

# An assessment of trade and investment flows between Turkey and the European Union: Perspectives on future political integration

Ricardo Bustillo Mesanza

*Department of Applied Economics V., Faculty of Economics. University of the Basque Country, Avda. Lehendakari Aguirre 83. 48015 Bilbao, Spain  
e-mail: ricardo.bustillo@ehu.es*

Carlos Rodríguez González

*Department of Applied Economics V., Faculty of Economics. University of the Basque Country, Avda. Lehendakari Aguirre 83. 48015 Bilbao, Spain  
e-mail: carlos.rodriguezg@ehu.es*

## Abstract

The last three decades have witnessed a deep change in Turkish economic integration with the world economy, and have also caused an impact in the bilateral relationship with the European Union. The political challenge of accession to the European Union has demanded an important shift in order to favour structural changes in the Turkish economy and the involvement of society in those transformations. The growth in foreign trade and direct investment figures is a consequence of trying to accomplish these objectives. However, especially in comparison to the level attained by Central and Eastern European countries, there are still outstanding possibilities for a closer commercial and industrial connection with the European Union and in general with the most developed OECD countries. In this research we use a panel data econometric specification, based on the gravity model, in order to identify the main determinants of Turkish exports and foreign direct investment inflows. Results reveal that labour cost differences and joint market size are among the main factors behind those bilateral flows.

*Keywords:* economic integration, foreign trade, foreign direct investment.

*JEL classification:* F15, F20, O52.

## 1.- Introduction

Turkey has shown a clear willingness in its attempt to become a new member country of the European Union (EU), from the moment of the signature of the Association Treaty, in 1963. Much later, in 1996, Turkey

managed to build a Customs Union together with the EU, and in October of 2005 Turkey started negotiations aimed at settling the details of the future accession, something that at least clarified the accession outlook to a certain extent. However, there is no timetable for accession, but just the commitment from the EU to ease the enlargement procedure as long as Turkey adapts its legislation to the “*acquis communautaire*”. From that moment on, the EU will decide whether Turkey is accepted as a new member country or not, but not before 2015.<sup>1</sup>

Turkey has finished profound reforms in several economic policies that permit fulfilling the Copenhagen criteria which are needed to start the negotiations, and has adopted many of the chapters in which the “*acquis communautaire*” has been divided as a means of structuring the negotiation and checking the fulfilment of the above mentioned criteria (Marchetti, 2006). Besides, the Customs Union Agreement and the general legislation on foreign direct investment (FDI) provide an environment of free circulation for goods and investment with the EU.

Nevertheless, the Customs Union is only applied to industrial products trade, whereas agricultural products remain out of the agreement.<sup>2</sup> Coal and Steel receive special treatment due to the establishment of a bilateral free trade zone, which has not meant the creation of a common tariff. On the other hand, the EU has continued applying anti-dumping and anti-subsidy rules against some Turkish goods that could harm European industrial activity, such as textiles’ manufactures. As a response, Turkey has used technical barriers as a protection instrument against some imports from the EU (Togan et al., 2005).<sup>3</sup>

A liberalization of FDI flows has taken place after the approval of the new law in 2003, a step forward that has meant an opening of the Turkish financial account similar to the legislation existing in EU member countries (Mark et al. 2005). Other legal developments related to international economic links are the 36 bilateral Double Taxation Conventions and 56 bilateral Foreign Investment Conventions.

But the most critical chapters of the EU common legislation are still far from being applied to Turkish law. Turkey should reform its Commerce,

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<sup>1</sup> The EU has established that only when the EU Financial Perspectives for the period 2014-2020 are approved will the negotiations conclude, as a result of the possible financial impact Turkish accession can produce.

<sup>2</sup> The Agriculture Common Policy prevents from a greater liberalisation in agriculture trade; however, a non reciprocal preferential treatment is conceded by the EU, though restricted to maximum import quotas as it expressed in Togan (2004).

<sup>3</sup> Anyway, the trade liberalisation that has taken place up to now has permitted Turkey to benefit from its comparative advantages, as Turkey has joined to the vertical international distribution of industrial production. The opening of frontiers all around the European continent will create a new Paneuropean Zone where every industrial labour can be vertically integrated. This new Paneuropean Free Trade zone is also provided with origin cumulation agreements that allow the localization of every component of the product’s value chain following the comparative advantages of each territory (Kaminsky and Ng, 2006).

Industrial and Trade related property rights legislation, the taxation system, as well as the labour, monetary, industrial and competition laws. The adoption and the application of these legal changes will provide Turkey with a stable and foreseeable economic establishment, with a positive effect on overall business environment “It is at this stage that one of the most important benefits from EU accession will be realized by Turkey: the rule of law and competition related constraints will be eased even further, with concomitant increases in private investment flows.”(Mark et al. 2005, pp. 288-289).

The improvement in the business environment critically depends upon macroeconomic stability. This is not a necessary condition for accession. But the inclusion of Turkish Central Bank in the European System of Central Banks (ESCB) and the long-run accession perspective to the European Monetary Union as well as the fiscal adjustment ordered by the International Monetary Fund will establish the fundamentals for maintaining the stable macroeconomic environment enjoyed from 2001 up to now. This route will still be difficult and plenty of obstacles remain for the emergent Turkish economy.

To summarize, accession to the EU and the financial commitment with the International Monetary Fund after 2001 has suggested that the Turkish government should adopt economic liberalization measures and create an institutional structure similar to that existing in the developed nations’ markets. However, despite Washington Consensus’ orientations application, economic growth remains unstable and macroeconomic imbalances persist.

