Determinants of Turkish FDI abroad

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ABSTRACT *This study examines the determinants of Turkish outward FDI employing a gravity model. The model estimates the impact of traditional gravity variables, as well as openness, labour productivity, infrastructure, institutions and economic stability on FDI outflows from Turkey to 11 countries, which account for approximately 90% of Turkish outward FDI stock, over the period 1999-2005 years using panel data random effects technique. The results reveal that Turkish FDI has a market-seeking pattern with foreign markets being substituted for domestic market by Turkish firms. On the other hand, economic instability in Turkey emerges as a major deterrent of FDI outflows. Additionally, our results suggest the possibility of FDI in vertically differentiated products in host countries by Turkish investors as well as the importance of push factors.*

Keywords: foreign direct investment, gravity model, panel data econometrics

JEL Classifications: F21, F23, C23

1. Introduction

This study analyses the main determinants of Turkish direct investments abroad. Expecting to see a market-seeking pattern in the location choice of Turkish firms, we employ the gravity model, widely used in examining the international trade and FDI. Despite the fact that the total FDI outward stock of Turkey reached to 11.8 billion US

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dollars ($11,789,569,151 to be exact) by the end of 2007 (Undersecretariat of Turkish Treasury, 2008), there are no studies on Turkish outward FDI apart from a survey by Akcaoglu (2004) and a descriptive analysis of Turkish net outward investment position by Erdilek (2003) in Dunning (1981, 2000) style[1]. Therefore, this study makes a contribution -in its own right- to our understanding of FDI outflows from Turkey -a country, which has become the 'leading source of FDI' from a region with large petrodollar earnings (UNCTAD, 2006:131).

Turkish firms have started investing in foreign countries in 1990s. Before that, there were some Turkish investments abroad but these were mainly small offices or branches of banks or of travel and tourism agencies. Following the collapse of the Soviet Union, Turkey established closer relations with the Central Asian Republics (CARs), which she has close cultural ties with. The efforts to become a benevolent sister have been fruitful and Turkey's trade with these countries picked up very quickly. As these newly established independent states went through reforms to liberalise their economies, Turkish entrepreneurs were there to build, serve, produce and trade. But that was not all. The experience at the CARs has removed the shyness of Turkish entrepreneurs and they went as far as the USA in the west and as China in the east to establish foreign direct investment (FDI) firms in about 90 countries by December 2007.

Turkish FDI outflows picked up towards the end of 1990s only to fall dramatically as a result of the economic crisis of 2001. The decrease in outflows amounted to approximately 44% of 2000 in that year followed by a further 65% in 2002. The overall decline in those two years was 80% of 2000 and it wasn't until 2005 the outflows reached their pre-crisis level. Outward FDI has increased inline with the increase in world FDI flows after 2003. In 2004, Turkish outflow was $millions 849, followed by an increase of 62% one year later. 2006 saw a decline in the amount of foreign investments however, the number of firms investing abroad increased from 183 to 283 in that year. In 2007, the FDI outflows doubled reaching $billions 2.545.

[1] Akcaoglu (2004) uses suvey data he gathered through a questionnaire to understand the main motivation behind Turkish investments. Erdilek (2003) explains inflow and outflow of foreign direct investments with ownership, location and internalization advantages.

The bulk of FDI flows has gone to the Netherlands followed by Azerbaijan and Malta amounting to approximately 64% of the $billions 11.8 outward stock. Germany, UK and Kazakhstan each have around $millions 500, preceded by Luxembourg, Russia, US and Romania with $millions 200 each.

Classifying Turkish outward FDI in broad categories shows that energy constitutes the highest FDI sector -most of which could be attributed to the pipeline project and to the oil extraction facilities in Azerbaijan. Energy sector is followed by manufacturing, banking, other financial services and trade, all have more than 10% of total outward stock. Construction constitutes only 2% preceding telecommunications sector with 6% of total FDI outflow of Turkey. Tourism, transportation, mining and insurance all have very small shares, nothing more than 1% each.

