l	Beta	Beta=1	p-val
All	-0.00036	[1.09]	0.00123	[2.76]***	232	0.29	0.99877	7.62	0.01
1995	0.00004	[0.84]	0.00117	[3.01]***	58	-0.04	0.99883	9.08	0.00
1999	-0.00212	[1.10]	0.00230	[1.40]	58	0.92	0.99770	1.95	0.17
2002	-0.00347	[1.23]	0.00350	[1.37]	58	0.99	0.99650	1.87	0.18
2003	-0.00233	[0.94]	0.00268	[1.21]	58	0.87	0.99733	1.46	0.23
Periods	X/M		I*X/M(intra industry trade)		Obs.	alpha l	Beta	Beta=1	p-val
All	-0.00139	[3.33]***	0.00128	[2.88]***	232	1.08	0.99872	8.28	0.00
1995	0.00190	[1.88]*	-0.00188	[1.85]*	58	1.01	1.00188	3.44	0.07
1999	-0.00199	[3.45]***	-0.00057	[0.28]	58	-3.48	1.00057	0.08	0.78
2002	-0.00217	[2.51]**	0.00093	[0.37]	58	2.34	0.99907	0.14	0.71
2003	-0.00361	[3.87]***	0.00368	[2.97]***	58	0.98	0.99632	8.88	0.00
Periods	X/M		I*X/M(invest/L)		Obs.	alpha l	Beta	Beta=1	p-val
All	0.00038	[1.15]	-0.00073	[1.48]	232	0.51	1.00073	2.18	0.14
1995	0.00011	[0.11]	-0.00004	[0.04]	58	2.47	1.00004	0.00	0.97
1999	-0.00024	[0.31]	-0.00217	[0.97]	58	-0.11	1.00218	0.94	0.34
2002	-0.00003	[0.05]	-0.00401	[1.41]	58	-0.01	1.00402	1.96	0.17
2003	-0.00008	[0.18]	-0.00509	[1.78]*	58	-0.02	1.00511	3.14	0.08

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

The Grossman-Helpman model hardly finds support in the data in the cases in which industry organization is proxied by concentration and investment-labour ratio. The estimated parameters usually have incorrect signs and are statistically insignificant. The signs of the parameter estimates are correct only for export intensity and for intra-industry trade in most of the cases. However, the last specification gives unsatisfactory results as far as other tests as concerned. Therefore we focus only on export intensity specification of lobbies organization, where the results are at least in part consistent with the theoretical model.

The hypothesis requiring $\gamma + \delta > 0$, is supported in all of the cases for the export intensity specification. The estimated parameters are of expected signs, however the parameters are statistically significant only in case of the total panel and in year 1995. Considering the structural parameters (α_l and β) of the Grossman-Helpman model, they are almost always within the [0,1] for the export intensity variable. In addition, the null hypothesis that $\beta=1$ is

rejected in most of the cases for export intensity. We may think that good, at least to some extent, results for export intensity specification suggest that the export-oriented sectors may be specifically promoted by government policy in Israel. On the other hand, we may not draw any credible conclusions about the other specifications of industry organization.

On the whole, we may find only weak support for the Grossman-Helpman model as for the Israeli trade policy. In addition, the model performs significantly worse for Israel than for Poland.

We also made the same regressions for MFN duties, for which results are shown in Table 2. They do not provide support for Grossman-Helpman model either. The best results are obtained for export intensity proxy of industry organization. The parameters have correct signs and are statistically significant for the panel and for year 1995. However, the values of the structural parameters (α_l and β) are not consistent with the findings of the theoretical model.

Table 2 Estimation results for Israeli MFN-duties

Periods	X/M		I*X/M(concentration)		Obs.	alpha_l	Beta	Beta=1	p-val
All	-0.00137	[2.09]**	0.00107	[1.45]	232	1.28	0.99893	2.09	0.15
1995	-0.00236	[1.78]*	0.00244	[1.85]*	58	0.97	0.99756	3.42	0.07
1999	-0.00248	[2.50]**	0.00037	[0.21]	58	6.70	0.99963	0.04	0.84
2002	-0.00073	[0.57]	-0.00159	[0.71]	58	-0.46	1.00160	0.50	0.48
2003	-0.00148	[1.72]*	-0.00044	[0.21]	58	-3.35	1.00044	0.04	0.83
Periods	X/M		I*X/M(exp. Intensity)		Obs.	alpha_l	Beta	Beta=1	p-val
All	-0.00038	[1.09]	0.00148	[3.25]***	232	0.25	0.99852	10.59	0.00
1995	0.00006	[1.11]	0.00134	[3.55]***	58	-0.04	0.99866	12.61	0.00
1999	-0.00230	[1.22]	0.00323	[1.85]*	58	0.71	0.99678	3.43	0.07
2002	-0.00347	[1.23]	0.00350	[1.37]	58	0.99	0.99650	1.87	0.18
2003	-0.00233	[0.94]	0.00268	[1.21]	58	0.87	0.99732	1.46	0.23
I*X/M(intra industry trade)									
Periods	X/M		I*X/M(intra industry trade)		Obs.	alpha_l	Beta	Beta=1	p-val
All	-0.00147	[3.47]***	0.00137	[3.03]***	232	1.07	0.99863	9.15	0.00

1995	0.00202	[2.04]**	-0.00199	[2.00]*	58	1.02	1.00199	4.02	0.05
1999	-0.00210	[3.19]***	-0.00100	[0.42]	58	-2.10	1.00101	0.18	0.67
2002	-0.00217	[2.51]**	0.00093	[0.37]	58	2.34	0.99907	0.14	0.71
2003	-0.00361	[3.87]***	0.00368	[2.97]***	58	0.98	0.99632	8.87	0.00
Periods	X/M		I*X/M(invest/L)		Obs.	alpha_l	Beta	Beta=1	p-val
All	0.00049	[1.46]	-0.00086	[1.69]*	232	0.57	1.00086	2.84	0.09
1995	0.00004	[0.04]	0.00004	[0.04]	58	-1.15	0.99996	0.00	0.97
1999	0.00036	[0.49]	-0.00307	[1.40]	58	0.12	1.00307	1.95	0.17
2002	-0.00003	[0.05]	-0.00401	[1.41]	58	-0.01	1.00403	1.96	0.17
2003	-0.00008	[0.18]	-0.00509	[1.78]*	58	-0.02	1.00511	3.14	0.08

Robust t statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

One possible reason for these disappointing results may be the limited data availability on capital and subsidies⁵⁷. Another may come from the specific profile of Israeli trade policy. The estimations are performed on tariff data, while the protection may exist in many forms of non-tariff measures (licences, kosher laws, as mentioned in the trade policy review). This type of trade restrictions were not included in our database. Therefore we may not find plausible interpretation of the results for the influence of the lobbies on Israeli trade policy schedules.

The last possible and the most optimistic explanation is that the Israeli industries were not well organized or sufficiently efficient in lobbying for their sectoral interests. As a result, the government was able to follow fairly liberal trade policy increasing welfare of the whole society.

⁵⁷ The most recent data on capital stock could be obtained only for 1.1.1992. The 90's, however, were marked by a rapid economic growth, significant industrial changes (both in organization and technology), therefore this data could not be used as an estimator.