After this introduction, in the second chapter, the relevance of an increase in the volume of exports and foreign investment inflows in order to avoid higher current account deficits and to reverse the tendency towards currency depreciation is clearly proved. In the third chapter, both trade and FDI figures are analysed. Whereas in the fourth and fifth chapters the factors that explain trade and investment flows towards the Turkish economy are more closely examined. The sixth and last part is devoted to summarize the most relevant conclusions of this research.

## 2. Economic performance, trade and foreign investment: Trends and perspectives

The recent macroeconomic performance in Turkey has been influenced by two main elements. First, as Turkey can be considered an emerging economy, it suffers from economic crises that balance the previous periods of strong development. As the economic cycle moves forward, the current account deficit soars until a depreciation of the currency occurs. This provokes a sudden economic stagnation; the economy benefits from this correction in the local rate of exchange, having consequently established the new fundamentals for another period of growth. At the beginning of this decade, the real gross domestic product decreased by 6 per cent in 2001 after

the last financial crisis, that led to an opportunity for economic recovery during the following years. The second element with a remarkable influence over economic performance is the perspective of accession to the EU. All the forecasts underline the fact that future accession will imply an important boost to the economy, partly due to an increase in direct investment flows and social and politic stability.

The Turkish economy has also suffered a tendency towards budget deficit increases<sup>4</sup>. Throughout the nineties the Turkish Monetary Authorities favoured the appreciation of the Turkish lira, in order to attract portfolio investments and to easily find foreign investors for the public debt. This is a common way of avoiding currency risk that is implicit in every investment in emerging countries (Togan, 2005). But this kind of economic policy also has an important drawback: when current account deficit reaches a certain value as a percentage of GDP (around 10%), as happened in 2001, the depreciation of the national currency causes foreign capital to exit from the Turkish financial market. The usual response from governments in this situation is to raise the rate of interest to make investments in national assets more attractive. However, this policy eventually provokes deep economic stagnation.

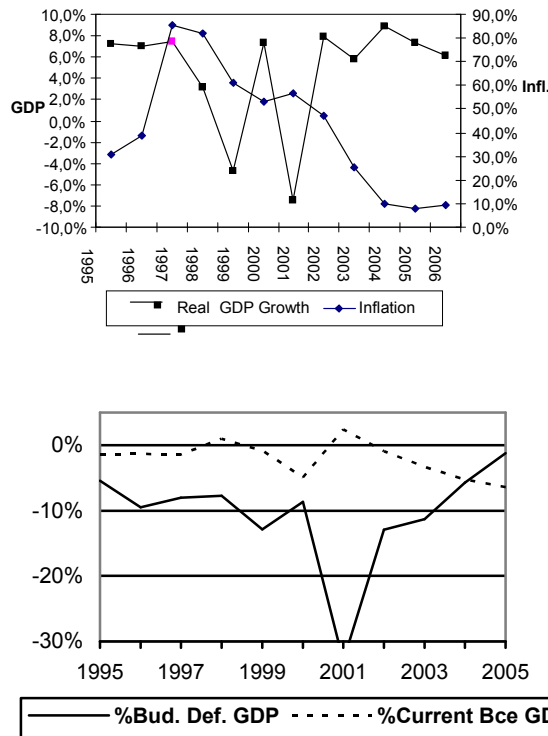
The Turkish government's commitments to reforming governance, which has been established as a condition for accession, have improved the macroeconomic performance, up to the point that some researchers view the EU legislation application as the end of turbulence in economic growth (Togan et al. 2004). Despite recent improvements in inflation and unemployment, the Turkish economy still shows a high rate of unemployment (near 10%) and a relatively large inflation gap with EU (figure 1).

From 1980, the Turkish government abandoned the protectionist alternative that implied the "import substitution industrialization strategy" or "inwards development", choosing the option of liberalising its commercial policy, as export promotion strategies became more successful in Asian countries. That alternative had the advantage of granting access to the European market in the long run. The Central and Eastern European Countries' (CEEC) conversion to market economies provided an exit for Turkish products in their attempt to penetrate the European Common Market. Through the last 25 years, the opening of the Turkish economy has been reflected in the increase of the share of trade flows over GDP. For an economy of the size and the level of development of Turkey, the share of GDP for either exports or imports should reach 25%.

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<sup>4</sup> However, some studies like Gurbuz et al. (2005) do not find a long term relationship between budget deficits increases and economic growth in Turkey.

**Figure 1**  
Macroeconomic Trends in the Turkish Economy: 1995-2005



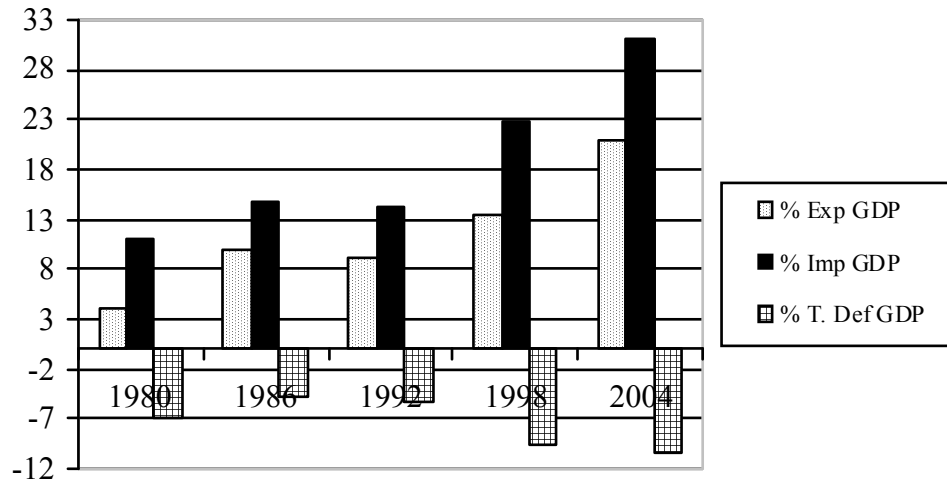
Source: Eurostat, 2007; OECD, 2007 and own calculations.

