Determinants of FDI Into Turkey: A Componentwise Analysis

Burçak Polat
Eastern Mediterranean University, Famagusta, Turkish Republic of Northern Cyprus (TRNC)

For two decades, the questions of what really motivates foreign investors to invest in a certain country remain unanswered and a controversial issue. Moreover, previous studies have overwhelmingly treated FDI (foreign direct investment) as unidimensional rather than multidimensional. In reality, FDI is rather multidimensional in that it is composed of components (equity capital, reinvested earnings, and other capital), each with its intrinsic characteristics in response to the same economic fundamentals, such as growth, institutional quality, exchange rate, taxes, market size, skill abundance, etc. Therefore, the main objective of this study was to seek the major determinants of the total FDI inflows in Turkey by treating total FDI as multidimensional to avoid a distorted empirical prediction concerning the total FDI, which is greatly neglected in the FDI literature. Accordingly, the author employed the panel corrected standard error (PCSE) model for annual data between 2003 and 2012, he found that FDIs are responsive to the country risk (CR) indices of both Turkey and EU (European Union) and to the tax measures of 2006.

Keywords: FDI (foreign direct investment), reinvested earnings, other capital, equity capital

International trade and foreign direct investment (FDI) flows stand out as the fastest-growing economic activities in the global environment in the last two decades. A critical analysis of global FDI flows data issued by UNCTAD (United Nations Conference on Trade and Development) (2008) announced that global FDI inflows have increased gradually over the years and reached a peak level of $1,833 billion in 2007, with a 30% increase. Despite the growing interest in FDI inflows, the major reasons behind foreign investors seeking a country in which to invest and the uneven spatial distribution of FDI across countries are still an unanswered question in both the theoretical and the empirical international business (IB) literature. An apparent consensus in the extant literature reveals that previous studies have primarily focused their attention on the independent explanatory variables rather than questioning the nature of FDI. Hence, as Oseghale and Nwachukwu (2010) noted, “It is not surprising that FDI has been operationalized in prior literature as a monolithic variable rather than a multidimensional one”. However, FDI consists of three main components (new equity, reinvested earnings, and inter-company debt flows), each component has its own determining factor so that the components may react differently to the same macroeconomic variables. This argument has been also justified greatly by the study by Lundan (2006) on the determinants of reinvested earnings as sub-components of FDI. She noted that “Reinvested earnings are the only major component of foreign investment position that originates in the host country, rather than being transferred from the home country”. It means that while the other components of FDI involve a cross-border transfer of funds, reinvested earnings are the only

Corresponding author: Burçak Polat, Ph.D. candidate, Department of Economics, Faculty of Business and Economics, Eastern Mediterranean University; research fields: international economics, micro-economics, and macro-economics. E-mail: burcakpolat@hotmail.com.
sub-component that occurs in the host country. Furthermore, the Undersecretariat of Treasury, General
Directorate of Foreign Investment Report (2007) highlighted the importance of examining each component
separately by stating that “Although each transaction related with one of the components generates FDI, from
investors’ point of view, reasons and motivations determining preferences among these transactions show
variations”.

UNCTAD (2008) also reported that “Reinvested earnings accounted for about 30% of total FDI inflows as
a result of increased profits of foreign affiliates, notably in developing countries”. In the case of Turkey, which
is also an outstanding developing country with an emerging market in the international economy, reinvested
earnings and intra-company loans as sub-components have become an important contributor to the total FDI in
recent years. As can be seen in Figure 1, even though the major contributor to the total FDI is equity capital, in
recent years, reinvested earnings and intra-company loans (other capital) have exhibited a tendency to increase,
such that, according to the data from the Central Bank of the Republic of Turkey, reinvested earnings started to
increase gradually from 1995 to 2007, rising sharply from 86 million euros to 218 million euros, and continued
to rise in the following years to reach a peak level in 2009, when the total FDI inflows hit their lowest point due
to the world economic crisis. Moreover, the gradually rising trend of intra-company loans started in 2002 and
reached a maximum level of 1,435 million euros in 2008, when the total FDI inflows exhibited a downward
trend due to the global crisis. Obviously, as is evident from Figure 1 and Figure 2 and the numerical facts
explained above, Turkey has witnessed opposite movements of each sub-component in the case of exposure to
the aftermath of the world economic crisis, which deteriorated the total FDI inflows overall.