In this study, we examine the determinants of Turkish FDI abroad by considering the eleven countries[2] that have received approximately 90% of outflows in the period 1999-2005. The paper is developed in the following fashion: Section 2 gives a brief overview of empirical literature on FDI that uses gravity models. In section 3, gravity model for FDI analysis is explained and the model used in the paper is introduced. Data and methodology is outlined in section 4, followed by the results in section 5. Finally, section 6 concludes with suggestions for future work.

2. Literature

Internationalization of firms takes place through two means: export and FDI. If a firm prefers to internalize the foreign markets by establishing a subsidiary instead of issuing licences or franchising contracts, that decision leads to FDI. Dunning (1981) attributes this internationalization to three advantages a firm can obtain, i.e. *ownership* of tangible and intangible assets, *location* of the destination country and *internalization* of markets. At the macro level, empirical works, which rely on this argument, consider source and destination country features as the main determinants of FDI. Among the most prominent factors of FDI comes the relative market size in these countries. FDI outflows as well as inflows are expected to increase with market

[2] Virgin Islands and Luxembourg, which are known as finance centers and tax heavens, attract Turkish FDI but because foreign investments are redirected to other countries, following Cross et al. (2007) we exclude these two locations from our analysis.

size if the foreign firms' main motivation is getting access to markets, i.e. horizontal FDI. Being closer to specific markets, even if it is not efficient to establish firms there, has led to what is called export-platform FDI, where the FDI firm invests in a proximate country to gain easier access to the target market (see Ekholm, Forslid and Markusen, 2007; Baltagi, Egger and Pfaffermayr, 2007; Blonigen, Davies, Waddell, and Naughton, 2007 for a comprehensive discussion). On the other hand, firms may have access to resources or other assets owned by the destination country, or even may prefer to invest to minimize costs of production through utilisation of cheap and/or skilled labour force available in the host country. This type of foreign investment is called vertical FDI and it is claimed to depend on country specific characteristics such as infrastructure, natural resources, labour market conditions etc.

The empirical literature, which examines the determinants of FDI, deploys the services of gravity model[3] that is vastly used in explaining international trade. The gravity model, following its name, is based on Newton's law of universal gravitation. This law states that the force of gravitational attraction depends directly on the masses of the objects and inversely on the distance between their centers[4]. Tinbergen (1962) and Pöyhönen (1963) were the ones to use this model in explaining volume of bilateral trade between countries. Similar to the law of universal gravitation, in international trade, the gravity model rests on the conjecture that the volume of trade between two countries is directly related to the size of the economic activity indicated as their incomes and inversely related to the distance, which reflects the cost of transportation, between them. As the economic activity or income in partner countries increases the bilateral trade increases and as distance between them increases, transportation of goods becomes more costly therefore the volume of trade decreases with distance. Linneman (1966) hypothesised that the level of income is not sufficient to explain the purchasing power in partner economies and suggested that population should also be taken into consideration since the purchasing power in two countries with similar incomes would not be the same if one has a larger population. The

[3] An alternative model that is sparingly used in FDI studies is the market potential approach suggested by Harris (1954) in his seminal paper. Krugman (1991) adopted that to agglomeration economies. Altomonte (2002); Head and Mayer (2003); Carstensen and Toubal (2004); Crozet, Mayer and Muccihielli (2004) employ the market potential model to explain the motivation of FDI in various regions or countries.

[4] $F = GmM/d^2$, where F denotes the gravitational force, m and M are the masses and d is the distance between the masses. G is named as the gravitational constant.

traditional gravity model has taken its final form with the inclusion of population by Linneman (1966).