Chapter 3: Causes of Corruption in MENA Countries and the New Member States

Introduction

The state may correct market failures by means of regulating the economy, by costly market intervention or it may restrict market participants by granting licenses upon fulfilment of certain requirements. It may redistribute income to combat inequality and equalize opportunities for the disadvantaged by providing many public goods, such as health care and education. Often in many countries, especially in those with very limited resources such as the Post-communist or Mediterranean countries, the role of the state is carried out through the use of numerous rules or regulations. In these countries, licenses, permits, and authorizations of various sorts are required to engage in many economic activities (Kaufman 1997). However, the fact the government can regulate the economy in the best public interest, does not mean that it necessarily would pursue it. By means of regulation, it can restrict the behaviour of individuals and businesses beyond the level needed to achieve the social optimum. The proliferation of unnecessary regulation can benefit narrow, but powerful groups inside the state administration with privileged access to legislature. With such actions top bureaucratic officials may organize the business environment as to enrich themselves. In such cases, even though the government aims to realize public wants, regulatory policies can be implemented in wasteful and incompetent ways. This may result in the over-regulation of the businesses. Seeing this, lower-level officials may take advantage of this situation and may seek to delay bureaucratic decisions in order to extract bribes. Thus, they can use their public power to extract bribes from those who need the authorizations or permits. As a result, an excessive number of regulations may result in widespread corruption.

The contribution of this paper is to analyze the determinants of corruption with particular attention paid to the role of the number of bureaucratic delays and procedures. The econometric framework has been applied to the analysis of corruption before, yet this paper makes several contributions to the existing literature. Previous research has generally focused on aggregate economic and political indicators; in this paper, the application of the model is

extended to disaggregation of bureaucratic business environment - bureaucratic delays, costs, and the number of procedures required to carry out business activities - are treated separately. Furthermore, since corruption indices may be systematically biased, jackknife regressions are used in the estimation. Our results suggest that the longer are the bureaucratic delays and the higher is the number of procedures involved in licensing, enforcing contracts and starting new businesses, the higher is the level of corruption. The results of this study are applied to the comparison of corruption between the MENA countries and the New Member States which joined the UE in 2004. It is argued that decreasing the number of procedures, streamlining of the bureaucracy and other ways to limit the time spent on waiting for its decisions may significantly reduce corruption, even if it occurs at a higher official cost of conducting administrative procedures.

Defining and Measuring Corruption

Corruption most commonly refers to the misuse of public power for private gain. Incentives for corruption arise whenever a public official has a monopoly in the use of discretionary power to allocate government services. There are many examples of corruption in the literature, most frequently it involves paying bribes to secure public contracts, access to government-controlled or regulated economic and non-economic activities. Bribes are also used by businesses to reduce costs by avoiding or limiting taxes, fees, regulations, fines or bureaucratic delays.

Corruption is a difficult area in which to gain reliable information. In contrast to other crimes, corruption has no individual victim who would be motivated to report the crime. In a situation of corruption arising between two or more agents their mutual interest is in hiding the fact of the deal from everybody else. It is so, because corruption is nothing to be proud of. Furthermore, it is usually illegal. This observation applies even if one of the parties has been forced to engage in a corrupt activity. The secretive nature of corruption causes severe biases in crime statistics. As a result, corruption is hard to measure and empirical economic research on the question is always in short supply. In order to tackle this problem, researchers from the World Bank and the non-governmental organization Transparency International have

aggregated various data on corruption gathered from a wide range of sources using slightly differing methodologies (Mauro, 1997:1-6). However, both indices share the obvious shortcoming of drawing on surveys.⁵⁸ Therefore, one must be aware that these indices measure perceptions rather than being an objective measure of corruption. It could be, that if a particular country's score differs from survey to survey, it occurs mostly so because of a shift in perceptions. For instance, media coverage of high-level corruption prosecutions may increase public's perception of corruption, while the "real" level of corruption may actually decrease. The usage of different underlying sources across various years is another basis for criticism - differing respondents and slightly differing methodologies may cause a change in a country's score (asking different questions may lead to gathering different opinions). Furthermore, perceptions of surveyed consultants may be also influenced by poor economic performance of the surveyed countries. Table 2 in the Appendix A lists 12 most frequently raised criticisms concerning these indices.

Nevertheless, the correlation between indices produced by different institutions is very high suggesting that most surveyed observers tend to have more or less the same opinion on ranking countries according to how corrupt they seem to be. While the corruption indices are a rather rough measure, they are based on more than the anecdotal evidence on which analyses of such problems are usually focused (Treisman, 2003). In addition, the underlying sources are relatively consistent over the investigated period. Despite the limitations listed above, the research based on the corruption perception indices has led to important policy guidelines and laid solid foundations for anticorruption efforts of such prominent organizations as the World Bank, OECD, UNDP, IMF, and EBRD. Therefore the most effective response to the listed 'failings' is to be always aware of inherent limitations of any given statistical instrument used in any research project.

⁵⁸ These surveys are carried out among resident and non-resident business leaders, experts from risk agencies, country analysts, and public.

The Importance of Corruption

A substantial amount of research in economics and other social sciences has been dedicated towards gaining knowledge of causes and consequences of corruption. Now there is a consensus that corruption impairs economic development. Most of the empirical evidence, starting with the seminal article by Mauro (1995), suggests that it lowers investment and hinders growth to a substantial extent. He finds that countries that are more corrupt experience statistically significant lower GDP growth. More importantly, the empirical evidence shows that correlation between corruption and growth remains negative in sub-samples of countries where bureaucratic regulations are particularly burdensome. This result rejects the theoretical "second-best" view saying that corruption can improve economic efficiency by avoiding bureaucratic delays, since those economies most affected by bureaucratic delays are expected to benefit most from decreasing corruption.

Mauro's early result is supported by similar investigations that use other indices of corruption, methods of estimation, and samples of countries; these include among others: Mauro (1997), Poirson (1998), Li, Xu and Zou (2000), Mo (2001), Abed and Davoodi (2002), Leite and Weidmann (2002). All of these studies find a statistically significant negative impact of corruption on economic growth in at least some of the estimated regressions. In a more recent study, Meon and Sekkat (2005) analyze how the interaction between corruption and governance affects economic growth. Authors obtain a negative impact of corruption on GDP per capita growth and argue that corruption is more detrimental to growth in countries with low government effectiveness and weak rule of law. However, the significant negative impact of corruption on growth is not confirmed in all studies. Pellegrini and Gerlagh (2004) find that the direct relationship between corruption and growth is not robust to changes in their set of control variables, although they find some indirect effects of corruption on economic growth, because corruption negatively affects investment, political stability, trade policies, and education

Most recently, the corruption-growth literature has started to focus on regional levels of analysis. Among papers that investigate this are: Abed and Davoodi (2002), Gymiah-Brempong (2002), Guetat (2006), and Kutan and Douglas (2006). These studies include region-specific institutional variables into cross-country regressions to distinguish their

impact on economic growth at regional levels. Gymiah-Brempong (2002) finds that corruption hinders growth in Africa. Abed and Davoodi (2002) obtain insignificant results for a cross-section of 25 transition countries once an index of structural reforms is included. Guetat (2006) attempts to separate the impact of corruption in MENA countries on growth from other countries including Latin American, Asian, and Sub-Saharan Africa by estimating an economic growth model for a sample of 90 countries during the period 1960-2000. The authors claim that corruption deters growth more significantly in MENA countries than in Latin American and other countries. Kutan and Douglas (2006) propose a similar comparison between these two regions, although their focus is on a different period and they concentrate on comparison of levels instead of growth of GDP. They find that while less corruption was associated with improved economic development in MENA countries, it had no significant relationship with economic growth in Latin American countries during the decade of 1993-2003.