![Figure 1. Equity capital in Turkey between 2003 and 2012 (millions of euros). Source: Central Bank of the Republic of Turkey (2012).](image)

In the case of a new contribution to the FDI literature, it is therefore important to accept that FDI is
structured by multidimensional independent components and that each component has its unique characteristics,
which cause the components to respond differently to the same economic fundamentals, such as growth,
institutional quality, exchange rate, taxes, market size, skill abundance, etc. Therefore, the main objective of
this study is to seek the major determinants of the total FDI inflows in Turkey by treating total FDI as
multidimensional rather than monolithic. Accordingly, total FDI is disaggregated by its three components separately to avoid a distorted empirical prediction concerning the total FDI, which is greatly neglected in the FDI literature. The author contributes to the literature in several respects. First, to his knowledge, he is the first one to examine the determining factors of the total FDI inflows into Turkey by employing disaggregated FDI data with respect to its components. Accordingly, he captures the independent component effect as well as correlation among each component on aggregated FDI. To achieve this, he employs a panel data technique so-called as the panel corrected standard error (PCSE) model by considering the probable correlation among the components, regardless of the fact that the components have their own uniqueness and they will therefore respond to the same situations in different manners. Second, with appropriate data, he is able to show that the total FDI responds differently to macroeconomic variables and risks in the market of the host country (Turkey) and the home country [EU (European Union)].

The structure of the paper is as follows. Section 2 provides a brief summary of the previous works. Section 3 explains the data and methodology of the PCSE model. Section 4 provides the estimation results. Finally, Section 5 concludes the study.

**Figure 2.** Reinvested earnings and other capital in Turkey between 2003 and 2012 (millions of euros). Source: Central Bank of the Republic of Turkey (2012).

### Literature Review

One of the studies relevant to the component-based FDI literature is by Loree and Guisinger (1994), which examined the impact of policy and non-policy variables on the equity capital of total US FDI abroad. These authors concluded that investment incentives have a positive effect on equity capital, while performance requirements and host country tax rates have a negative effect. Non-policy variables such as infrastructure, political stability, cultural distance, and GDP (Gross Domestic Product) per capita also have a role in determining the level of US equity capital abroad.

Perhaps one of the most outstanding analyses of total FDI with its individual components that aimed to gain a better understanding of the determining factors was set out by Lundan (2006). She grouped six
explanatory factors of reinvested earnings into three categories:

1) Those encouraging reinvestment: These factors related to possible good investment opportunities have a positive effect on the decisions of foreign investors to hold their earnings in the host country. For example, the growth rate of the host country market and the income level in a given industry may be signals of good investment opportunities in the host market;

2) Those encouraging repatriation: Movements in the exchange rate are supposed to have an effect through repatriation such that the depreciation of the host currency tends to discourage repatriation. Moreover, a high corporate tax rate in the host country is assumed to have a negative effect on reinvested earnings and to cause profit repatriation;

3) Agency consideration: Factors affecting the decision of a multinational corporation (MNC) on the amount of dividend payments may also cause repatriation. For example, countries that have high market risk or political risk or that are culturally or institutionally different from the home country of the MNC would cause high levels of repatriation.

On the contrary, the study of Wolff (2007) is also unique in terms of estimating the effect of the corporate tax rate of both the home and the host country on four bilateral FDI measures (total FDI, reinvested earnings, equity capital, and intra-company loans). He concluded that each component responds differently to the top statutory corporate tax rate of both the source and the host country. While the tax effect on the equity earnings and other capital component is complicated and ambiguous, the effect of taxes on reinvested earnings is more guided. This means that home country taxes on reinvested earnings have a direct effect, leading them to be held abroad rather than repatriated, while the host country tax rate has a negative effect and causes a fall in reinvested earnings.

