

# Uncovering the Channels Through Which FDI Affects Current Account: The Case of Turkey

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# Uncovering the channels through which FDI affects current account: The case of Turkey

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**Abstract** Recent debate regarding foreign direct investment (FDI) flows has focused on the effect of FDI on current account through exports and imports. One aspect which is usually overlooked in the literature is that FDI can have adverse consequences on current account because of increasing amount of profit remittances on FDI flows. In this paper, we argue that FDI can have an effect on current account through three different channels, namely exports, imports as well as profit remittances; and we identify the response differentials of these variables to a change in FDI flows by applying a VAR model. Our findings provide evidence for the current-account disturbing effects of FDI. The results indicate that i) FDI flows lead to a decrease in exports, ii) lead to an increase in imports and profit remittances, and iii) the magnitude of the change in profit remittances in response to a change in FDI flows is greater than that of exports and imports. These findings suggest that profit remittances complicate the relationship between FDI and current account and should be taken into consideration in formulating policies concerning FDI flows.

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*Keywords:* Foreign direct investment, current account, exports, imports, profit repatriation, Turkey.

*JEL Classification:* F21, F32

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## 1. Introduction

Turkey has been reporting large current account deficits in the last few years. Turkey's current account deficit increased by 180 percent in the first six months of 2010 compared to the same period a year earlier (CBRT, 2010). Meanwhile, foreign direct investment flows to Turkey has been decreasing since 2007 and the profit remittances on FDI flows have been increasing

rapidly. Indeed, profit remittances rose by 87 per cent in 2007 and 22 per cent in 2008 (see figure 1). It is expected that profit remittances will continue to increase in the following years as foreign banks transfer their profits to home countries and foreign firms investing in real estate firms begin to realize profits. Not surprisingly, the problem of increasing current account deficit coupled with a surge in profit remittances has recently become a major concern. It has been argued that although FDI may seem beneficial as a source of financing means for the current account deficit, it can also have adverse effects on current account because of profit outflows of foreign companies. Consequently, it is important, both theoretically and practically, to understand the role of foreign direct investment flows on the current account balance.

In the literature, basically three transmission channels through which FDI can affect current account<sup>1</sup> balance are identified. These are exports and imports of foreign-funded enterprises, and profit remittances on FDI<sup>2</sup>. It is argued in the literature that FDI promotes exports by augmenting domestic capital for exports, helping transfer of technology and new products for exports, and facilitating access to new and large markets (UNCTAD, 2002). However, FDI may also lead to a decrease in exports by transferring low-level technologies, targeting the host country's domestic market, and inhibiting the expansion of domestic firms that might become exporters (Zhang, 1999). Whether FDI complements or substitutes exports depends on the type of the FDI. Horizontal FDI, in which multinational enterprises (MNE) have subsidiaries in every country of interest because of transport costs, will have negative effects on exports (Markusen and Venables, 1999; Markusen, 1984). On the other hand, if FDI is vertical,

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<sup>1</sup> There are four sub-accounts under current account namely trade balance, investment income balance, services balance, and unilateral transfers.

<sup>2</sup> According to World Bank (2009), profit remittances on foreign direct investment covers payments of direct investment income, which consist of income on equity (dividends, branch profits, and reinvested earnings) and income on the intercompany debt (interest).

which means that MNEs locate each stage of the production process in different countries according to cost advantages, FDI can have positive effects on exports (Lipsey and Weiss, 1984; Zhang, 1999).

Similar to the dual effect on exports, the impact of FDI on imports can be either positive or negative. FDI increases imports since MNEs need to import certain types of materials which are not readily available in the host country (Alguacil and Orts, 2003). On the other hand, if FDI is concentrated on the import substituting industry, then it is expected to affect imports negatively because the goods that were imported earlier would now be produced in the host country by foreign firms (Blonigen, 2001).

In addition to its effects on exports and imports, FDI can also influence the current account deficit through the profit remittances channel. It is documented in the literature that FDI flows can have negative effects on current account because of the profit outflows of foreign companies (Jansen, 1995; UNCTAD, 1999; Seabra and Flach, 2005; Mencinger, 2008). Mold (2008) states that once profit remittances are taken as a proxy for the price of FDI, FDI becomes an expensive form of financing. For example, according to UNCTAD (1999), for every \$1 transferred to developing countries in the form of FDI, around \$ 0.30 leaves in the form of repatriated earnings. Furthermore, the foreign companies repatriate financial resources to the parent companies, especially during times of crisis, severing current account problems (Doraisami, 2007).