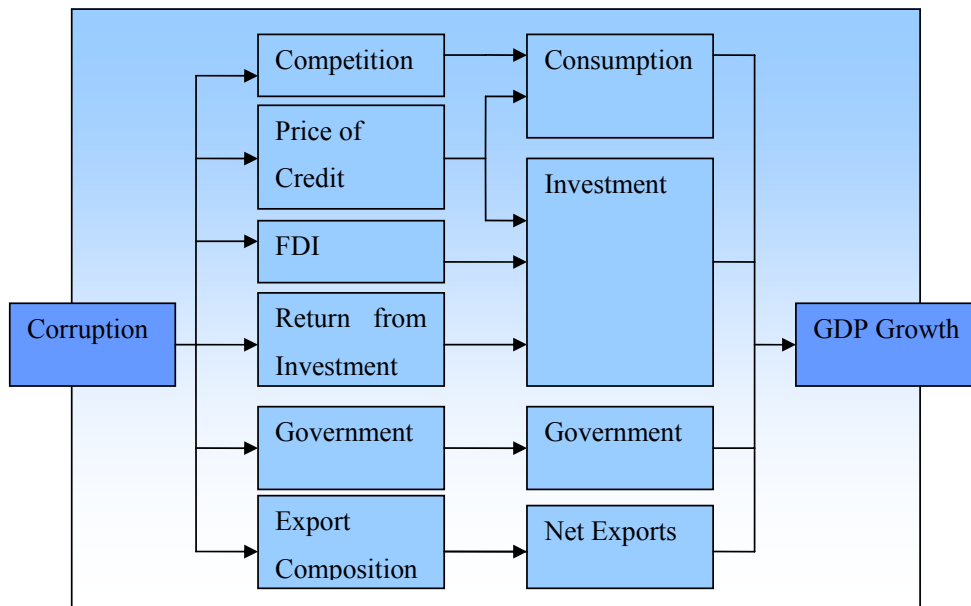
The first investigation on the impact of corruption on investment in a cross-section of countries was undertaken in the already mentioned work of Mauro (1995). He finds that corruption significantly lowers the ratio of investment to GDP. He claims that if Bangladesh were to improve its level of integrity to that of Uruguay, its investment rate would increase by almost five per cent of GDP. Mauro's finding has been backed by empirical investigations that use other indices of corruption and differing samples of countries: Knack and Keefer (1995), Mauro, (1997), Brunetti, Kisunko and Weder (1998), Brunetti and Weder (1998), Campos, Lien, and Pradhan, (1999), Mo, (2001), Lambsdorff, (2003); Pellegrini and Gerlagh, (2004).

There is also growing evidence that corruption slows down foreign direct investment. Wei (1997) showed that investment in a relatively corrupt country (Mexico), as compared to an incorrupt one (Singapore), is an equivalent of an additional 20 per cent tax on investment. Moreover, the statistical relationship between corruption and lower foreign investment holds across all regions of the world (Ades & Di Tella 1997). The view that corruption acts like a tax deterring FDI is supported by further studies of Wei (1999, 2000a, 2000b), Smarzynska and Wei (2000), Doh and Teegen (2003), Habib and Zurawicki (2001, 2002). This assertion is also true particularly in postcommunist and MENA countries. Abed and Davoodi (2002) obtain a negative impact of corruption on the value of FDI per capita for a cross-section of 24

transition countries. Sekkat and Veganzones-Varoudakis (2004) investigate the FDI in the MENA region. Their results show that trade and foreign exchange liberalization, infrastructure availability and sound economic and political conditions (among them lack of corruption) increase FDI inflows. Business executives interpret corruption as one of the taxes although one that is particularly burdensome, given the need for concealment and the uncertainty whether the bribe-taker will actually fulfil his part of the bargain and leave the company alone. All of that diminishes businesses' incentive to invest.

Corruption may also divert trade from corrupt countries. The Foreign Corrupt Practices Act of 1977 was principally to prevent corporate bribery of foreign officials by US firms. In an early investigation Beck, Maher and Tschoegl (1991) found that corruption had a small, but still significant negative impact on the export competitiveness of the USA. Accordingly, Hines (1995) shows that because of the Act, growth rates of US aircraft exports are significantly lower in destinations that are more corrupt. In a cross-country analysis, Lambsdorff (1998) finds that exporters from less corrupt countries are disadvantaged in corrupt import countries. Ades and Di Tella (1999) argue that corruption is negatively correlated with competition from foreign firms. Treisman (2000) also showed that corruption is associated with country's trade openness, but could not find convincing instruments to control for reverse causality from corruption to trade openness. Gatti (2004) suggests that the main impact of trade barriers on corruption comes through collusion between firms and customs officials. In a much more recent study Bandyopadhyay and Roy, (2006) show that corruption and lack of contract enforcement significantly increase trade protection and can have negative impact on trade openness. This was confirmed for the MENA countries in FEMISE (2006).

Figure 1 Macroeconomic Effects of Corruption



Source: Own.

Among other effects of corruption Esty and Porter (2002) and Tanzi and Davoodi (1997) claim significant evidence for over-investment in public infrastructure in relatively corrupt countries. Mauro (1997) found that if a country was able to reduce corruption by two points on a 10-point scale, government expenditures on education would rise by 1.5 percent of the GDP. In support, Gupta, de Mello, and Sharan (2000) find that higher military spending and lower healthcare and education spending in relation to GDP and total governmental expenditure, tend to be associated with higher levels of corruption. Rajkumar and Swaroop (2002) find that public health spending lowers child and infant mortality rates only in countries characterized by no corruption. Gupta, Davoodi and Alonso-Tierre (1998) demonstrate that raising the TI index by two points gives the same consequences to inequality measured by the Gini coefficient, as cutting secondary school education by as much as 2, 3 years. Li, Xu and Zou (2000) confirm that corruption increases inequality. Gupta, Davoodi and Alonso-Tierre (2002) also investigate the income growth of the bottom 20 per cent of

society. In addition, they show that as countries fight corruption, public spending on primary education becomes more effective in expanding primary education enrolment.

In many countries and especially in Post-communist and Mediterranean countries the role of the state is often carried out through the use of numerous rules or regulations. In these countries, licenses, permits, and authorizations of various sorts are required to engage in many economic activities (Kaufman 1997). The existence of such regulations and authorizations gives a monopoly power to the officials who must authorize or decide on such activities (Rose-Ackerman 1978). These officials may refuse the authorizations or may simply delay a decision for months or even years. Thus, they can use their public power to extract bribes from those who need the authorizations or permits most. Svensson (2003) argues that firms have to pay bribes when dealing with public officials whose actions directly affect the firms' business and such dealings cannot be easily avoided. Therefore it is not a fixed sum for given services, but a function of sunk costs and future profits. Firms with higher overdue payments to utilities also appear to pay higher bribes (Clarke and Xu, 2002). Fisman and Svensson (2000) show that the raised risk of investing causes companies engaged in corrupt deals to grow slower. For the gathered data, one percent of an increase in given bribe slows the growth of the company by three percent, which was an effect three times greater than the effect of a similar raise in taxation. What is more important, the researchers controlling for more and more factors observed a diminishing role of taxation and an increasing impact of bribes. Consequently, officially organized firms in Ukraine and Russia are much more probable to admit to hiding sales and salaries than firms in Central Europe (Johnson, Kaufmann, McMillan, and Woodruff 2000). Illegal enterprises are more widespread in Russia and Ukraine, and such firms hide all of their output from the official scrutiny. What's more, firms in Ukraine and Russia inform about spending more time on administrative and regulatory matters than anywhere else (18% and 25% respectively compared to about 10% for the other countries). In Ukraine and Russia generally all firms report making illicit payments, and consequently they hide a high proportion of their revenues. In Central Europe, there exist a group of firms, which operates both corruptly and unofficially, but the practice is not so widespread. McArthur and Teal (2004) use survey data to investigate the importance of corruption in determining firm performance in Africa. They find that corruption is linked to significant adverse effects on firm performance in two ways. At the firm level, companies that

pay bribes have 20 percent lower levels of output per worker; at the macro level, firms in countries with pervasive corruption are some 70 per cent less efficient than firms in countries free of corruption.