As it can be observed in Figure 2, although there has been a clear opening to foreign trade since 1980, when the share of exports over GDP was hardly higher than 4% it must be added that the percentage reached in 2004 (21%) ought to be increased. Other countries with similar economic and geopolitical dimensions such as Poland, (with a past that was equally characterized by protectionism) have attained a much higher share of exports over GDP, nearly 30%.

The gradual opening of the Turkish economy has caused a more intense relationship with the EU, which has become Turkey's main trade partner. As observed in Figure 3, whereas in the second half of the nineties trade flows with the EU caused an important trade deficit in Turkey, in the last five years the bilateral relation is almost balanced: 52% of exports are sold in the EU while only 42% of imports had their origin in the EU during 2004. Therefore, it is difficult to blame the EU for the increase in the Turkish current account deficit, which has reached 10% of GDP in recent years<sup>5</sup>.

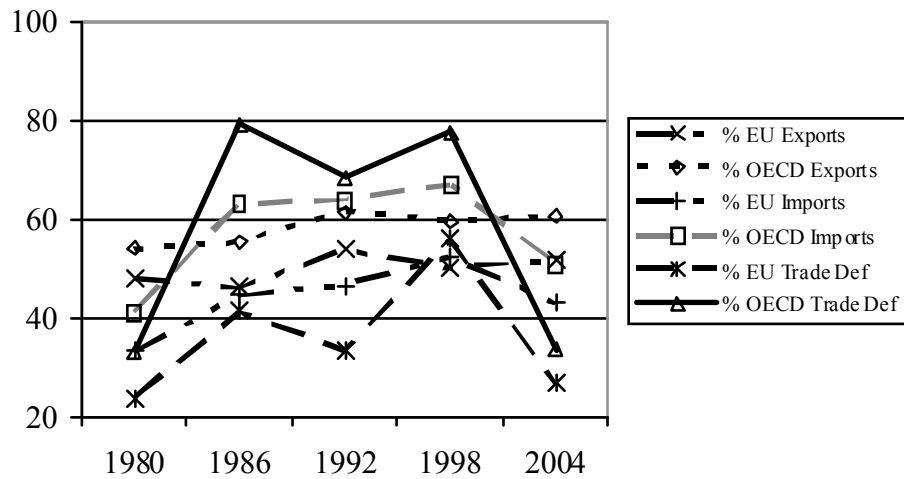
<sup>5</sup> Something similar has happened to the trade figures between the CEEC and the rest of the EU in recent years. CEEC countries showed a 6% (GDP share) trade deficit with the EU in 1995,

**Figure 2**  
Foreign Trade Flows Shares over GDP, 1980-2004  
Shares over total imports and Exports. Current Prices



Source: United Nations, COMTRADE, 2007 and own calculations

**Figure 3**  
EU and OECD Shares over Turkish Foreign Trade  
Shares over total imports and Exports. Current Prices



Source: United Nations, COMTRADE, 2007 and own calculations

which became a surplus in 2004. This phenomenon has occurred without excessively intense movements in bilateral exchange rates and in spite of the worsening of price competitiveness due to inflation differentials. The intensive process of industrial investment that has taken place in these countries is mainly responsible for the trade surplus.

Attracting more investment inflows to Turkey may require a reduction in current imbalances in order to avoid financial crises that deter foreign investment. The EU has been reluctant to invest in Turkey until now, as suggested by the current level of European FDI. Economic integration towards the EU has occurred as a consequence of increasing trade flows, but not as a result of the access of European capital flows to the Turkish economy.

Having reached this point, it must be explained that until recently the basic legislation on foreign investment flows (Law of 1954) was extremely restrictive: prior approval of investment projects, limits to foreign participation, many activity branches closed to the FDI, etc.<sup>6</sup> From the beginning of the second half of the nineties a small scale reform started, but the definitive decision of liberalizing and favouring FDI flows happens when the so-called “Action Plan” was launched by the Foreign Investment General Direction, that meant the creation of an Agency for Investment Promotion in 2002 and the new FDI Law of 2003.

**Table 2**  
FDI inflows as a share of GDP

	1980-1990	1990-2000	2000-2003	1980-2003
World	0.66	1.43	2.76	1.33
EU	0.66	1.88	5.12	1.91
Turkey	0.20	0.46	1.01	0.44
Czech Republ.	--	4.21	8.01	5.59
Hungary	0.11	7.82	5.18	4.98
Poland	0.02	2.24	3.25	1.48

*Source:* UNCTAD, 2007 and own calculations

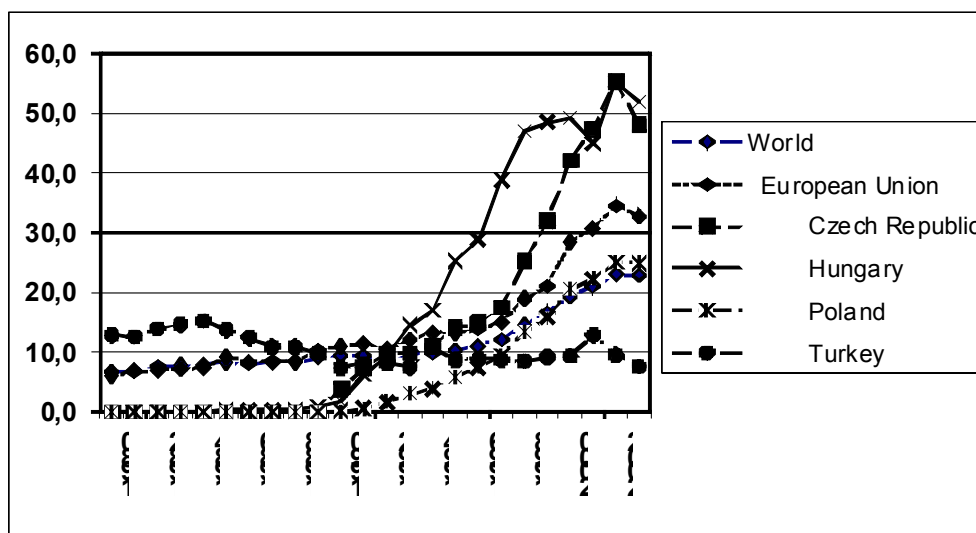
However, this effort has not yet meant an increase in FDI inflows, and as seen in table 2, FDI flows remain at a low level compared to the rest of the world, especially the CEEC inflows. During the whole period of time considered, FDI inflows do not reach 0.5% of GDP. This share is well below that corresponding to Turkish real weight in world GDP.<sup>7</sup>