Although criticized for being more an empirical model with questionable theoretical foundations[5], the gravity model has been the workhorse of international trade literature, used to explain bilateral trade, trade diversion or creation affects of various policies and to analyse regional integration[6]. Its success in explaining various facets of trade has attracted economists working on multinational activities[7], mainly FDI. Recent studies on determinants of FDI have focused on transition economies and emerging markets. Most of the gravity models used in those studies have employed additional explanatory variables to explain foreign investments. For example, Brenton, Di Mauro ve M. Lücke (1999) assess the relationship between trade and FDI vis-à-vis complementarity-substitutability and whether liberalisation in Central and Eastern European Countries (CEEC) has any diversion effect on FDI to other European countries. They use economic freedom index[8] to account for attractiveness of destination CEE countries for FDI in addition to some country dummies. In a similar study on diversion of FDI from South to East European economies, Buch, Kokta and Piazolo (2003a) incorporate an index for FDI restrictions, and dummies for common language and common legal system. Following these examples, Bevan and Estrin (2004) inquire the FDI flows from West to CEECs using again a gravity model enriched with transition country variables, such as riskiness and a dummy capturing the possibility of joining EU for each CEEC, in addition to relative market size, distance and factor costs (productivity corrected unit labor cost and opportunity cost of capital). There are similar country studies for Singapur (Ellingsen, Likumahuwa and Nunnenkamp, 2006), India (Pradhan, 2007) and China (Cross et al., 2007), which employ the gravity model to examine FDI outflows.

3. Gravity Model for FDI

We use the basic specification of the gravity model to investigate determinants of Turkish outward FDI. The variables used in this study are grouped as gravity

[5] See Anderson (1979); Anderson and Wincoop (2003) for a formal treatment of theoretical underpinnings of the gravity approach.
[6] See Frenkel and Wei (1993); Sayan (1998); Di Mauro (2000); Feenstra, Markusen and Rose(2001) and Nitsch (2003).
[7] Stone and Jeon (2000); Loungani, Mody and Razin (2002); Razin, Rubinstein and Sadka (2004).
[8] Heritage Foundation

variables, namely relative income, distance and population and as other explanatory variables. All are included in multiplicative form into the traditional gravity model. Therefore, the model used in estimations looks like:

$$FDI_{sdt} = A\frac{Y_{st}^{\beta_1} Y_{dt}^{\beta_2} P_{dt}^{\beta_3}}{D_{dh}^{\beta_4}} \mathbf{X}_j^{\Gamma_j} \qquad (2)$$

where FDI_{sdt} is the FDI flows from source country *s* (Turkey) to destination countries *d* at period *t*. The gravity variables denoted by Y_{st}, Y_{dt}, P_{dt} and D_{sd} are respectively, the GDP per capitas for source and destination countries, the population of the destination country at time *t* and the distance between source and destination countries. On the other hand, other explanatory variables are demonstrated by $\mathbf{X}_j$, which is the vector of all explanatory variables such as trade, labor market, infrastructure, institutional environment, economic stability and world conjuncture. Equation (2) is log linearized to obtain

$$\ln FDI_{sdt} = \ln A + \beta_1 \ln Y_{st} + \beta_2 \ln Y_{dt} + \beta_3 \ln P_{dt} + \beta_4 \ln D_{sd} + \Gamma_j \ln \mathbf{X}_j . \qquad (3)$$

All β_i parameters indicate the elasticities of their respective variables. For example, β_3 shows the population elasticity of FDI outflows from Turkey. Similarly, the Γ_j parameter vector gives the elasticities of FDI to every explanatory variable in $\mathbf{X}_j$. If the income of destination country increases by 1% then the outward FDI from source country increases by β_2 provided that $\beta_2 > 0$.

The gravity variables constitute the core of this approach. The presence of the incomes of both source and destination countries corresponds to a relative incomes approach and allows to detect the impact of a change in source country income on FDI. The parameter estimate for the income of the destination country is an important indicator of the type-of-FDI, such as if the FDI type is market-seeking then the parameter estimate is expected to be positive showing that as income of the destination country increases then more FDI flows take place. Most common measures of income used in the literature are GDP (Brenton et al., 1999; Buch, Kokta

and Piazolo, 2001; Buch, Kleinert and Toubal, 2003a; Ciéslik ve Ryan, 2004) and GDP per capita (Andreff, 2002; Buch, Kokta and Piazolo, 2003b).