Understanding the potential effects of foreign direct investment flows on exports, imports and profit remittances and exploring the response differentials of these variables to a change in FDI flows is a question worth of empirical study and has several far reaching implications.

**However, this issue has been rarely investigated in the literature. To the best of our knowledge, the studies that consider the effect of profit remittances are limited to the**

**works of Jansen (1995), UNCTAD (1999), Seabra and Flach (2005) and Mencinger (2008).**

**Most of the studies in the literature concentrate on the direct relation between** FDI flows and current account (Bosworth and Collins, 1999; World Bank, 1999, Fry et al. 1995; Jansen, 1995; UNCTAD, 2002) ignoring the fact that the magnitude of the responses of these variables might differ in response to a change in FDI flows. Identifying these response differentials is important for evaluating the effect of FDI on current account for the formulation of macroeconomic policies concerning the flows of FDI. If the positive effect of FDI flows on exports is greater than the effect on imports and profit remittances, then it is suggested that the countries should encourage FDI inflows with continued support for various types of tax and financial incentives. However, if the negative responses of imports and profit remittances to FDI flows are greater, then FDI will have a deteriorating effect on current account balance. In this case, FDI flows can not be viewed as a panacea.

The main purpose of this paper is to investigate the response differentials of exports, imports and profit remittances to FDI flows in Turkey. To our knowledge, this issue has not been tackled for the case of Turkey. There are only a few studies which examine the relation between FDI and exports and imports separately. For example, Onwuka and Zoral (2009) examined the relationship between FDI and imports over the period 1950-2004 using the bounds testing approach in ARDL and concluded that FDI leads to an increase in imports. By employing a VAR methodology and granger causality analysis, Altintas (2009) found that there is a complementary relationship between FDI and trade in Turkey for the period between 1996 and 2007. Therefore, to fill a gap in the literature, we seek to quantitatively measure the response differentials among exports, imports and profit remittances. To this end, we employ Johansen cointegration procedure developed by Johansen (1988) and a VAR framework. This method helps us identify

the existence of a long-term relationship between FDI and exports, imports and profit remittances on FDI as well as identifying any differences between the magnitudes of the responses of the variables to FDI flows. Our findings indicate a cointegrated relationship between these variables during the period under study. We find that while FDI flows lead to a decrease in exports, they also cause an increase in imports and profit remittances, indicating the presence of current account disturbing effects of FDI. Moreover, the results show that the magnitude of the change in profit remittances is greater than that of exports and imports, which shows that profit remittances complicate the relation between FDI and current account. Our findings point out that; although it is well documented in the literature that FDI brings many benefits to the host countries by bringing new capital and resources, creating employment opportunities, developing productive capacity, improving human capital, and enhancing access to markets<sup>3</sup>; FDI can also bring certain risks to the developing countries by having adverse effects on current account by decreasing exports, increasing imports and profit remittances. Thus, policy makers in Turkey and elsewhere should place special emphasis on the effects of FDI flows on current account in general, and the effect of profit remittances in particular.

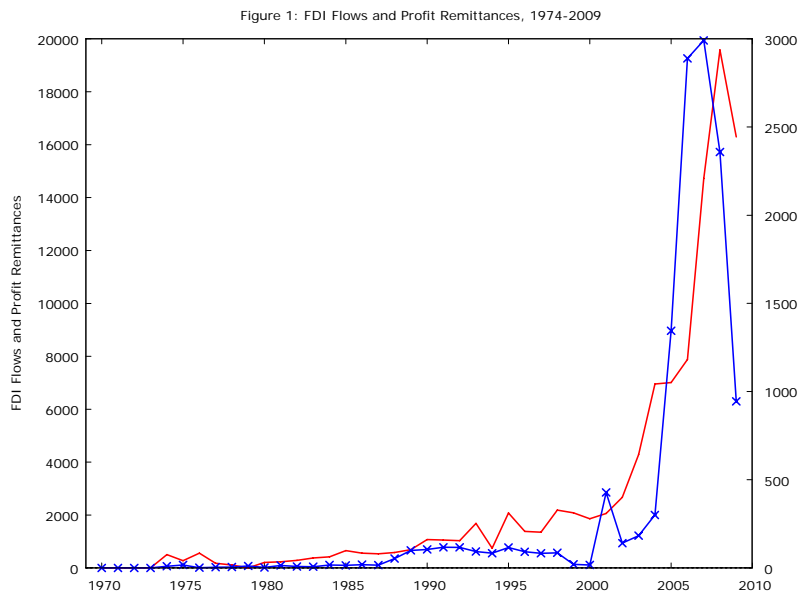
The rest of the paper is organized as follows: Section 2 briefly describes the recent trends in FDI flows and current account in Turkey. Section 3 discusses the methodology and the data, and presents our empirical results. Section 4 concludes by pointing out some of the policy implications of our findings.