The analysis of aggregated stocks suggests the same conclusions. As we can observe in Figure 4, whereas world cumulated FDI stocks reach 20%

<sup>6</sup> The historical ambivalence of Turkey towards FDI can be explained by the common feeling that it would foster a dependance from foreign capital, at least from the popular and the Army's point of view. That feeling has its origin in the “Capitulations” which permitted foreign governments to control the people with foreign nationality but residing in Turkey, until the abolition of this measure with the Lausanne Treaty (1923), once the foundation of the Republic of Turkey takes place (Erdilek, 2003).

<sup>7</sup> In the ranking of 130 countries published by UNCTAD, where “FDI Attraction Index” is measured (ratio between the country's share in world FDI and its share in world GDP), Turkey is found between the 106 and 112 position (similar to Sierra Leone, Iran or Pakistan) from the eighties. This position corresponds to an index of 0.505, 0.268 and 0.281 for the periods 88-90, 1999-2001 y 2002-2004 respectively.

**Figure 4**  
FDI Stock received as a share of GDP



Source: UNCTAD, 2007 and own calculations

of GDP from the year 2000 and after the investment boom in the nineties, Turkey Stocks' share of GDP is only 10%.

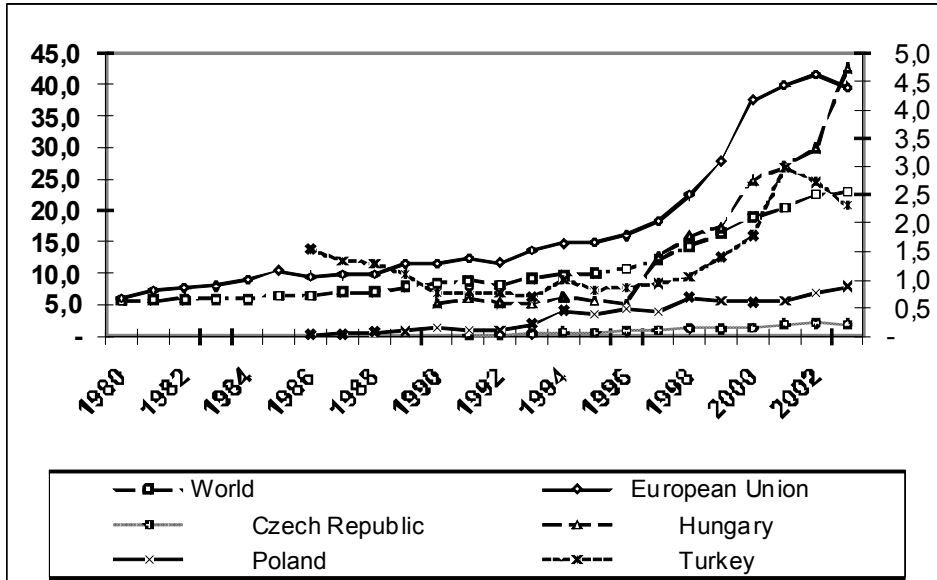
The absorption of FDI has been much greater in CEEC like the Czech Republic, Poland or Hungary, as they received high amounts of foreign capital through the process of conversion to market economies. Privatizations have offered multinational companies the opportunity to invest in Central Europe. At the same time Turkey has lost attractiveness for foreign capital from the nineties onwards.

Turkish FDI outflows are not very different from those observed in other countries with a similar level of technological development. This is the main explanation for the internationalization capacity of national companies. The cumulated FDI issued by Turkey has ebbed around 1% for the whole period of time considered.

In relation to the geographical origin of direct investment flows FDI in the Turkish financial market has come mainly from the EU and the other OECD countries, as it happens in other emerging countries and is seen in Figure 6. However, the downward trend suffered by the OECD weight over total FDI from the end of the nineties and the erratic share corresponding to the EU throughout the whole period show a sharp contrast in comparison to the situation in the Central and Eastern European Countries. In Eastern Europe EU investment has benefited from a strong increase in the nineties. In fact, it seems a paradox that the decline in the EU inflows share in Turkey coincides with the Customs Union signature in 1996 and the EU Council Agreement on Turkish accession in March of 2001.