Population is included in the gravity equation as a measure of market size, which also accounts for the purchasing power if GDP is used instead of GDP per capita as the measure of market depth. If the FDI firms are market seeking then they prefer to invest in a host country where the market is large for a given level of purchasing power. Therefore, the parameter estimate is anticipated to be positive if GDP per capita is used. On the other hand, if the population is large for a given level of GDP, meaning a lower purchasing power then FDI firms prefer to invest in an alternative host country. In that case, FDI is expected to decrease with population.

The third gravity variable, distance, accounts for the cost of transportation in the trade literature and is thought to have a negative effect on trade. However, in terms of FDI distance has slightly more complex impact on the volume of foreign investments depending on the type of FDI (Egger, 2008). In general if FDI is market seeking, i.e. horizontal, for closer destinations, the internationalizing firms are expected to prefer exporting to direct investments, on the other hand the distance between source and host countries increase foreign investments increase. However, if the FDI is vertical then the firms are actually trying to decrease their costs of production by outsourcing parts of the production process or by acquiring cheaper raw materials etc. In which case, obviously, distance has an increasing impact on costs of poduction and hence, FDI decreases with distance.

Additionally, other explanatory variables are used to measure the impact of openness, labor market conditions, infrastructure, economic stability and institutional background. Openness is supposed to measure the attitude of the host country to FDI and its integration to the world economy. A host country, which is highly integrated to the world, is assumed to attract more FDI given the levels of other variables. Labor market conditions are reflected by the economy-wide labor productivity measured as the ratio of GDP per employed worker. FDI increases with productivity. However, labour productivity may not be the main concern for all foreign firms but a good infrastructure network and communication is crucial for coordination and control. Therefore, foreign firms are assumed to take the infrastructure into consideration when choosing the destination country for their investments. A host country may have

all specifications required by foreign investors but if there are deficiencies in terms of economic stability, which is likely to increase risk, and if institutional backdrop is not favorable then foreign investors are likely to shy away from that host country. Hence, to measure economic stability we use inflation and the corruption index reflects the institutional environment in the host country.

4. Data and Methodology

Since we consider only the countries that receive the bulk of Turkish outward FDI provided that they are not finance centers or tax havens, we need to restrict the time horizon to period 1999-2005 for countries such as Azerbaijan and Kazakhstan do not have data on most of the explanatory variables, especially institutional for previous periods. However, we do not expect this relatively small sample size to alter the findings dramatically because the countries considered in the analysis actually constitute approximately 90% of the total outward FDI stock of Turkey[9].

Most of the data on explanatory variables is obtained from World Bank's World Development Indicators. Only UNCTAD's FDI database is used to get the FDI outflows and PRSG's International Country Risk Guide (ICRG) is the source of institutional variables such as corruption, law and order, etc. Table 1 lists the variables, expected signs and data sources. All data is deflated using USD deflator base year 2000. The log linearization of the gravity model also ensures normal distribution of FDI data[10].

In the data set, the zeros[11] are replaced with one (1) so that it will be possible to take their natural logarithims[12] and the negative[13] values are treated by taking the logarithim of the absolute value of FDI flow and by multiplying the result with (-1). In that way, it becomes possible to reflect the decision of Turkish investors not to

[9] As of 31 December 2007, 42 countries have less than 0.1 % of Turkish outward FDI stock each, including many OECD countries, transition economies and finance centers.
[10] Shapiro Wilk normality test shows that real FDI values are not normally distributed however, after taking the logarithm of real FDI outflows the distribution becomes normal.
[11] These are France 2002; Switzerland 2000 and 2001.
[12] Razin et al. (2004) and Eichengreen and Tong (2007) show that the estimation results of a gravity equation are not significantly affected from this amendment.
[13] These are Romania 2002 and Russia 2003. A negative FDI outflow means disvestment.

invest to the destination countries in question at that specific year or to incorporate disvestments into the data. Table 2 gives the summary statistics for the data used.