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<sup>3</sup> For the beneficial effects of FDI, the reader is referred to de Mello (1997), Borensztein et al. (1998), De Gregorio

## 2. An Overview of the FDI Inflows and Current Account in Turkey

Foreign direct investment flows to Turkey has increased by a substantial amount in recent years. **According to the World Development Indicators (2011) data, the amount of FDI inflows totaled \$ 70.41 billion during the period 2000-2008.** FDI inflows to Turkey were very low prior to 1980 because of the inward oriented economic policies. After the adoption of liberal policies in 1980, the country began to attract increasing flows of FDI. However, as can be seen in Figure 1, the amount of FDI inflows was still unsubstantial during the early 1980s. The major increases in the FDI volume occurred in late 1980s. FDI inflows amounted to \$115 million and \$354 million in 1987 and 1988 respectively. FDI inflows continued to increase until 1993 but there was a slight decrease in 1993 as part of the economic and political uncertainties in the country. During the late 1990s and early 2000s, FDI flows remained at low levels because of the financial crises in 1994 and 2001 and the Russian financial crisis. Consequently, FDI flows to Turkey declined from \$3.4 billion in 2001 to \$1.1 billion in 2002. Following the European Union's decision in 2004 to begin membership negotiations with Turkey, FDI inflows began to increase rapidly and reached \$10 billion in 2005. The upward trend continued and FDI flows further increased to \$20 and \$22 billion in 2006 and 2007 mostly due to the acquisitions in telecommunications and financial sectors. FDI flows to Turkey began to decrease again after 2007 as a result of the slow down in the world economy.



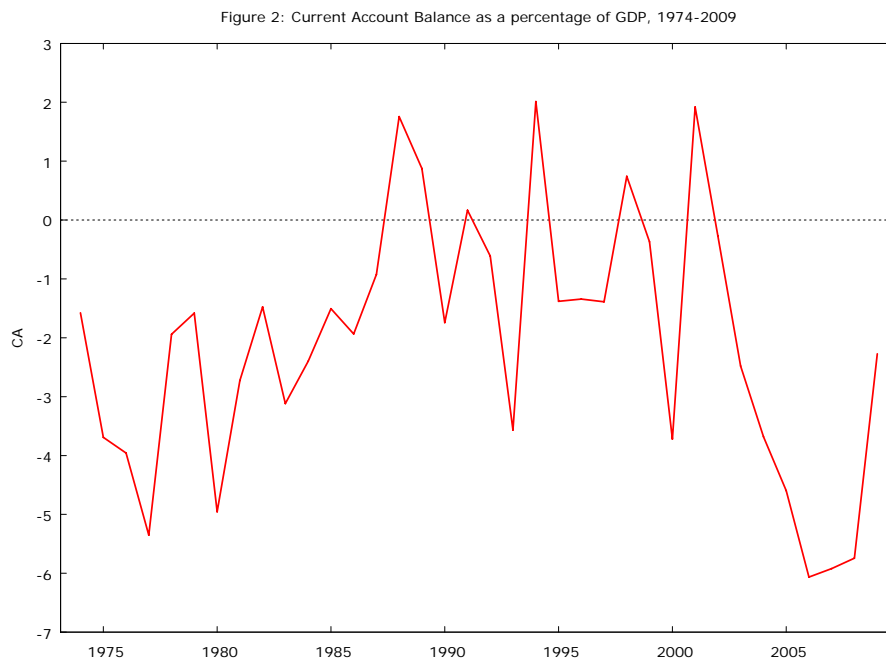
Source: World Development Indicators, 2010

One important feature of FDI flows to Turkey is that FDI has been mostly in terms of mergers and acquisitions rather than greenfield investment. Therefore, they have limited spillover effects and little contribution to the productive capacity and exports. The sectors that attract the majority of FDI flows are the financial sector, the communications and transportation sector, the real estate sector, and the manufacturing sector (Temiz and Gokmen, 2009).