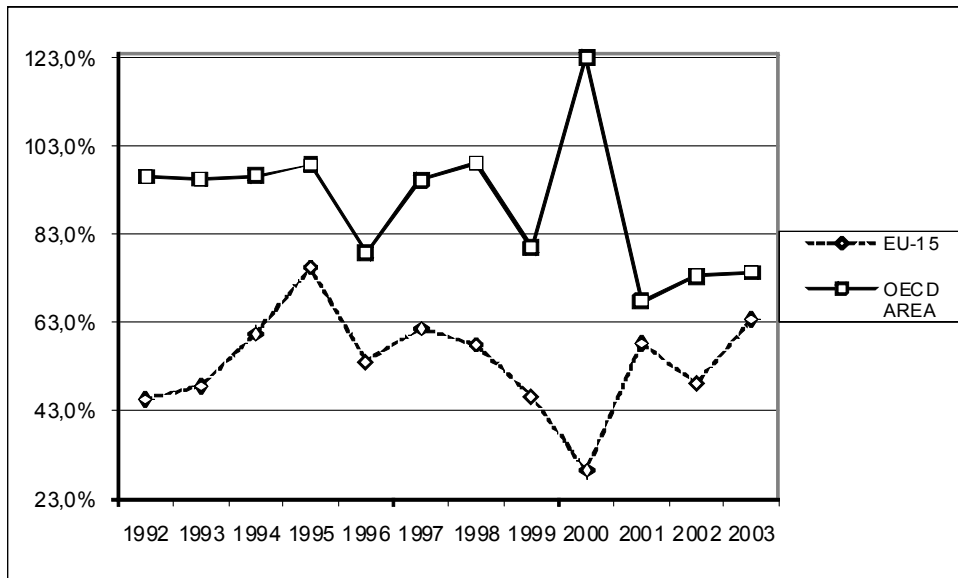


**Figure 5**  
 FDI Stock issued as a share of GDP  
 (World and EU left axis)



Source: UNCTAD, 2007 and own calculations

**Figure 6**  
 Geographical Distribution of FDI inflows into Turkey



Source: OECD, 2007 and own calculations.

### 3. Factors explaining Turkish Exports

As expressed above, one of the main problems that governments in emergent countries face is the tendency towards a broadening of current deficit while the expansive phase of economic cycle advances. That evolution in payments can conclude in a financial crisis, with the unavoidable consequences of depreciation in national currency and a rise in interest rates.

Therefore, the analysis of the elements that explain a country's volume of exports is one of the key instruments aimed at avoiding unsustainable current imbalances.

With this purpose, we have used a gravity model so that we can reach a better understanding of the main variables which exert an influence over Turkish exports. The first definition of the gravity model or gravity equation comes directly from Tinbergen (1962), and its first empirical use was accomplished by Poyhonen (1963). From that moment both theoretical economic models as well as the empirical techniques have witnessed a remarkable development and improvement.<sup>8</sup>

From the end of the sixties, especially after Anderson (1979) contribution, the gravity equation models included the new theory of international trade, and in consequence managed the conversion of the gravity equation from a simple empirical formulation to a well explained theory of the behaviour of trade in international markets. Well known concepts like increasing returns of scale, product differentiation or imperfect competition in world markets begun to take part in the usual framework employed in gravity equations.

In this chapter the model developed by Mátyás (1997) is used to estimate exports, as well as another alternative formulation aimed at distinguishing between the factors that identify complementary specialization from other factors related to intra-industry trade flows.

The results based on the Mátyás (1997) model have been computed using the following expression:

$$\begin{aligned}
 LEXP_{it} = & \beta_0 + \beta_1 LGDPM_{it} + \beta_2 LPOPM_{it} + \beta_3 LGDPX_{Tt} + \beta_4 LPOPX_{Tt} \\
 & + \beta_5 LDIST_{iT} + \beta_6 Cont_{iT} + \beta_7 EU_i + \alpha_i + \lambda_t + u_{it}
 \end{aligned} \tag{i}$$

This model explains bilateral trade flows through variables determining purchasing power (GDP), the country's dimension (Population) or obstacles to trade (basically geographical distance and political integration). The gravity model has been built over a panel of data with 249 observations, corresponding to the Turkish exports to 23 countries from

<sup>8</sup> Some gravity model empirical studies based on Turkish foreign trade data have been published so far, like Antonucci, D. and S. Manzocchi (2006).

1992 to 2002; the employment of data that do not change through the years like the “dummy variables” or the distance suggested the use of the random effect estimation of the fixed effects. The four models have been estimated using the same procedure (see Annex 1 for variables specification and properties). The estimation results are summarized in Table 3 in columns one and two.

As may be observed in table 3, for all the specified models the variables with a greater impact on Turkish exports, in line with the gravity models, are invariantly market size of the importing/exporting countries (GDP) and geographical distance between commercial partners (DIST).

More concretely, Turkish exports are inversely related to distance, because this is a proxy variable for the transport costs, which are especially important for economies like the Turkish whose products are still very sensitive to price competitiveness. Moreover, a negative relationship with the national GDP is observed, which can be interpreted as a result of the tendency to increase Turkish exports when there is a decline in domestic demand. Immediately after the financial crises a depreciation of national currency usually happens, what provokes a rise in exports that at least partially offsets the decrease in national demand. The positive relationship between exports and the importer country’s GDP is logical, while the negative coefficient of the import country’s population reflects the relative importance of the European developed markets, whose population’s growth has been negligible. In relation to the dummy variables included in the models, the only one that shows a statistically significant coefficient is the “Muslim Dummy”, which highlights the commercial dynamism of Turkey with other nations whose most important religion is Islam.<sup>9</sup>

In models 3 and 4 the two main elements that explain Turkish export flows are taken into consideration, the first one related to the relative factor endowment or Heckscher-Ohlin effect, measured by the squared difference between each of the commercial partners’ GDP per capita. The second element is related to the new trade theory and the intra-industry specialization defined by Balassa (1966), which explains those commercial flows that are not explained by differences in factor endowments and that reveal a scarce bilateral complementarity. Those export flows are developed in non competitive markets, where companies manage to improve their position through product differentiation, as Linder (1961) foresaw. The product differentiation, either vertical or horizontal, demands selling in big enough markets, with the purpose of making profitable the expensive investments necessary to finance access to foreign markets. Therefore, big markets are the main destinies of this kind of internationalization. In line with the previous explanation, the exogenous variable chosen in order to measure the “Linder effect“ is the GDP.