Furthermore, the studies by Oseghale and Nwachukwu (2010), Chakravarty and Xiang (2011), and Taylor, Mahabir, Jagessar, and Cotton (2013) have also contributed to the literature by analysing FDI with its individual components separately. Oseghale and Nwachukwu (2010) empirically proved that good governance, market size, market growth rate, exchange rate, quality of labour, and profitability of existing operations are positively correlated with reinvested earnings. Similarly, Chakravarty and Xiang (2011) concluded that access to external financing, property rights, extent of private ownership, and relative competitive advantage has a significant effect on the decision of foreign investors, concerning the level of retained earnings in the host country. In a recent paper, Taylor et al. (2013) argued that as the economic growth of the host country and profitability of foreign firms increase, foreign investors tend to hold reinvested earnings in the country, while the depreciation of the host currency and an increase in the host country government consumption seem to decrease the volume of reinvestments.

Data and Methodology

Data

The sub-components of the total FDI are dependent variables, which account for equity capital, reinvested earnings, and intra-company loans (other capital) in Turkey acquired from the Research Center International Economics (For Schungs Schwerpunkt Internationale Wirtschaft) Database Retrieval Tool[^1]. The author identified the following as explanatory variables: the exports to imports ratio as an indicator of the openness of

[^1]: Retrieved from http://data.fiw.ac.at/FiwDat/FiwDatServlet.
DETERMINANTS OF FDI INTO TURKEY: A COMPONENTWISE ANALYSIS

the host country, the country risk (CR) index for Turkey and the EU area, the real effective exchange rate (REX), and lastly, a dummy variable to account for the new corporate tax system introduced in June 2006 to stimulate more FDI in the country. The author obtained both exports and imports in goods values from the Organisation for Economic Co-operation and Development (OECD) data dissemination server. Moreover, while the CR indexes for Turkey and the EU area came from the PRS (Political Risk Service) Group, International Country Risk Guide (ICRG) 2012, REX data were attained from the Central Bank of the Republic of Turkey data dissemination server. Furthermore, the author specified annual data between 2003 and 2012 as the time span of the study due to the missing observations encountered in reinvested earnings and other capital data for some years and the acceptance of the Eurocentric monetary unit after 1999. In addition, the definitions of the variables and expected signs of the coefficients are explained below.

**Equity capital.** Equity capital is the purchase of the shares of a foreign affiliate in a foreign market rather than in a domestic market. The IMF (international monetary fund) states that equity capital,

Covers equity in branches, shares (whether voting or non-voting) in subsidiaries and associates, and other capital contributions (such as the provision of machinery by a direct investor to a direct investment enterprise) that constitute part of the capital of the direct investment enterprise. Equity capital also covers the acquisition by a direct investment enterprise of shares in its direct investor. However, nonparticipating preference shares are not part of equity capital but are treated as debt securities and classified as other direct investment capital. Purchases and sales of land and buildings by nonresidents are also included in the equity capital component.

**Reinvested earnings.** Reinvested earnings simply represent the shares of foreign investors in the profits of MNFs (multinational firms) that are not distributed. The IMF also defines reinvested earnings as,

The direct investors’ shares (in proportion to equity held) of the undistributed earnings of the direct investment enterprises. Reinvested earnings are considered to be additional capital of the direct investment enterprises. They are recorded as direct investment income, with an offsetting capital transaction.

**Other capital (intra-company loans).** Other capital consists of long-term and short-term intra-company loan transactions between foreign investors and their foreign affiliates. The IMF states that other capital,

Covers the borrowing and lending of funds, including debt securities and trade credits, between direct investors and direct investment enterprises, and between two direct investment enterprises resident in different countries that share the same direct investor. Debt claims on the direct investor by the direct investment enterprise are also included as direct investment other capital. As indicated above, nonparticipating preference shares are treated as debt securities and are therefore classified as other capital.

**Export to import ratio.** The export to import ratio can be defined as the coverage ratio of imports by exports. As a matter of course, we assume that a rise in the export to import ratio demonstrates the extent of a country’s openness to international trade. Hence, this ratio is included in the model with the intention of determining the effects of host country openness on each sub-component of the total FDI in Turkey.