**Figure 1** depicts the recent trends in profit remittances<sup>4</sup>. Consistent with the low levels of FDI, profit remittances of FDI were very low prior to 1990. Before 2000, profit remittances were approximately ranging between \$200 and \$300 million. However, repatriation of profits began to increase after 2000. The sum of profits repatriated between 1990 and 2002 was \$ 3.1 billion. Because of the increasing foreign bank participation in the Turkish banking system through acquisitions of domestic banks, profit remittances increased further after 2002, totaling to \$ 8.7 billion between 2003 and 2008. Repatriation of profits and dividends from Turkey rose by 87



percent in 2007 and 22 percent in 2008. It is expected that profit remittances will continue to increase in the following years as foreign banks transfer their profits to home countries and foreign firms investing in real estate firms begin to realize profits.



Source: World Development Indicators, 2010

Figure 2 presents the trends in current account balance between 1974 and 2008. Current account deficits have always been a major concern for the Turkish economy. Current account deficits have been blamed for the financial crisis in 1994 and 2001. However, current account deficit reached to 5 percent of GDP in 2004, which is considered a warning level, and continued to increase thereafter because of the soaring food and energy prices, appreciation of the TL and higher investment rates compared to the lower savings rate (Akçay and Ucer, 2008). In 2008, the current account deficit stood at \$ 41.289 billion and increased further in consecutive years.

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<sup>4</sup> The data on profit remittances is obtained from the World Development Indicators database.

### 3. Empirical Analysis

We use annual data for the period 1974-2009. The data on foreign direct investment (FDI), exports (EXP), imports (IMP) and profit remittances (PROFIT) are compiled from World Development Indicators database. All data is deflated using Consumer Price Index and are expressed in logarithms.

To examine the relation between FDI, exports, imports and profit remittances, we employ the two-step process for cointegration tests proposed by Engle and Granger (1987). We first conduct Dickey Fuller (1979) tests to test the stationarity of all variables. Secondly, if the variables have roots of the same order, we test for cointegration using test procedures provided by Johansen (1988, 1991).

Dickey-Fuller (1979) suggest a statistical procedure for testing the null hypothesis of nonstationarity, and provide critical values for  $\tau$  statistic with and without trend variable.

The test is performed by estimating the following equation:

$$\Delta y_t = a_0 + a_2 t + \gamma y_{t-1} + \sum_{i=2}^p \beta_i \Delta y_{t-i+1} + \varepsilon_t \quad (1)$$

where FDI, EXP, IMP, PROFIT are variables in vector  $y$ ,  $t$  is a trend,  $p$  is the number of lag lengths, and  $\varepsilon_t$  is the residual term. Table 1 reports the results of Augmented Dickey-Fuller (ADF) unit root tests of FDI, EXP, IMP, PROFIT. It is seen in the table that the null hypothesis that  $y$  contains a unit root cannot be rejected for these variables, meaning that all variables are

nonstationary in their levels. Thus, we take the first differences to make them stationary. It is also evident from the table that the first differenced series are stationary.

After confirming that EXP, IMP, PROFIT, and FDI are all I(1), we continue with testing long-run cointegration relationship among the variables using Johansen cointegration technique. This test is preferred to the simpler regression-based Engle and Granger (1987) test because it fully captures the underlying time-series properties of the data and thus provides a test statistic for the total number of cointegrating vectors.