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<sup>9</sup> The negative coefficient of the Contiguity dummy variable is due to the conflict between Turkey and Greece, favoured by the difficult coexistence in Cyprus.

Models 3 and 4 would adopt the following form:

$$\begin{aligned} LEXP_{it} = & \beta_0 + \beta_1 LGDP_{it} + \beta_2 LDIST_i + \beta_3 LDfGDPpc^2_i \\ & + \beta_4 Cont_i + \beta_5 EU_{ij} + \alpha_i + \lambda_t + u_{it} \end{aligned} \quad (ii)$$

Results obtained are shown in table 3. The importer country's GDP appears as a relevant explanatory variable, which allows understanding a bilateral commerce explained by causes different from the factor endowments, such as market size, due to the possibility of obtaining economies of scale inside one foreign market. The square difference between trade partners' per capita GDP also computes a positive and statistically significant coefficient, a result that unveils an inter-industrial relationship with the more developed nations. In relation to the dummy variables, the only one that has a positive and statistically significant coefficient is the Muslim Dummy. To summarize, in the model not only can we observe the factors' endowment relevance in explaining commercial flows, but also other elements like the relative size of markets.

**Table 3**  
Gravity Equation for Turkish Exports, 1992-2002

	Model 1	Model 2	Model 3	Model 4
LDIST	-1.842444*** (-6.77)	-1.475991*** (-8.78)	-1.769058*** (-6.70)	-1.471304*** (-8.38)
LGDPM	0.851909*** (6.29)	0.955701*** (8.37)	0.685402*** (5.98)	0.806592*** (7.48)
LPOPM	-0.283975* (-1.81)	-0.270211* (-2.01)	--	--
LGDPX	-1.318457* (-1.91)	-1.320440* (-1.92)	--	--
LPOPX	7.151522 (5.79)	6.989687 (5.67)	--	--
LDfGDPpc <sup>2</sup>	--	--	0.069050** (1.43)	0.065107** (1.45)
Cont	-0.878142 (-1.5)	--	-0.708924 (-1.26)	--
EU (Dummy)	-0.653002 (-1.38)	--	-0.452290 (-1.07)	--
EU (Medit. Dummy)	--	-0.381520 (-1.16)	--	-0.203230 (-.63)
EU (Muslim Dummy)	--	0.946106** (2.27)	--	0.880944** (2.11)
Adjusted R <sup>2</sup>	0.922291164	0.922055705	0.923005634	0.92287745
Observations	249	249	249	249

Between brackets "t" statistics; \*, \*\* and \*\*\* signal statistically significant parameters at 10, 5 and 1% respectively.

#### 4. Factors explaining inward FDI into Turkey

Although in international trade theory, gravity models have well rooted theoretical foundations, the use of these models for FDI is somehow ad hoc. The eclectic paradigm of Dunning (1977 and 1981) does not provide either a sound theoretical base, despite being used frequently in empirical studies. This paradigm is more a descriptive approximation and a classificatory device of FDI than a theory with predictive power (Ietto-Gillies, 2005). That is why we will use a general equilibrium model of the multinational enterprise (MNE) which allows basing the empirical analysis on more robust predictions. The most recently developed theory is known as the “Knowledge-Capital” model (Markusen, 2002) which integrates in one model the vertical FDI theory of Helpman (1984) and the horizontal FDI one of Markusen and Venables (Markusen, 1984).

The vertical FDI model (VFDI) states that a firm is made up of its headquarters facilities in which the ownership assets of the firm are developed (R&D, management, marketing techniques...) and the production plant. Both activities may be done separately without further costs. As headquarters activity is more intensive in human capital than the activity of the production plant then, in order to take advantage of price differences, firms will locate each stage of the production process depending on countries' relative factor endowments. So in the equilibrium, between countries with endowments divergent enough to guarantee that factor prices will not equalise, vertical integrated MNEs will emerge, with headquarters in the rich home country and a production plant in the poor country. Final production from foreign affiliate will be re-imported to the domestic country. As far as production will be re-imported, trade costs between both countries will deter this strategy. In international business literature this type of FDI is called resource or efficiency seeking FDI (Dunning, 1993) and is mainly prevalent between countries with different levels of development.

In the horizontal FDI model (HFDI) the main assumption is the existence of economies of scale at the firm level which confers the MNE an advantage over local firms. Given these economies of scale FDI depends on the trade-off between trade costs and economies of scale at the plant level. If there are not trade costs there would be no FDI because the firm will concentrate all its production in the home country in order to exploit economies of scale and will serve the foreign market through exports. In fact simulations show that given certain trade costs level the activity of MNE will be larger between countries of similar size and relative factor proportions. On the contrary, local firms of the large country that serve the foreign markets via exports will have a cost advantage in relation to a MNE that has to bear the fixed costs of producing in two places. In short, in the horizontal model the MNE is a multi plant firm: one of the production plants is located closed to headquarters in the home country and the other foreign production plant is located in the foreign markets to serve each of the local

foreign markets. The principal role played by HFDI is better access to the foreign market. This type of strategy has been called also market seeking FDI (Dunning, 1993).

In keeping with the previous discussion of the Knowledge-Capital model the type and volume of FDI between two countries depends on the joint size of the home and host economy, the difference in market size between both, the relative factor endowments and trade costs. When countries differ in size but not in factor proportions there will be no VFDI and HFDI will be larger the more similar are the sizes of home and host economies. VFDI takes place when the relative factor endowments difference is significant. Finally trade costs to the host country encourage HFDI (tariff-jumping FDI) but trade costs to the home country discourage VFDI.