**Real effective exchange rate.** The real exchange rate is calculated simply as the nominal exchange rate—$e_{d,f}$, multiplied by the ratio of the domestic price level—$PPI_{d}$, to the foreign price level—$PPI_{f}$. On the other

---

hand, the real effective exchange rate \((RE_{X_t})\) is found by taking the weighted geometric average of the real exchange rate shown mathematically as,

\[
RE_{X_t} = REX_t = \prod^N \left[ e_{i,t} \frac{PPI_{d,t}}{PPI_{f,t}} \right]^{w_i}
\]

(1)

Where \(N\) refers to the number of countries in the analysis and \(w_i\) refers to the weight of the country \(i\) in Turkey’s \(REX\) index. Consequently, based on equation (1), a decline in \(RE_{X_t}\) can be interpreted as real depreciation of the exchange rate, whereas an increase means real appreciation of the exchange rate. Since the real exchange rate is an indicator of the competitiveness of a country in the international market, the author takes this variable to ensure the potential effect of movements in the exchange rate on the total FDI in Turkey. In the theoretical literature, two arguments attract attention regarding the real effect of the exchange rate on FDI. One of them is the so-called wealth position hypothesis. Froot and Stein (1991) claimed that the depreciation of the host currency causes FDI inflows to rise due to the lowered investment cost and the increased wealth of investors. On the other hand, the second hypothesis which is so-called the relative labour cost proves the opposing argument, which supports the depreciation of the host currency encouraging more FDI inflows due to the lowering of the day-to-day production costs. The study by Cushman (1985; 1988) is consistent with the second hypothesis. Hence, the impact of movements at the real exchange rate level of the host country on FDI remains a complex and unanswered question.

**CR index for Turkey.** CR is a composite index of the financial risk, political risk, and economic risk indexes of Turkey and the EU area for the period between 2003 and 2012. Due to the dominant share of FDI inflows into Turkey sourced from the EU area, reasonably, the author includes the CR index of the EU to account for risks originating in the home country [see the study of Bilgili et al. (2012)]. Moreover, the CR index of the EU area represents the average CR indexes of Belgium, Austria, Denmark, England, Finland, France, Germany, Italy, the Netherlands, Norway, Sweden, and Switzerland. The economic risk rating is used as a means to assess a country’s economic weaknesses and strengths. With respect to risk factors, taken into consideration that economic risk measures are the GDP per head of population, real annual GDP growth, annual inflation rate, budget balance as a percentage of GDP, and current account balance as a percentage of GDP. The financial risk rating, on the other hand, is used to assess a country’s financial weaknesses and strengths. The risk points to be assessed for financial soundness are the foreign debt as a percentage of GDP, foreign debt service as a percentage of exports of goods and services (XGS), current account as a percentage of XGS, net liquidity as months of import cover, and exchange rate stability. Furthermore, the political risk rating is used as a means to assess the political stability of a country. The factors of interest to be assessed are the government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality. Overall, the data points of the CR index range from very high risk (00.0-49.5) to very low risk (80.0-100), which means that as the points become lower and the risks become higher. In other words, a higher value of the CR index means lower aggregated FDI risk for Turkey. Therefore, the author expects that an increase in the CR index of Turkey may have a positive effect on the FDI inflows. On the other hand, the CR index of EU countries may have a positive or a negative effect on FDI in Turkey based on the main objectives of foreign investors.
**Dummy variable to account for June 2006.** A new corporate tax rate was introduced by the Turkish Government in June 2006 to encourage more FDI into the country. To achieve this, the basic corporate tax rate was reduced from 30% to 20% and the withholding tax rate which applies if profits are redistributed, was increased from 10% to 15%. Thus, a reduction in the overall tax burden was realized from about 37% to around 32%. On account of this, the author ensures the potential impact of the new corporate tax rate implementation on the reinvested earnings and thereby overall FDI as well as by including a dummy variable to account for the June 2006 measure.

Moreover, expected sign of the coefficients is explained in Table 1 below.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export to import ratio</td>
<td>Positive</td>
</tr>
<tr>
<td>Real effective exchange rate</td>
<td>Undetermined</td>
</tr>
<tr>
<td>CR index for Turkey</td>
<td>Positive</td>
</tr>
<tr>
<td>CR index for the EU area</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Dummy variable to account for June 2006</td>
<td>Positive</td>
</tr>
</tbody>
</table>

**Methodology**

The restricted size of the annual FDI inflows broken down into components that are heterogeneous leads the author to adopt a panel model that differs from the conventional fixed or random effect specifications. First, he has to consider the heteroskedasticity of disturbances on account of the scaling differences among the components. Therefore, it is assumed that each panel has its own variance. Second, the components are also very likely to be contemporaneously correlated so that each pair of panels has its own covariance. Consequently, the PCSE model may turn out to be an appropriate choice.