Causes of Corruption and the “Pull Effect” of the EU

The previous sections suggest that improving the control of corruption is likely to be a productive way to initiate sustained growth in the MENA region. These benefits would be even greater for those countries below the norm on the World Bank’s Control of Corruption Index. Logically, knowing root causes of corruption is a necessary condition for successful tackling of the problems associated with it, however, a whole swarm of conditions can influence patterns of corruption and its pervasiveness. There are many public policies that might influence levels of political corruption around the world, but there is relatively less theoretical work that formalizes the ways in which this might occur. Cross-country data permit one to obtain a broad overview of the underlying causes of corruption and weak governance.

The role of low development as a cause is strikingly clear in all research on the subject. The failure to control for the level of GDP is often regarded as a failure of the whole model. Among other variables, the empirical research on corruption has established that the level of competition, trade openness, state intervention, economic freedom, and foreign aid are significantly related to corruption (Ades and Di Tella, 1997; Leite i Weidman, 1999; Treisman, 2000; Paldam, 2002; Gerring and Thacker, 2005). Non-economical determinants, mostly correlated with the level of democracy, are also said to have a significant impact on the pattern of corruption – among other inequality, ethnic diversity, type of political system, voice and accountability, election participation, and freedom of the press (Sandholtz and Koetzle, 2000; Kunicova and Rose-Ackerman, 2002; Montinola and Jackman, 2002; Persson, Tabellini, and Trebbi, 2003; Reinikka and Svensson, 2005).

At the same time, empirical research focusing on regions is relatively less developed. Of the few regional studies, post communist corruption has attracted the most attention. The World Bank’s two waves of surveys of the business environment in Central and Eastern Europe document the specific ways that corrupt officials and intrusive rules affect businesses and show how corrupt environments impose onerous costs (Hellman, Jones, and Kaufmann 2003,

Johnson, Kaufmann, McMillan, and Woodruff 2000). There are broad differences in corruption and protection payments between the Commonwealth of Independent States including Russia, on the one hand, and Central Europe, on the other. An important complementary finding is established by BEEPS (2003): firms with close connections with the government did better than other firms, but countries where such connections were seen as important for business success did worse overall than those where political influence was less closely tied to economic success.

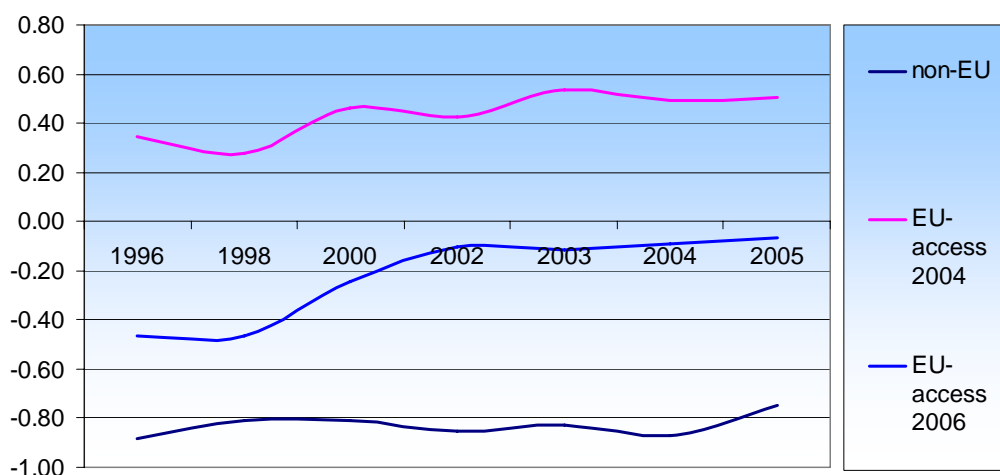
In macroeconomic empirical research, the phenomenon of postcommunist corruption has been attributed to: barriers to new businesses entry, the effectiveness of the legal system and the efficacy and competitiveness of services provided by infrastructure monopolies (Broadman and Recanatini, 2002); years spent under communism, protestant share of population, natural resource endowment, and the fact that these countries have not been an English colony (Treisman, 2003); larger share of central planning in the economy and lack of structural reforms (Goczek, 2006). Furthermore, the last author finds that fresh members of the European Union show distinctively lower levels of corruption as compared to other post communist countries, even when controlling for their higher level of development and less adverse initial conditions. This effect could be caused by adoption thousands of pages of, often almost exotic, technical law labelled "Acquis communautaire" that is adopted without any thought to it. It may be criticized on particularly that ground but this process is setting a new legal framework not prone to corrupt influences. Clearly, the UE gave a window of opportunity for a great deal of above average quality legislation and it is good that it was reasonably well used. Moreover, it seems that the EU was the driving force of the structural reforms in the region, which decreased the scope for corruption.

Corruption in candidate countries had been one of the EU's major concerns time after time, when the European Commission begun publishing its annual progress reports on candidates in 1997. The grounds for that anxiety were simple: the European legal system works (as in every democratic society) under the assumption that law will be implemented, controlled, and enforced by the public administration and judiciary of the member states (Peterson, 1997). Corruption endangers the implementation and execution of rules or makes their adoption merely formal, as that was the case. A clear implication of both the Regular Reports and the

Accession Partnerships is that the political conditions that must be satisfied for countries to enter the EU include fight against corruption.

The political conditions that candidate countries must fulfil to be allowed to access were laid down at the Copenhagen European Council in 1993. In each area covered by the document, corruption seems to have major significance. Moreover, the EU-Commission has adopted a requirement of an anti-corruption framework for all candidates. What is more important, the EU was a major force behind de-regulation in the NMS. Therefore, the EU accession process has had a major impact on corruption in candidate states. This can be seen in the Figure 2 where corruption scores of non-EU post communist countries and New Member States are compared. Note that an increase in control of corruption score pertains to an improvement in the level of governance.

Figure 2 The “Pull effect” of the EU



Source: Own calculation based on Control of Corruption Index by Kaufmann, Kraay and Mastruzzi (2006). "Governance Matters V: Governance Indicators for 1996-2005". World Bank Policy Research September 2006

In our opinion, the recent accession to the EU required from the NMS to put in place measures that enforce transparency and competition. In MENA countries, there has been a tendency for reforms and economic liberalization programs to lag. This underdevelopment of bureaucratic powers and regulation has created opportunities for rent seeking associated with

corruption. For example, upon granting private licenses for providers of mobile phone services, authorities in several countries of the region failed to put in place impartial and effective regulators. One of the consequences, according to Transparency International (2003), were discretionary powers enjoyed by private providers and state officials — an environment conducive to corruption. The MENA countries were not subject to such external influence and pressure as the European Commission had on the NMS. Hence, the position of interest groups within the MPC may allow rent-seeking behaviour through artificial barriers to entry to internal markets and discourage competition, not only among domestic producers but also from foreign exporters. Such constraints impose onerous costs to businesses, which try to make way around them by resorting to corruption. At the same time, corruption itself may reinforce the existence of these barriers and thus perpetuate itself.

To the best of our knowledge there does not exist an empirical analysis investigating corruption, focusing either on the MENA countries as a region nor any other study employing the data on business constraints. In fact, even case studies and general studies of the subject of corruption in the MENA region are very rare. Even though, there is an absence of empirical studies, few observers would disagree that the problem of corruption in the region is very heavy. In the historically state socialist countries and present monarchies, despite some level of liberalization and privatization carried out in the past couple of decades, government and bureaucratic officials still have a strong control over the economic environment. They have power over the massive public sector but also have a strong command of the private sector by means of proliferating regulation and delaying bureaucratic decisions (Salem, 2003, UNDP, 2002, and TI 2004). High levels of government control, economic monopolies, and burdensome regulations set the incentives for corruption high. This is coupled with an excessive bureaucratization of public administration and lack of its streamlining and computerization. General inefficiency of the public sector creates incentive for citizens to use corruption as a mean to speed up their transactions with the public sector. Therefore, our goal will be to explain the relationship between corruption and constraints on carrying out business. This will give us the knowledge of root causes of corruption, which is a necessary precondition for successful tackling of the problems associated with it. Our expectation is that corruption is intertwined with regulatory constraints and bureaucratic delays.