So the econometric specification, in line with the empirical studies (Carr, Markusen & Maskus, 2001, Markusen & Maskus, 2001, Blonigen, Davies & Head, 2003, Braconier, Norback & Urban, 2005), includes as explanatory variables of inbound FDI flows to Turkey from 18 home countries (i) for the period 1992-2003 (t) those defined by the Knowledge-Capital model and geographic distance as an exogenous determinant typically belonging to gravity models (see Annex 1 for variables specification and properties).

$$\ln FDI_{it} = \beta_0 + \beta_1 \ln SUMGDP_{it} + \beta_2 \ln GDPDIF^2_{it} + \beta_3 \ln DIFW_{it} + \beta_4 \ln GDPDIFWDIF_{it} + \beta_5 \ln FDIREST_{it} + \beta_6 \ln DIST + \alpha_i + \lambda_t + u_{it} \quad (iii)$$

Table 4 includes the most general specification (model 1) and three reduced models in order to check the robustness of the most relevant variables (i.e. market size and wage differences proxied by differences in skilled labour endowments).

Results confirm that the specification use are what the Knowledge-Capital model predicts: the signs of the parameters for all the models are what theory predicts and model reliability is reasonably high particularly taking into account the high volatility of FDI flow data. A random model is used for the fixed effects estimation, investing country and time, of equation iii because the panel data includes variables that are constant over time. It is worth commenting, that the variable with the larger impact on FDI is the joint market size of countries (Turkey and the corresponding partner) follow by their wage gap. FDI restrictions seem to exert also a large impact upon FDI flows too, but their statistical significance is not reliable.

Column 1 includes the specification closer to the Knowledge-Capital model, despite some variables not being significant, the most relevant of them have a positive impact on FDI inflows to Turkey. This result that seems to be robust to all specifications reveals that FDI inflows in Turkey are influenced both by vertical and horizontal factors. In short, FDI flows come from large economies with higher wages seeking greener pastures and

lower production costs. However model 1 shows that an excessive difference in size ( $GDPDIF < 0$ ) exerts a slightly negative effect because if the host market is much smaller foreign plants can not exhaust scale economies at the plant level, making FDI to finance foreign production plants too expensive for the foreign investor. Also, wages differences, although having a positive direct impact on VFDI, have indirectly a negative effect on HFDI. This effect is captured by the negative coefficient of the interaction term  $GDPDIFWDIF$ . Lastly FDI restrictions as well as distance also exert a negative impact on FDI. The former is self-evident and regarding distance the sign reveals that VFDI is an important part of total FDI flows to Turkey. Trade and transactions costs increase with distance and these costs deter both types of investment flows.

**Table 4**

Knowledge-Capital Model variables for inbound FDI in Turkey, 1992-2003

parameter	Predicted sign in KCM	Model 1	Model 2	Model 3	Model 4
constant		- 26.926** (-2.091)	-27.259** (-2.130)	-25.111** (-2.343)	-24.705** (-2.326)
LSUMGDP	+	1.850*** (2.683)	1.985** (0.005)	1.751*** (3.098)	1.849** (3.361)
LGDPDIF	-	-0.131 (-0.827)	-0.141 (-0.898)	-0.159 (-1.263)	-0.180 <sup>a</sup> (-1.459)
LDIFW	+	0.694* (1.518)	0.723* (1.595)	0.637* (0.114)	0.644* (1.663)
LGDPDIFWDIF	-	-0.084 (-0.283)	-0.115 (-0.393)	--	--
LNFDIREST	-	-1.867 (-0.890)	--	-1.923 (-0.943)	--
LDIST	?	-0.474 (-1.017)	-0.515 (-1.117)	-0.453 (-1.014)	-0.487 (-1.105)
R2 adjusted		0.65	0.65	0.65	0.65
N		145	145	145	145

In parenthesis "t" statistics; \*,\*\* and \*\*\* for significant coefficients at 10%, 5% and 1% confidence level respectively.

A brief summary of what the analysis reveals is that FDI determinants in Turkey are in line with KC model hypothesis. It seems that we are not facing a special or out layer case. Consequently, it would not be necessary to implement ad hoc measures to encourage FDI inflows into Turkey. According to the results it should be expected that Turkey will get more FDI flows in as much as the economy grows and the wage gap continues, as long as the gap is not compensated by a negative evolution of labour productivity. That is why the most effective policies to attract larger FDI flows would be

those supporting a bigger and more stable growth accordingly to the potential of an emerging economy and also to continue dismantling FDI restrictions. Therefore we consider that Turkey's adhesion to the EU will have a positive effect on FDI because this implies the adoption of a macroeconomic policy according to stabilization criteria and Union's legal corpus which obliges it to implement the principle of free capital flows, FDI inclusive.

## 5. Conclusions

The economic outlook assessment of Turkish accession to the UE is rather ambivalent. Despite last years' high economic growth, Turkey's instability, due to the expansion of its current account deficit in the upturn of the cycle, requires a larger dynamism of exports and of FDI inflows.

Regarding the recent evolution of Turkish external trade flows it must be pointed out first that the current share of exports over GDP should be increased, since countries of a similar size and with an equally protectionist history such as Poland, have much higher export propensities. Turkey's trade relations with the EU at the actual exchange rate with the do not contribute to the deterioration of the current account deficit of the country.

Turkey is not regarded as an attractive location for foreign investors despite being an emergent economy, with sufficient economic size, its proximity to the EU and significantly lower wage levels. The comparative situation with the Central and Eastern European countries reveals that Turkey is a secondary host market for European multinational enterprises.

Estimation of the gravity equation with export figures as the dependent variable unveils that distance exerts a negative and significant impact. This result is consistent with a high price elasticity of Turkish exports due to the fact that they are low end products without relevant technologies or product differentiation. The income elasticity of Turkish exports is also high, but Turkish GDP doesn't seem to be a significant explanatory variable. This is due to the fact that during recessions, followed by a depreciation of the Turkish lira, large exports figures are achieved. On the other hand differences in GDP per capita between trade partners have a positive effect on foreign sales. This has to do with a persistent complementary specialization vis a vis the most developed countries. This finding is also coherent with more intense trade with larger markets, typical of a more intra-industry type of specialization. Regarding the several dummy variables included in the model the Muslim one is the only with a positive and significant impact on exports.