Table 1. Definition and Expected Signs for Variables

VARIABLES	DEFINITION	SIGN
$LRFDI_{sd}$	FDI Outflow from Turkey to destination country (real million USD)	Dependent
$LRGDP_{d}$	Real GDP of destination country	+
$LRGDP\_PC_{s}$	Real GDP per capita of Turkey (dolar)	+/-
$LRGDP\_PC_{d}$	Real GDP per capita of destination country (dolar)	+
$LPOP_{d}$	Population of destination country	+/-
$LDIST_{sd}$	Distance between source and destination countries measured as the distance between respective capitals (km)	+/-
$LTRANSCOST_{d}$	Transportation cost is measured as imports (c.i.f) by Turkey from destination country/exports (f.o.b) of destination country to Turkey	+/-
$LOPEN_{d}$	Openness measured as Trade/GDP	+
$LPROD_{d}$	GDP per person employed	+
$LINFLATION_{d}$	Annual inflation rate measured as average consumer prices (2000=100)	-
$LCORR_{d}$	Corruption	+[14]
Data Sources: FDI data is obtained from Turkish Treasury. All other variables apart from institutionals were gathered from World Bank WDI database and inflation from IMF's World Economic Outlook Database. PRSG is the source for institutional variables used in the analysis.		

Table 2. Descriptive Statistics

VARIABLE	# OBS.	MEAN	STD. DEV.	MIN	MAX
$LRFDI_{sd}$	77	14.586620	6.256893	-16.080380	20.426870
$LRGDP_{d}$	77	26.679990	2.096979	22.266800	30.028530
$LRGDP\_PC_{d}$	77	9.657760	0.839015	7.621802	10.520950
$LRGDP\_PC_{s}$	77	9.172427	0.0230435	9.124656	9.197845
$LPOP_{d}$	77	17.446380	1.1382870	15.78122	19.507508
$LDIST_{sd}$	77	7.722566	0.5753357	6.618739	9.074750
$LTRANSCOST_{sd}$	77	0.138185	0.4256653	-0.605883	2.101000
$LOPEN_{d}$	77	4.189471	0.4201253	3.152113	4.902439
$LPROD_{d}$	77	9.346591	0.8205427	7.576426	10.326100
$LINFLATION_{d}$	77	4.709456	0.2004911	4.229021	5.445379
$LCORR_{d}$	77	1.117997	0.4650882	0	1.791759

[14] Since the lower the risk point total the higher is the risk, when corruption risk index takes the value of zero it means that country is the most risky in terms of corruption. As the value of the index increases the risk of corruption decreases. Therefore, as corruption risk decreases we expect FDI to increase.

The gravity equation is estimated using random effects model[15] of panel data econometrics. Observing that the models all contain heteroskedasticity, feasible generalized least squares methodology is employed to get corrected parameter estimates. None of the models have autocorrelation problem and the models, which show multicollinearity, are not reported.

In order to determine the main factors that affect Turkish FDI outflows, we estimate numerous models where alternative indicators are used to measure a specific characteristic, such as distance and transport cost or as GDP and population[16]. By including variables one-by-one, it was possible to detect multicollinearity and omit some variables, such as the high correlation between transport cost and openness meant that both could not be used simultaneously and so either one had to be chosen. These limitations actually restrict the models estimated that are explained in section 5.