Working hypotheses

Nine hypotheses will be presented; each one is derived from either theoretical literature or historical analysis. Some arguments are given exogenously, such as the level of development or the level of democracy, since it is unlikely that any of these two are going to change significantly in the near future, while others relate directly to the regulatory environment of conducting business. Data sources for each variable used in the testing of the hypotheses are fully documented in the appendix B.

Hypothesis 1: Corruption is lower in higher economically developed countries

The economic linkage between the economic development and corruption suggested by the literature is undeniable. Corrupt deal exposure is much more probable in more economically developed countries. In addition to its clear impact on democracy, economic development improves the spread of education, literacy, and depersonalizes economical relationships — each of these ought to increase the likelihood that a misuse of public power will be detected and tackled. Therefore, the first hypothesis is that corruption will decline as the economic development improves. Note that the index of corruption is calculated with higher values pertaining to cleaner governments; hence, a strong positive relation is expected.

Hypothesis 2: Stable democratic institutions and corruption are expected to be positively correlated

Democracy is a complex phenomenon, involving not just a single attribute but a complementary set of characteristics including free and fair elections, the rule of law, respect for human and civil rights, active citizen participation in the political process. The common argument in favour of democracy connects democracy with citizens' freedom, the availability of information on examples of corruption and the voice to protest against it. Moreover, there is a significant coincidence of free markets and democracies. Even though there are some cases of spread of corruption in fresh democracies, the consolidation of democratic institutions reduces corruption in the long run. Many researchers suggest that electoral competition, checks, and balances associated with consolidated democratic systems facilitate a public scrutiny that impedes politicians' wants for private gains as they risk losing elections

and criminal prosecution. On the other hand, autocratic regimes lack this kind of incentives, which are specific to democratic accountability. The political rights index used in the estimation assigns less democratic countries with higher scores. Therefore a strong negative relation is expected in the empirical estimation.

Hypothesis 3: Corruption is associated with increasing number of bureaucratic procedures

This hypothesis is tested in four areas of economic activity: the number of procedures to deal with licenses, start up a business, enforce a contract, and to import a good. Each dimension may be somewhat different, but the general expectation is that businesses facing too many procedures will seek to avoid them by resorting to corruption. In general, it is expected that the more procedures there is, the more contacts between businesses and the bureaucracy, thus, the more incentives for bribery. Hence, a negative relationship is expected.

Hypothesis 4: Corruption rises with increasing bureaucratic delays

In a seminal study, Myrdal (1968:952-3) argued that corrupt officials purposely cause administrative delays in order to attract more bribes. A similar proposition is put forward by Rose-Ackerman (1978: 90), arguing that bureaucrats are monopolists who profit from increasing prices by deliberately creating scarcity in their services. The vast discretion that many politicians and bureaucrats enjoy over the creation, proliferation, and interpretation of such regulations gives rise to corruption. The hypothesis is tested in three areas of economic activity: the time necessary to deal with licenses, start up a business, and enforce a contract. Hence, a negative relationship is expected in the empirical investigation.

Hypothesis 5: Higher cost of administrative payments may or may not lead to higher corruption

The official costs of dealing with the bureaucracy/official administrative fees and payments are expected to have an ambiguous effect on corruption. On one hand, the businesses may simply want to escape these costs by resorting to bribes. This would mean that a negative sign is expected: higher official costs will lead to more corruption. On the other hand, the opposite effect may take place. This seems implausible, since common sense logic would argue for the opposite relationship. However, businesses prefer predictable official payments to

unpredictable informal ones and are willing to pay more of the latter. In reality, there is a substitution between this two; this reflects the trade-off between costly incorrupt bureaucracy and cheaper incorrupt one. Hence, tested variables may take either negative or positive signs in the estimation, depending on which effect will come out as the stronger one.

Methodology and Discussion of the Empirical Results

The corruption indexes come not only with a point estimate of corruption in a given country, but also with a standard error precision of the estimate. This additional data was used to produce Weighted Least Squares estimation, where weights are the inverse of the standard error of precision. This approach, proposed first by Treisman (2000) now became a standard in the literature on corruption (Treisman, 2003, Gering and Thacker, 2005, among others). This enables to give more weight to corruption scores that are more reliable in the regression. A novelty in this paper is that Jackknife robust standard errors were used in the estimation. The reason for this is a possibility of heterogeneity and correlated errors in the regression. This is important since corruption indices may be systematically biased. Both the experts and people surveyed on corruption may have consistently biased perceptions. What is not covered in the paper is that there exists a probability of causality bias. In order to tackle this, IV regression could be used, however, there are no examples of good instruments in the literature on corruption as argued by Treisman (2000). It was tested with a trimmed regression whether the results are affected by outliers and the results were consistent with those obtained without trimming. When reading the empirical testing section, it is nevertheless important to bear in mind that empirical research on corruption is still a relatively new field of inquiry. As a result, the econometric methods used in the estimations may seem to be less advanced than the techniques used in applications more original to the core of economic thought. Definitely, more discussion is needed on the subject of proper approach to the estimation of economic linkages of corruption.

Initially, the observations are pooled over the three years in the dataset and the model is estimated with Weighted Least Squares (WLS). However, it has been shown that WLS may sometimes suffer from heterogeneity bias in cross-country framework: the results of

estimation are likely to be influenced by certain unobserved individual effects. If these effects are correlated with the explanatory variables, which an examination of the WLS residuals supports, this will lead to pooled WLS estimates being biased. To counter this two most commonly employed panel models are employed: the fixed effects model (FEM) and the random effects model (REM). In the FEM, the intercept terms are allowed to vary over the countries, but are held constant over time. REM assumes that the intercepts of individual units are randomly distributed and independent of the explanatory variables. At the outset, the FEM would be expected to fit better to the corruption model context as the panel tracks countries over time and it is not realistic to consider them to be randomly drawn. If this is the case and the unobserved effects are correlated with regressors, the REM estimates will be biased. A shortcoming of the FEM is that some of the variables do not vary much over time (the number of required procedures licenses for example) and their coefficients cannot be estimated as they are dropped in the fixed effects transformation.

All of the tested methodologies provided very similar results. Both FEM and REM were estimated and their efficiency compared. The possibility of REM estimates being biased was confirmed by the Hausmann test at 1 percent level, since the null hypothesis that the REM is consistent is rejected. With this result, the REM is shown to suffer from correlation and generate biased estimates. Later, the Breusch-Pagan test was applied to the REM/FEM and compared to the pooled WLS estimator and there were no grounds to reject null hypothesis at 5 % level. This indicates that REM/FEM are less efficient estimators than the pooled WLS. As noted above, even it was likely that WLS and REM would suffer from heterogeneity bias and endogenous explanatory variables respectively; only the latter effect was confirmed to be significant. Therefore, this method was used in the empirical analysis. Table 1 presents results of the pooled WLS regression for 117 countries over three years (2003-2005).

The testing started with the two variables set exogenously: the logarithm of GDP per capita and the level of democracy proxied by the political rights variable. This pair of control variables proved to be significant both statistically and in terms of magnitude of influence on the level of corruption, as well as of the correct sign in all of the specifications. Then, dealing with licenses variables were added to the estimation. This topic tracks the procedures, time, and costs to build a warehouse, including obtaining necessary licenses and permits, completing required notifications and inspections, and obtaining utility connections. As

expected, it came out in the investigation that longer bureaucratic delays and more numerous procedures were a significant factor in the prevalence of corruption. Official costs of dealing with licenses came out significant in some of the specifications, although sometimes at lower levels of confidence. In one specification, this variable was insignificant. The positive signs in all specifications indicate that official costs of bureaucratic procedures do not play a major role in corruption, since businesses prefer predictable official payments to unpredictable informal ones so they substitute one by the other. This means that official incentive payments may be one way to achieve a less corrupt and speedier bureaucracy.