The determinants of FDI inflows into Turkey have been estimated using the "Knowledge-Capital" model. The results obtained with panel data are, in general, coherent with the theoretical predictions of this model. The most fundamental variables, joint market size and wage differences, have a positive sign and are significant. Consequently, FDI into Turkey is of a



horizontal and vertical nature. The estimated model throws light also about the impact of distance as a proxy for trade costs and transaction costs in general. The negative sign confirms somehow the importance of VFDI in the Turkish case. The coefficient on FDI restrictions is negative and closed to the conventional level of significance.

Consequently with the analysis made so far, we consider relevant to favour export promotion policy measures directed to consolidating Turkish market share in the greater developed European markets, as a consequence of the high income elasticity of Turkish exports in relatively rich countries. In addition to this, as the Muslim dummy variable suggests, other export promotion measures should be applied to foster exports to Northern African countries and the Middle East. In relation to FDI inflows it may be worth stressing that achieving a more stable and unrestricted environment for doing business in Turkey would be a relevant target for economic policy.. This target would be completed if accession to the EU takes place, but otherwise deepening in the direction of the “Action Plan” may be a second best solution.

### Annex 1

Variables specification and properties included in the models

Equation i and ii

L EXP: logarithm of bilateral trade flows

LDIST: logarithm of geographical distance

LGDPM: logarithm of importing country GDP

LPOPM: logarithm of importing country Population

LGDPX: logarithm of exporting country GDP (Purchasing Power Parity in US dollars)

LPOPX: logarithm of exporting country Population

LDfcGDPpc<sup>2</sup>: logarithm of the squared difference of per capita GDPs

Cont: dummy variable for common border between partners

EU (Dummy): dummy variables for EU countries

EU (Medit. Dummy): dummy variable for Mediterranean countries

EU (Muslim Dummy): dummy variable for muslim countries

Equation iii

LFDI: logarithm of FDI inflows

LSUMGDP: sum of GDPs logarithm of investing country and Turkey

LGDPDIF: quadratic difference of GDPs logarithm of investing country and Turkey

LDIFW: wages logarithm difference between investing country and Turkey

LGDPDIFWDIF: product of logarithmic GDP difference and logarithmic wage difference

LFDIREST: difference in logarithms of FDI restrictions

LDIST: logarithm of geographical distance

Trade Flows are deflated by unit value indexes, distance is measured in kilometres between capital cities, GDP is measured in Purchasing Power parity US dollars, Population is the number of inhabitants, FDI inflows is measured in US dollars in real terms using US price deflator, FDI restrictions is an index running from 0 (less restrictive environment ) to 1 (more restrictive environment).

### Annex 2

#### Country list used for Exports and FDI estimations

Exports	FDI
Algeria	Austria
Argentina	Belgium
Australia	Denmark
Brazil	Finland
Bulgaria	France
Canada	Germany
China	Greece
France	Hungary
Germany	Italy
Greece	Japan
India	Korea
Iran	Netherlands
Iraq	Poland
Italy	Spain
Japan	Sweden
Mexico	Switzerland
Morocco	United Kingdom
Portugal	United States
Russian Federation	
Spain	
Syria	
United Kingdom	
USA	

### Annex 3

Data

Exports and Imports: United Nations, COMTRADE 2007

Foreign Direct Investment: OECD, Direct Investment Statistics Yearbook 1992-2003

Gross Domestic Product: AMECO 2007 (Annual Macroeconomic Database, EUROSTAT)

Population: World Bank (World Development Indicators, 2006)

Wages: AMECO 2007

FDI Restrictions: OECD (Golub, 2003)

Distance: own authors calculation

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## Özet

### Türkiye ile AB arasındaki ticaret ve yatırım akımlarının değerlendirilmesi: Gelecekteki bir siyasal bütünleşmenin perspektifleri

Son üç onyı Türkiye'nin dünya ekonomisiyle bütünleşmesinde önemli bir derinleşmeye sahne olmuş, bu derinleşme Türkiye'nin AB ile ikili ilişkilerine de yansımıştır. AB'ye katılımın yol açtığı siyasal meydan okuma, Türkiye ekonomisinde yapısal değişimleri özendirilen önemli bir kaymaya ve toplumun böyle bir dönüşüme ilgisinin artmasına yol açmıştır. Uluslararası ticaretin ve doğrudan yatırımların gelişmesi söz konusu amaçlara ulaşma çabasının sonucudur. Bununla birlikte, özellikle Merkezi ve Doğu Avrupa ülkelerinin eriştiği düzeyle karşılaştırıldığında, Türkiye'nin AB ile ve genelde OECD'nin en gelişmiş ülkeleriyle daha yakın ticari ve sınai ilişkilere girebilmesi için hâlâ büyük imkanlar mevcuttur. Bu araştırmada panel verilerin ekonometrik tanımlanması (gravite modeli) kullanılarak Türkiye ihracatı ve Türkiye'ye doğrudan yabancı yatırım girişlerinin temel açıklayıcı değişkenleri belirlenmeye çalışılmıştır. Sonuçlar, söz konusu iki yönlü akımların temel belirleyicileri arasında işgücü maliyeti farklılıkları ve ortak piyasa büyüklüğünün yer aldığını göstermektedir.

*Anahtar kelimeler* : Ekonomik bütünleşme, dış ticaret, doğrudan yabancı yatırımlar.

*JEL kodları*: F15, F20, O52.