The Johansen test estimates the following regression equations:

$$\Delta y_t = c + \Psi_1 \Delta y_{t-1} + \dots + \Psi_{k-1} \Delta y_{t-k+1} + \psi_k \Delta x_{t-k} + \varepsilon_{1t} \quad (2)$$

$$y_{t-k} = c + \phi_1 \Delta y_{t-1} + \dots + \phi_{k-1} \Delta y_{t-k+1} + \psi_k \Delta x_{t-k} + \varepsilon_{2t} \quad (3)$$

The squares of canonical correlations between the residuals are calculated and ranked as  $\theta_1 > \theta_2 > \theta_3$ . The Johansen trace test is given by:

$$\lambda_{trace}(r) = -N \sum_{j=r+1}^n \ln(1 - \theta_j)$$

We use trace test statistic to test the null hypothesis of ‘the number of distinct cointegrating vector is less than or equal to the number of cointegrating relations’. In Table 2, we present Johansen Cointegration test results. Because the trace value exceeds the critical values, we reject the null hypothesis of no cointegrating vectors and conclude that there are three cointegrating vectors. Since the Johansen approach is sensitive to the lag length chosen, we conduct a series of tests to determine the optimal lag length and choose a model with lag length 1<sup>5</sup>.

Table 3 presents the values of the coefficients of the cointegrating vectors. The signs of all variables are consistent with the theory. This implies that there is a long-run and stable relationship among the endogenous variables under consideration. It is seen that FDI is

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<sup>5</sup> The lag length is selected as one given by the Akaike’s Information Criterion (AIC) and it leads no serial correlation and allows for normality of the residuals.

negatively related with exports in Turkey, meaning that most of the MNEs in Turkey do not generate exports but rather target the domestic market. Given the fact that FDI in Turkey has been mostly in the form of mergers and acquisitions, the negative effect of FDI on exports is not surprising. Imports, on the other hand, increases with foreign direct investment. This finding is in line with that of Onwuka and Zoral (2009). Similarly, profit remittances and FDI are positively related consistent with the findings of Seabra and Flach (2005). Although the coefficients of cointegrating vectors provide information regarding the direction of the relationship between the variables, they do not provide any structural interpretations regarding the magnitude of the parameters of the cointegrating vectors (Dickey et al., 1991). Therefore, following Kim (2005), to identify the magnitude of the changes in exports, imports and profit remittances in response to a change in FDI<sup>6</sup>, we utilize a VAR framework, which helps us to capture the dynamic relationship between FDI, exports, imports and profit remittances. Because the variables are cointegrated, following Sims, Stock and Watson (1990), we enter these variables into the system in log-levels when the VAR analysis is performed. We construct a VAR model as follows:

$$Y_t = \alpha + \sum_{l=1}^m \alpha_l Y_{t-l} + \varepsilon_t \quad (2)$$

Here,  $Y_t$  refers to dependent variables,  $t$  ( $t = 1, \dots, T$ ) refers to the time period, and  $l$  refers to the lag number.  $\varepsilon_t$  is the error term.

More specifically, we apply innovation accounting techniques (variance decomposition and impulse response function analysis) to analyze the relationship between FDI, and other

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<sup>6</sup> It should be noted that there is a two-way relationship between FDI and these variables. However, in this study we are interested in identifying the effect of FDI on exports, imports, and profit remittances separately.

variables of interest in the system. According to Enders (1995), the forecast error variance decomposition allows us to make inference over the proportion of movements in a time series due to its own shocks versus shocks to other variables in the system. The forecast error variance decomposition of VAR model is estimated using Cholesky decomposition method over an eight-year forecast horizon. The results are given in Table 4. The results show that only 0.03 percent of the innovations in exports are explained by FDI, while 4.06 percent of the innovations in imports are explained by FDI. Approximately 9 percent of the variation in profit remittances is caused by FDI. These findings indicate that the effect of FDI on imports and profit remittances is greater than the effect on exports. We also utilize impulse response function analysis to determine how endogenous variables respond over time to a shock in FDI. By obtaining accumulated impulse responses, we can examine the response differentials of exports, imports, and profit remittances to a shock in FDI. The accumulated impulse response functions reported within a 8-year horizon are presented in Table 5. For every one unit shock in FDI, there is a 0.004 unit change in exports, 0.03 unit change in imports and 0.12 unit change in profit remittances in the second period after the shock was induced. Consistent with the results of the variance decomposition analysis, the impulse response functions also indicate that the responses of imports and profit remittances are greater in magnitude than those of exports. The results of both variance decomposition analysis and impulse response functions point out the current account deteriorating effects of FDI.