Although it can address the issues stated above, the PCSE model is not the only option, but an alternative to feasible generalized least squares (FGLS) cross-sectional time-series models when the disturbances are not assumed to be independent and identically distributed (i.i.d.). Therefore, the disturbances may be either heteroskedastic across panels or heteroskedastic and contemporaneously correlated across panels. Moreover, they may be assumed to be autocorrelated within panels, and the autocorrelation parameter may be constant across panels or different for each panel. The downside of the FGLS method, however, as Beck and Katz (1995) showed, is that the variance-covariance estimates are typically over-optimistic when used with data with units much shorter than time dimensions.

The PCSE model can be written as:

\[ y_{it} = x_{it}^m \beta + \varepsilon_{it} \] (2)

Where \( i = 1, 2, \ldots, m \) is the number of units (or panels); \( t = 1, 2, \ldots, T_i \), with \( T_i \) being the number of periods in panel \( i \); and \( \varepsilon_{it} \) is a disturbance that may be autocorrelated along \( t \) or contemporaneously correlated across \( i \).

The model can also be formulated as a panel by the panel set-up:
DETERMINANTS OF FDI INTO TURKEY: A COMPONENTWISE ANALYSIS

\[
\begin{bmatrix}
y_1 \\
y_2 \\
\vdots \\
y_m
\end{bmatrix} = \begin{bmatrix}
X_1 \\
X_2 \\
\vdots \\
X_m
\end{bmatrix} \beta + \begin{bmatrix}
\varepsilon_1 \\
\varepsilon_2 \\
\vdots \\
\varepsilon_m
\end{bmatrix}
\]  

(3)

For a model with heteroskedastic disturbances and contemporaneous correlation but with no autocorrelation, the disturbance covariance matrix is assumed to be:

\[
E(\varepsilon\varepsilon') = \Omega = \begin{bmatrix}
\sigma_{11}I_{11} & \sigma_{12}I_{12} & \cdots & \sigma_{1m}I_{1m} \\
\sigma_{21}I_{21} & \sigma_{22}I_{22} & \cdots & \sigma_{2m}I_{2m} \\
\vdots & \vdots & \ddots & \vdots \\
\sigma_{m1}I_{m1} & \sigma_{m2}I_{m2} & \cdots & \sigma_{mm}I_{mm}
\end{bmatrix}
\]

(4)

Where \(\sigma_{ii}\) is the variance of the disturbances for panel i, \(\sigma_{ij}\) is the covariance of the disturbances between panel i and panel j when the panels' periods are matched, and I is a Ti by Ti identity matrix with balanced panels. The panels need not be balanced for the PCSE model, but the expression for the covariance of the disturbances will be more general if they are unbalanced.

The above equation could also be formulated as:

\[
E(\varepsilon\varepsilon') = \Sigma_{m;n} \otimes I_{T_i \times T_j}
\]

(5)

Where \(\Sigma\) is a panel-by-panel covariance matrix and I is an identity matrix. The covariance matrix elements are estimated from panels i and j, using the observations with common time periods. Consequently, the estimators for this model achieve their asymptotic behaviour as the Ti approaches infinity.