Then, the variables depicting constraints on starting up businesses were added to the estimation. The number of procedures necessary to start up a business was associated with more corruption and this relationship was significant in all specifications. The same goes for official costs of starting up businesses. The sign was the same as is in the case of official costs of dealing with licenses variables and similar conclusions could be derived from this result. However, the bureaucratic delays associated with starting up new businesses are not as important factor in corruption as other delays. One hypothesis could be that the bureaucrats do not hold as strong monopoly power over “would be” business executives/entrepreneurs, since they have not incurred yet the sunk costs associated with running a firm. It could be that if the delays simply discourage from setting up a firm at all, corruption has never the chance to occur.

The above argument may be taken further with the interpretation of the enforcing contracts variables. Here, the businesses have been already set up, the costs have been already incurred, and now business executives/entrepreneurs face a hold up problem from the bureaucrats. Therefore, they are more likely to pay a bribe to have their cases resolved earlier, since it is usually crucial for a given firm to enforce a contract on time. As a result, bureaucratic delays when enforcing contracts came out both significant and of the negative sign. The number of procedures here is not as important to get things done: most of companies have their own legal bodies solely dedicated to contract enforcement. Therefore, we get an insignificant result, even though it is of the correct sign. Other dimensions of business constraint have been tried, but only the number of procedures to import came out significant as expected. In order to avoid any critiques concerning some data mining (even though only other variables tried in the estimation concerned procedures and delays to import and export), lower significance

levels have been used to derive further conclusions. Hence, one percent level has been used in a comparison of the two regions in the concluding section.

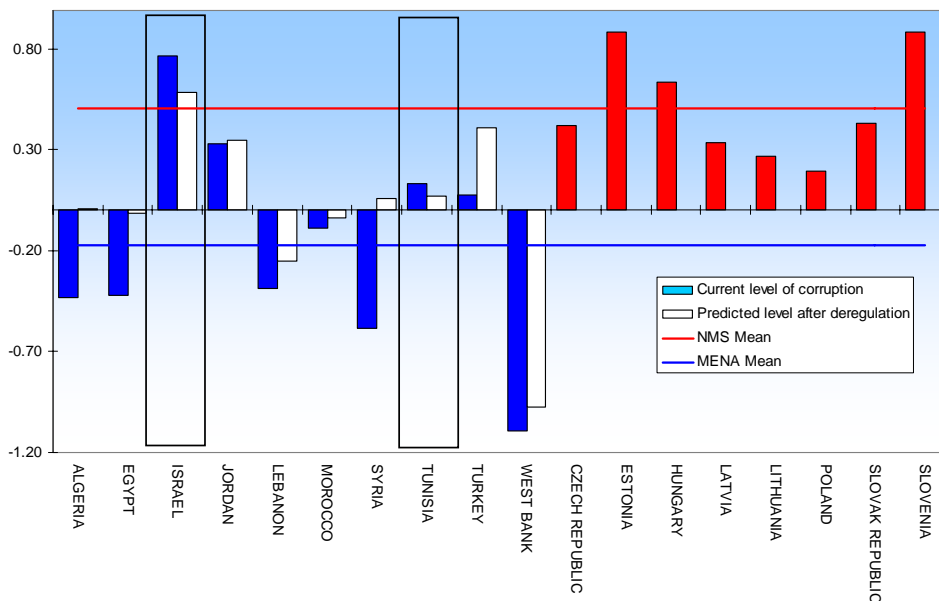
Conclusions and Policy Guidance

The results obtained in the empirical analysis are consistent with both theoretical and empirical literature on the subject. Explanatory variables proved successful in explaining the differences in corruption levels across countries. To accomplish a successful reduction in the level of corruption, liberalization and improvements in working of the bureaucracy will be required in most countries at a minimum. Decreasing the number of procedures, streamlining of the bureaucracy and other ways to limit time spent waiting for its decisions may significantly reduce corruption, even if it occurs at a higher official cost of conducting administrative procedures. However, even with reforms in the areas specified in the previous section, bureaucratic old habits die hard. Given the long history of corruption in the region, the proposed regulatory measures would probably not be sufficient to eradicate it to the level of new members of the European Union, at least not in the short term. No doubt, it may take years or even decades to bring corruption down. This lack of successful anti-corruption campaigns may be partly due to the fact that because distant past is sometimes more important than current polices. The slow process of development and installation of democratic institutions will eventually bring corruption down to the level of the ten NMS in many of the MENA countries.

Table 4 presents current level of each of the variables used in the regression for every MENA country plus an average level for the 8 NMS. Table 5 presents the difference between the average level for the 8 NMS countries and the level for each MENA country of each of the variables used in the regression. The last column labelled 'Predicted Improvement' presents an alternative scenario for policy guidance. There, the improvement is shown as a *change* in the level of corruption, not the predicted level after the change. The estimate was produced by multiplying the differences in the level of regulation by the coefficients obtained in the regression (only significant variables were used). The result is that if the MENA countries reduced their level of business regulation to that of the NMS, we would observe a predicted

fall in corruption. This fall is quite large, especially for Syria and Algeria. The improvement would move these countries almost to the level of corruption observed currently in Turkey and the improvement in corruption level in Turkey would move it to the level of corruption observed in the Czech Republic. Figure 3 shows the *levels* of corruption before and after proposed deregulation to the level of 8 NMS mean plus the current mean of corruption in the two regions.

Figure 3 Current versus predicted level of corruption



Source: Own calculation based on Control of Corruption Index by Kaufmann, Kraay and Mastruzzi (2006). "Governance Matters V: Governance Indicators for 1996-2005". World Bank Policy Research September 2006

However, Israel and Tunisia have a lower level of regulation than the 8 New Member States' average (shown in outlines in figure 3). As a result, a change in the level of regulation to the NMS8 level would mean an effective increase in regulation. Therefore, this would increase corruption instead of decreasing it. This result seems plausible too, though it is very important to remember, that post-communist countries suffer from legacies of the now obsolete system of central planning. By definition, central planning involved vast and substantial direct governmental intervention in economic decision-making. Therefore, these countries have a very high level of regulation even though liberalization is still undergoing. This is not in any way connected to the bureaucratic rigidities often ridiculed by opponents of the European

Union. In fact, the level of regulation and the time spent dealing with the bureaucracy is much lower in the EU-15 countries than in the 8 NMS by almost an order of significance.⁵⁹ Furthermore, as discussed above, the European Commission was a major force behind deregulation in many areas of economic activity in the NMS.

⁵⁹ Especially given the fact that Italy, Spain, and Portugal tend to seriously lag behind the other old members in terms of bureaucratic hold-ups.

Appendix A: Tables

Table 1. Regression Results

Variable		I	II	III	IV	V
Ln(GDP)		0.6079 (0.00) ***	0.6561 (0.00) ***	0.6703 (0.00) ***	0.6697 (0.00) ***	0.5699 (0.00) ***
Political Rights		-0.1117 (0.00) ***	-0.0810 (0.00) ***	-0.0724 (0.00) ***	-0.0753 (0.00) ***	-0.0497 (0.00) ***
Dealing with Licenses	Procedures		-0.0125 (0.01) ***	-0.0156 (0.00) ***	-0.0175 (0.00) ***	-0.0135 (0.00) ***
	Time		-0.0019 (0.00) ***	-0.0013 (0.00) ***	-0.0012 (0.00) ***	-0.0014 (0.00) ***
	Cost		0.0002 (0.09) *	0.0002 (0.01) ***	0.0002 (0.20) ***	0.0004 (0.00) ***
Starting a Business	Procedures			-0.0708 (0.00) ***	-0.0609 (0.00) ***	-0.0515 (0.00) ***
	Time			-0.0008 (0.31) ***	-0.0018 (0.20) ***	-0.0025 (0.00) ***
	Cost			0.0011 (0.00) ***	0.0010 (0.01) ***	0.0008 (0.01) ***
Enforcing Contracts	Procedures				-0.0039 (0.15) *	-0.0036 (0.06) *
	Time				-0.0004 (0.00) ***	-0.0003 (0.00) ***
	Cost				0.0020 (0.22) ***	0.0004 (0.61) ***
Import	Procedures					-0.0394 (0.00) ***
Constant		-4.8735 (0.00) ***	-4.8656 (0.00) ***	-4.5116 (0.00) ***	-4.2805 (0.00) ***	-3.1530 (0.00) ***

Note: Higher corruption score means LESS corruption, therefore a coefficient with a positive sign means that an increase in the value of the explanatory variable pertains to fall in the level of corruption.