5. Results

Source and host country incomes, distance/transport costs, market size, openness, corruption and Turkey's economic stability appear to be the main determinants of Turkish FDI abroad. Various models estimated using traditional gravity and other explanatory variables reveal interesting results, which are reported in Table 3. The first model estimated is the traditional gravity equation. In that model, we use GDP and GDP per capita together. Here, the main argument rolls around GDP per capita being an indicator of development and purchasing power whereas GDP an indicator of market size. In that model all variables but distance, are significant. Distance is time invariant therefore drops out of the equations depending on the variables included. Therefore, in some of the models, we omit distance. Model 2 includes trade volume-GDP ratio as a measure of openness of the destination country in addition to labour productivity, inflation and a dummy (D02) for the year after the 2001 economic crisis in Turkey. There, population is the only variable that has an

[15] Estimations using pooled model and fixed effects model are rejected by Breush-Pagan and Hausman tests.

[16] We also estimated models using growth rate for economic stability or employment-population ratio for the age group 15-24 to reflect labour market characteristics, but these were not significant in determining FDI outflows.

insignificant effect. As an indicator of economic stability, inflation displays a negative impact on FDI outflows to destination countries as expected. In other words, an increase in the average inflation of the 11 countries considered has a decreasing effect on Turkish outward FDI. Productivity increases and increased openness of destination countries actually encourages Turkish FDI firms to invest, whereas an economic crisis such was experienced in 2001 generates a hang over effect on foreign investments.

Distance is widely used as a proxy for transport costs in the trade literature. However, because of its time invariant nature, it's less likely to reflect the changes in transport costs in time (Carstensen ve Toubal, 2004). Helpman et al. (2003) use flight fares instead of distance for the same reason. We, on the other hand, following Harrigan (1993) use the ratio of imports (c.i.f. value) of Turkey to exports (f.o.b. value) of the host country as a measure of transport cost and employ it as an alternative to the distance between countries in some models.

Models 3, 4 and 5 are estimated in that character. The institutional variables generate a multicollinearity problem if used together with country-specific variables such as inflation and productivity. Therefore, these variables are not included in the last three models. Among the institutional variables considered only corruption index gives significant parameter estimates[17]. Hence, we estimate a basic gravity model with crisis dummy and corruption to determine the effects of institutional environment in Model 3 and Model 4. The only difference between the two comes from using GDP in the first and POP in the latter as alternative measures of market size. Clearly, the estimation results do not change much. Replacing distance with a time varing variable has an alternative cost: transport cost and openness are highly correlated and therefore, we have to give up openness for the time being. Hence, in Models 3 and 4, we use only gravity variables, corruption and hang over dummy for the crisis. In Model 5, we give up transport cost for openness and estimate the model using distance.

[17] Other institutional variables considered are law and order, democretic accountability and government stability.

Table 3. Estimation Results for Various Models

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5
LRGDPd	6.908709*** (2.5257)	6.213271** (2.4672)	0.7189271* (0.4352)		
LRGDP_PCd	-13.21594*** (4.2983)	-12.06371*** (4.2569)	-5.323665*** (1.5078)	-4.224632*** (0.9528)	-4.115222*** (0.9798)
LRGDP_PCs	-38.34686** (15.7185)	-48.88249*** (17.6498)	-65.58246*** (12.8788)	-63.69987*** (12.6355)	-54.73533*** (12.4513)
LPOPd	-6.158668** (2.5581)	-3.342806 (2.3277)		0.6827829* (0.4119)	1.977374** (0.7729)
LDISTsd	1.137896 (0.8377)				1.969428** (0.8171)
LTransportCost			-2.100107*** (0.7310)	-2.231812*** (0.7234)	
LProductivity		0.7336739* (0.41067)			
LINF		-8.335609** (3.3069)			
LOPEN		6.494752*** (1.9402)			5.055788*** (1.6301)
D02		-2.195762** (0.8982)	-2.253482*** (0.7151)	-2.336585*** (0.7102)	-2.042073*** (0.7021)
LCORR			5.749979*** (1.2586)	5.93137*** (1.2558)	6.219146*** (1.5006)
Constant	408.6511*** (150.8654)	477.7498*** (172.228)	643.2763*** (118.2789)	622.5446*** (115.8159)	479.2005*** (121.128)
Log Likelihood	-209.0293	-205.5717	-196.6058	-195.8579	-195.5727
Wald Chi2	17.26***	49.34***	62.92***	65.24***	73.91***

Note: The figures in parenthesis are standard deviations.