Empirical Results

The estimation results are reported in Table 2. The aggregated FDI inflows seem to be affected by three variables, namely the CR index of Turkey and the EU area and the tax dummy for 2006. The CR index of Turkey is significant with a low P value (0.013) and positively affects the total FDI. In other words, as the confidence index (CR index) of Turkey increases, the potential direct investments in Turkey also increase since foreign investors may be more confident about investing in Turkey than ever before. On the other hand, the CR index of the EU area is significant with a low P value (0.003) and has a positive impact on the total FDI inflows as well. That is to say, as the confidence index of EU countries increases, the FDI inflows into Turkey also increase. There may be two reasons for this phenomenon. The first revolves around foreign investors' intention to invest in a new market that is unsaturated rather than a saturated market since the EU area is composed of mainly developed countries with saturated markets. As the confidence level increases in these countries, foreign investors may wish to expand their operations to Turkey, which is an unsaturated emerging market with rich natural resources. Second, an increase in the confidence index of EU countries may be perceived as a good signal for banks and other financial institutions to lend funds to foreign investors in order to support their operations abroad. As a result, an increase in the confidence index of EU countries may facilitate borrowing opportunities in financial markets and therefore induce more FDI into Turkey. Furthermore, the tax dummy, which represents the overall corporate tax reduction since 2006, is also highly significant with a low P value (0.000) and has a positive effect on the total FDI. Since foreign investors may reasonably increase their investment as the basic corporate tax rate decreases from 30% down to 20% and decreases the repatriation of
their earnings (therefore increasing reinvested earnings) as the withholding tax rate increases from 10% to 15%, the result is hardly surprising.

Table 2

<table>
<thead>
<tr>
<th>FDI</th>
<th>Coefficient</th>
<th>Std. err</th>
<th>Z</th>
<th>P &gt;</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-58.64399</td>
<td>15.2379</td>
<td>-3.85</td>
<td>0.000</td>
<td>0.077555-0.6706103</td>
</tr>
<tr>
<td>TurkCR</td>
<td>0.3740827</td>
<td>0.1512924</td>
<td>2.47</td>
<td>0.013</td>
<td>3.940991-7.009248</td>
</tr>
<tr>
<td>TaxDum</td>
<td>5.47512</td>
<td>0.7827329</td>
<td>6.99</td>
<td>0.000</td>
<td>-16.70675-8.835834</td>
</tr>
<tr>
<td>ExptImpRatio</td>
<td>-3.93546</td>
<td>6.516086</td>
<td>-0.60</td>
<td>0.546</td>
<td>-0.1737958-0.0650458</td>
</tr>
<tr>
<td>REX</td>
<td>-0.054375</td>
<td>0.0609301</td>
<td>-0.89</td>
<td>0.372</td>
<td>0.1817571-0.8718446</td>
</tr>
<tr>
<td>EUCR</td>
<td>0.5268008</td>
<td>0.176046</td>
<td>2.99</td>
<td>0.003</td>
<td>-88.50972-28.77827</td>
</tr>
</tbody>
</table>

Summary and Concluding Remarks

For two decades, FDI has been one of the key topics debated by both the theoretical and the empirical international trade literature due to its role in globalization and national economic development. Despite the growing interest in FDI, the questions of what really motivates foreign investors to invest in a certain country remain unanswered and a controversial issue. Moreover, previous studies have overwhelmingly treated aggregated FDI as unidimensional rather than multidimensional. In reality, FDI is rather multidimensional in that it is composed of components (equity capital, reinvested earnings, and other capital), each with its intrinsic characteristics in response to the same economic fundamentals, such as growth, institutional quality, exchange rate, taxes, market size, skill abundance, etc. Therefore, the main objective of this study was to seek the major determinants of the total FDI inflows in Turkey by employing disaggregated individual FDI components separately to avoid a distorted empirical prediction concerning the total FDI, which is greatly neglected in the FDI literature.

At the end of the day, the author attributed the positive impact of the CR index of Turkey on the total FDI to the growing confidence of foreign investors investing in Turkey, which is greater than ever before. On the other side, it may be expected that as the confidence level of the home country (EU area) increases, investors may feel more confident about investing at home at the expense of less investment abroad. However, the positive effect of the CR index of EU countries on the total FDI here may account for the better borrowing opportunities arising in these countries, since, as the confidence index of EU countries increases, banks and financial institutions may feel more confident and optimistic about lending funds to the companies in these countries. Consequently, these findings point to the likelihood of potential FDI inflows into the Turkey during economic expansion times at home. Moreover, the author found that foreign investors are sensitive to the 2006 corporate tax arrangements in two ways. First, they increase their foreign investments in Turkey in the case of a reduction in the main corporate tax rate to avoid higher tax payments. Second, they decrease possible repatriation in the case of a higher withholding tax rate. In other words, any rise in withholding tax leads to an increase in the volume of reinvested earnings, as it obviously acts as a deterrent against the repatriation of funds.

References