Table 2 List of the Commonly Raised Failings of Corruption Indexes

Failing nr 1:	Only punishing the takers, not the givers or abutters
Failing nr 2:	Irregular and uncontrolled country coverage
Failing nr 3:	Biased sample: more than 90% of the world is missing in the early data
Failing nr 4:	Imprecise and sometimes ignorant sources
Failing nr 5:	Narrow and imprecise definition of corruption
Failing nr 6:	TI' s index does not measure trends – the scores are relative
Failing nr 7:	Media coverage may induce a bias in the population surveys
Failing nr 8:	Changes over time in some of the individual indicators reflect corrections of past errors rather than actual changes.
Failing nr 9:	The individual indicators underlying the indexes are biased towards the views of business elites, and thus so are the aggregate indicators
Failing nr 10:	The underlying data sources are overly influenced by recent economic performance, and/or the level of development of a country (rich, or fast-growing countries get better scores simply because they do better)
Failing nr 11:	The individual data sources underlying make correlated errors in their assessments of corruption and so are less informative about governance than they appear
Failing nr 12:	If some data sources make correlated errors, the aggregation procedure used by the WB gives too much weight to such indicators.

Source: Galtung (2005), Arndt and Oman (2006), Knack (2006), Kurtz and Shrank (2006), Kaufmann, Kraay, and Mastruzzi (2006)

Table 3 Detailed Results of the final specification (V)

	Constant	dl_cost	dl_pr	dl_t	ec_cost	ec_pr	ec_t	lngdp	pr	tab_impr	sb_cost	sb_pr	sb_t
Coef. S	-3.153	0.00042	-0.01352	-0.00136	0.00045	-0.00359	-0.00031	0.57	-0.05	-0.03942	0.00078	-0.05153	-0.00247
P> t	(0.00) ***	(0.00) ***	(0.00) ***	(0.00) ***	(0.61)	(0.06) *	(0.00) ***	(0.00) ***	(0.00) ***	(0.00) ***	(0.01) ***	(0.00) ***	(0.00) ***
	Variables used in the prediction, Significant at 1% level				Not significant at 1%			Assumed as given					

Note: Higher corruption score means LESS corruption, therefore a coefficient with a positive sign means that an increase in the value of the explanatory variable pertains to fall in the level of corruption

Table 4 Current levels of variables

Country	DL COST	DL PR	DL T	EC COST	EC PR	EC T	LNGDP	PR	TAB IMP	SB COST	SB PR	SB T	Current level of corruption
ALGERIA	70.8	25	244	10.3	49	397	8.76	6	9	25.3	14	24	-0.43
EGYPT	1067.1	30	263	18.4	55	1010	8.31	6	9	104.9	10	22	-0.42
ISRAEL	93.5	21	215	22.1	31	585	10.07	1	5	5.3	5	34	0.76
JORDAN	544.3	16	122	16.2	43	342	8.44	5	12	85.5	11	18	0.33
LEBANON	214.6	16	275	27.8	39	721	8.60	6	12	122.9	6	46	-0.39
MOROCCO	269.2	21	217	16.5	42	615	8.30	5	11	13.4	6	12	-0.09
SYRIA	359.8	20	134	21.9	47	872	8.16	7	18	34.5	12	43	-0.59
TUNISIA	1077.8	24	96	17.3	21	481	8.91	6	8	10	10	11	0.13
TURKEY	167.8	32	232	17.4	34	420	8.94	3	13	27.7	8	9	0.08
WEST BANK	559.3	20	114	20.2	26	700	6.81	6	7	243.5	12	106	-1.09
NMS -Mean	79.8	19.4	213.3	12.1	25.6	591.4	9.6	1.1	8.4	33.9	7.9	10.6	0.51
EU-15 - Mean	83.1	13.9	179.6	12.4	23.6	355	10.2	1	6.4	8.1	7.1	23.9	1.60

Table 5 Differences in the level of variables and predicted improvement at 1% level of significance (shown as change, not predicted value after the change)

Country	DL COST	DL PR	DL T	EC COST	EC PR	EC T	LNGDP	PR	TAB IMP	SB COST	SB PR	SB T	Predicted improvement
ALGERIA	9.0	-5.6	-30.8	1.8	-23.4	194.4	-8.8	-6.0	-0.6	8.6	-6.1	-13.4	0.44
EGYPT	-987.3	-10.6	-49.8	-6.3	-29.4	-418.6	-8.3	-6.0	-0.6	-71.0	-2.1	-11.4	0.40
ISRAEL	-13.7	-1.6	-1.8	-10.0	-5.4	6.4	-10.1	-1.0	3.4	28.6	2.9	-23.4	-0.18
JORDAN	-464.5	3.4	91.3	-4.1	-17.4	249.4	-8.4	-5.0	-3.6	-51.6	-3.1	-7.4	0.02
LEBANON	-134.8	3.4	-61.8	-15.7	-13.4	-129.6	-8.6	-6.0	-3.6	-89.0	1.9	-35.4	0.14
MOROCCO	-189.4	-1.6	-3.8	-4.4	-16.4	-23.6	-8.3	-5.0	-2.6	20.5	1.9	-1.4	0.05
SYRIA	-280.0	-0.6	79.3	-9.8	-21.4	-280.6	-8.2	-7.0	-9.6	-0.6	-4.1	-32.4	0.65
TUNISIA	-998.0	-4.6	117.3	-5.2	4.6	110.4	-8.9	-6.0	0.4	23.9	-2.1	-0.4	-0.06
TURKEY	-88.0	-12.6	-18.8	-5.3	-8.4	171.4	-8.9	-3.0	-4.6	6.2	-0.1	1.6	0.33
WEST BANK	-479.5	-0.6	99.3	-8.1	-0.4	-108.6	-6.8	-6.0	1.4	-209.6	-4.1	-95.4	0.12

Note: Higher corruption score means LESS corruption.

Table 6 Predicted improvement (shown as change, not predicted value after the change) at various levels of significance of explanatory variables

Country	Predicted Improvement in the Level of Corruption	
	at 1% level of significance	at 5% level of significance
ALGERIA	0.44	0.52
EGYPT	0.40	0.51
ISRAEL	-0.18	-0.16
JORDAN	0.02	0.07
LEBANON	0.14	0.19
MOROCCO	0.05	0.11
SYRIA	0.65	0.72
TUNISIA	-0.06	-0.08
TURKEY	0.33	0.35
WEST BANK	0.12	0.12

Table 6 Predicted vs. Current Levels of Corruption in Selected Countries

Region	Country	Current level	Predicted level
MENA	ALGERIA	-0.43	0.01
	EGYPT	-0.42	-0.02
	ISRAEL	0.76	0.58
	JORDAN	0.33	0.35
	LEBANON	-0.39	-0.25
	MOROCCO	-0.09	-0.03
	SYRIA	-0.59	0.06

	TUNISIA	0.13	0.07
	TURKEY	0.08	0.41
	WEST BANK	-1.09	-0.98
EU-8	CZECH REPUBLIC	0.42	
	ESTONIA	0.88	
	HUNGARY	0.63	
	LATVIA	0.33	
	LITHUANIA	0.26	
	POLAND	0.19	
	SLOVAK REPUBLIC	0.43	
	SLOVENIA	0.88	
EU-14	AUSTRIA	1.99	
	BELGIUM	1.45	
	DENMARK	2.23	
	FINLAND	2.39	
	FRANCE	1.4	
	GERMANY	1.92	
	GREECE	0.4	
	IRELAND	1.7	
	ITALY	0.41	
	NETHERLANDS	1.99	
	SWEDEN	2.1	
	UNITED KINGDOM	1.94	
	PORTUGAL	1.13	
SPAIN	1.34		

Appendix B: Definitions and Sources of the Variables

The data used in the empirical investigation has been compiled from four sources: Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi (2006). "Governance Matters V: Governance Indicators for 1996-2005". World Bank Policy Research September 2006, Freedom in the World Index, Freedomhouse 2007, World Development Indicators, 2007, and various of issues World Bank's Doing Business Indicators.