*** 1% significance level

** 5% significance level

* 10% significance level

There are some common points to be noted in all models. First of all, GDP of the destination country is always positive. Population, on the other hand, is negative when used together with GDP as in the first model but positive when used alone as the measure of market size. This is quite in line with expectations. As for GDP per capitas of both source and host countries concerned, we get surprising parameters. In all models GDP per capitas are negative with the source country parameter being greater than destination country coefficient. A negative parameter estimate for source country GDP per capita means that a one percent increase in Turkey's GDP per capita decreases the FDI outflows from Turkey by quite a high amount. Since all cost variables that may induce vertical FDI are insignificant in most of the models apart from labour productivity, Turkish FDI seems to be mostly market seeking. The difference between the source and host country income parameters shows that one percent change in Turkish per capita income generates a larger impact on foreign investments than that of the destination countries. In other words, Turkish firms are actually substituting foreign markets instead of domestic markets. This finding promotes the idea that Turkish outward FDI is a result of the push-factors, a common assertion for developing country FDI outflows (UNCTAD, 2006).

On the other hand, the negative parameter estimate for host country GDP per capita implies that a one percent increase in the wealth of those countries would cause Turkish outward FDI to decrease. In a way, the host income effect is negative for FDI outflows from Turkey similar to we would see in inferior goods. As the income or purchasing power of a country increases, people who were not able to buy high quality goods gain the means to do so and therefore, switch their consumption from low quality substitutes to high quality varieties. Hence, the demand for low quality varieties decreases, decreasing their production in those countries. Lall (1983) notes that FDI firms use the advantages they obtain from the source country, i.e. they are as efficient as the parent country. Therefore, the low quality varieties produced in developing countries are actually what FDI firms from these countries produce. In fact, even if the FDI firms produce a higher quality variety for foreign markets relative to its domestic production, the labour-intensive technology that characterises developing countries and the costs of producing top notch products restrict their production to relatively low quality products in host country markets. Following Vernon's (1966) product life cycle theory and Falvey's (1981) vertical product differentiation, Flam and Helpman (1987)

mention that income differences between countries matter because high-income individuals consume high quality goods and vice versa. Therefore, as the income of the host country increases the individuals are likely to switch their consumption from relatively low quality varieties, i.e. Turkish products, to high quality domestic or other foreign goods, causing Turkish FDI firms to decrease production and thus investments.

Corruption risk is the main risk factor that Turkish investors respond to. They decrease foreign direct investments as the risk of corruption increases, i.e. as the value of corruption risk index decreases. This finding also validates expectations.

6. Conclusion

In our quest to discover the main determinants of Turkish FDI abroad, we employed a gravity approach to estimate FDI outflows for a panel data of 11 countries over 7 years using random effects model. Findings from the model estimations can be summarised as:

- Turkish outward FDI is market seeking.
- Foreign markets are used as substitutes for the domestic market by Turkish FDI firms.
- Turkish FDI firms produce low quality alternatives to high quality products in host countries and therefore, as incomes in host countries increase Turkish outward FDI decreases.
- Corruption risk is an obstructor for Turkish FDI outflows.
- Economic instability in Turkey decreases outward FDI, i.e. push-factors are effective in determining foreign direct investments.

These results raise more questions to be answered on Turkish and possibly other developing country FDI outflows. Attention paid to FDI outflows from developing and transition countries by UNCTAD (2006) needs to be followed by empirical research. Specifically for the Turkish case, future research should focus on the scope of vertical product differentiation in Turkish outward FDI and the dominance of pull or push factors in determining foreign investments.

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