Corruption

The World Bank's Control of Corruption Index reflects a statistical compilation of responses on corruption given by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries, as reported by a number of survey institutes, think tanks, non-governmental organizations, and international organizations. Source: Daniel Kaufmann, Aart Kraay and Massimo Mastruzzi (2006). "Governance Matters V: Governance Indicators for 1996-2005". World Bank Policy Research September 2006

Ln GDP

Natural logarithm of GDP per capita in PPP, Source: World Development Indicators, 2007.

Political rights

A standard Freedomhouse index of Political Rights (denoted as PR in the tables) is used. It is designed to measure the level of democracy in a given country alongside civil liberties index. However, the latter includes corruption as one of the underlying indicators, therefore only the former is used. Source: Freedomhouse.org

Starting a Business

This topic identifies the bureaucratic and legal hurdles an entrepreneur must overcome to incorporate and register a new firm. It examines the procedures, time, and cost involved in launching a commercial or industrial firm with up to 50 employees and start-up capital of 10 times the economy's per-capita gross national income (GNI). Three main indicators are used. They include:

SB_PR all procedures required to register a firm,
SB_T average time spent during each procedure,
SB_COST official cost (without corruption) of each procedure.

Source: Doing Business, various issues.

Dealing with Licenses

This topic tracks the procedures, time, and costs to build a warehouse, including obtaining necessary licenses and permits, completing required notifications and inspections, and obtaining utility connections. Observations from earlier years were missing. Therefore after regressing data from two years that this variable does not change much over time, it was assumed in the investigation that it does not change. The following main indicators are used. They include:

DL_PR all procedures to build a warehouse,
DL_T average time spent during each procedure, and
DL_COST official cost of each procedure.

Source: Doing Business, various issues.

Enforcing Contracts

This topic looks at the efficiency of contract enforcement by following the evolution of a sale of goods dispute and tracking the time, cost, and number of procedures involved from the moment the plaintiff files the lawsuit until actual payment. Three main indicators for enforcing contracts are:

EC_T time in calendar days to resolve the dispute,
EC_COST cost in court fees and attorney fees, where the use of attorneys is mandatory or common, expressed as a percentage of the debt value,

EC_PR number of procedures from the moment the plaintiff files a lawsuit in court until the moment of payment.

Source: Doing Business, various issues.

Trading Across Borders

This topic looks at the procedural requirements for exporting and importing a standardized cargo of goods. Every official procedure is counted -- from the contractual agreement between the 2 parties to the delivery of goods. There are two main indicators:

TAB_IMPR number of procedures required to import goods,

TAB_EXPR number of procedures required to export goods.

Source: Doing Business, various issues.

Appendix C: List of Countries in the Sample

EU-8:

CZECH REPUBLIC, ESTONIA, HUNGARY, LATVIA, LITHUANIA, POLAND, SLOVAK REPUBLIC, SLOVENIA.

MENA:

ALGERIA, EGYPT, ISRAEL, JORDAN, LEBANON, MOROCCO, SYRIA, TUNISIA, TURKEY, WEST BANK.

EU-15:

AUSTRIA, BELGIUM, DENMARK, FINLAND, FRANCE, GERMANY, GREECE, IRELAND, ITALY, NETHERLANDS, SWEDEN, UNITED KINGDOM, PORTUGAL, SPAIN.

All Countries in the sample:

AFGHANISTAN, ALBANIA, ALGERIA, ANGOLA, ANTIGUA AND BARBUDA, ARGENTINA, ARMENIA, AUSTRALIA, AUSTRIA, AZERBAIJAN, BANGLADESH, BELARUS, BELGIUM, BELIZE, BENIN, BHUTAN, BOLIVIA, BOSNIA-HERZEGOVINA, BOTSWANA, BRAZIL, BULGARIA, BURKINA FASO, BURUNDI, CAMBODIA, CAMEROON, CANADA, CAPE VERDE, CENTRAL AFRICAN REPUBLIC, CHAD, CHILE, CHINA, COLOMBIA, COMOROS, CONGO, Congo Dem. Rep. (Zaire), COSTA RICA, CROATIA, CZECH REPUBLIC, DENMARK, DJIBOUTI, DOMINICA, DOMINICAN REPUBLIC, ECUADOR, EGYPT, EL SALVADOR, EQUATORIAL GUINEA, ERITREA, ESTONIA, ETHIOPIA, FIJI, FINLAND, FRANCE, GABON, GAMBIA, GEORGIA, GERMANY, GHANA, GREECE, GRENADA, GUATEMALA, GUINEA, GUINEA-BISSAU, GUYANA, HAITI, HONDURAS, HONG KONG, HUNGARY, ICELAND, INDIA, INDONESIA, IRAN, IRAQ, IRELAND, ISRAEL, ITALY, IVORY COAST, JAMAICA, JAPAN, JORDAN, KAZAKHSTAN, KENYA, KIRIBATI, KOREA, SOUTH, KUWAIT, KYRGYZ REPUBLIC, LAOS, LATVIA, LEBANON, LESOTHO, LITHUANIA, MACEDONIA, MADAGASCAR, MALAWI, MALAYSIA, MALDIVES, MALI, MARSHALL ISLANDS, MAURITANIA, MAURITIUS, MEXICO, MICRONESIA, MOLDOVA, MONACO, MONGOLIA, MOROCCO, MOZAMBIQUE, NAMIBIA, NEPAL, NETHERLANDS, NEW ZEALAND, NICARAGUA, NIGER, NIGERIA, NORWAY, OMAN, PAKISTAN, PALAU, PANAMA, PAPUA NEW GUINEA, PARAGUAY, PERU, PHILIPPINES, POLAND, PORTUGAL, PUERTO RICO, ROMANIA, RUSSIA, RWANDA, SAMOA, SAO TOME AND PRINCIPE, SAUDI ARABIA, SENEGAL, SERBIA AND MONTENEGRO, SEYCHELLES, SIERRA LEONE, SINGAPORE, SLOVAK REPUBLIC, SLOVENIA, SOLOMON ISLANDS, SOUTH AFRICA, SPAIN, SRI LANKA, ST. KITTS AND NEVIS, ST. LUCIA, ST. VINCENT, AND THE GRENADINES, SUDAN, SURINAME, SWAZILAND, SWEDEN, SWITZERLAND, SYRIA, TAIWAN, TAJIKISTAN, TANZANIA, THAILAND, TIMOR, EAST, TOGO, TONGA, TRINIDAD AND TOBAGO, TUNISIA, TURKEY, UGANDA, UKRAINE, UNITED ARAB EMIRATES, UNITED KINGDOM, UNITED STATES, URUGUAY, UZBEKISTAN, VANUATU, VENEZUELA, VIETNAM, WEST BANK, YEMEN, ZAMBIA, ZIMBABWE

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