#### **IV. Conclusion**

Turkey has gone through a process of liberalization since the 1980s and experienced a substantial increase in the amount of foreign direct investment flows in the recent years. Yet, the question remains as to the possible effects of FDI on current account in Turkey. In this paper, we

argue that FDI can have an effect on current account through exports, imports as well as profit remittances. As a result, we investigate the relationship between FDI flows and current account by observing the response differentials between exports, imports and profit remittances to FDI flows. Our approach is based on employing Johansen cointegration tests as well as VAR techniques of innovation accounting. Using data for 1974-2009 period, we find that FDI and exports are negatively related in Turkey, providing evidence for the existence of horizontal FDI. That is, MNEs in Turkey compete for the domestic market rather than generating exports. In addition, FDI seems to increase imports and profit remittances. These results indicate that FDI contributes to the already high levels of current account deficit.

Our findings have several important policy implications. First, although FDI may seem beneficial as a source of financing means for the current account deficit, it may eventually lead to balance of payments problems due to adverse effects on current account. In this respect, even the role of FDI on economic growth can be questioned. Second, the huge outflow of foreign exchange from the country in recent years in the form of profit remittances raises the concerns over the policy of allowing hundred percent repatriation of profits. Instead, foreign companies may be made to invest a substantial part of their earnings locally. Finally, to maximize the gains from FDI, the policies implemented to attract more FDI flows should be designed to take into account the sectoral distribution of FDI flows. For example, FDI flows in Turkey have been mostly concentrated on the telecommunications and finance sectors in the recent years, which are associated with high profit remittances. Thus, for the effective formulation of policies, special emphasis should be given to profit remittances on FDI flows.

## References

- Alguacil, M.T., and Orts,V. (2003) Inward Foreign Direct Investment and Imports in Spain, *International Economic Journal*, 17 (3), 19-38.
- Altıntaş, H. (2009) The Econometric Analysis of the relation between Foreign direct investment and trade in Turkey: 1996-2007 (Türkiye’de Doğrudan Yabancı Sermaye Girişi ve Dış Ticaret Arasındaki İlişkinin Ekonometrik Analizi: 1996-2007), *Kahramanmaraş University Journal of Faculty of Economics and Administrative Sciences*, 64 (2)
- Akçay, C., and Ucer, M. (2008) A Narrative on the Turkish Current Account, *The Journal of International Trade and Diplomacy*, 2 (2), 211-238.
- Blonigen, B. (2001) In Search of Substitution Between Foreign Production and Exports, *Journal of International Economics*, 53 (1), 81-104.
- Bosworth B., Collins, S. (1999) “Capital Flows to Developing Economies: Implications for Saving and Investment”, *Brookings Papers on Economic Activity*, 1, 1999: 143-180.
- Borenstein, E., De Gregorio, J., and Lee, J.W. (1998) How does foreign investment affect growth? *Journal of International Economics*, 45, 115-135.
- Central Bank of Republic of Turkey (CBRT) (2010) Balance of Payments Report, 2010-III.
- De Mello, L. (1997) Foreign direct investment in developing countries and growth: A selective survey. *Journal of Development Studies*, 34 (1), 1-34.
- De Gregorio, J. (2003) The role of foreign direct investment and natural resources in economic development, Working Paper No. 196, Central Bank of Chile, Santiago.

- Doraisami, A. G. G. (2007) Financial Crisis in Malaysia: Did FDI Flows Contribute to Vulnerability? *Journal of International Development*, 19, 949-962.
- Dickey, D.A., and Fuller, W.A. (1979) Distribution of the Estimators for Autoregressive time series with unit root, *Journal of American Statistical Association*, 74, 427-431.
- Dickey, D.A., D. Jansen, Thornton, D. (1991) A Primer on Cointegration with an Application to Money and Income, *Review of Federal Reserve Bank of St. Louis*, 73, 58-78..
- Enders, W. (1995) *Applied Econometric Time Series*, John Wiley and Sons.
- Engle, R.F., and Granger, C.W.J. (1987) Cointegration and Error Correction: Representation, Estimation, and Testing, *Econometrica*, 55, 251-276.
- Fry, M., Claessens, S., Burridge, P., Blanchet, M. (1995) Foreign Direct Investment, Other Capital Flows and Current Account Deficits: What Causes What?, *World Bank Policy Research Working Paper*, No. 1527.
- Jansen, K. (1995) The Macroeconomic Effects of Foreign Direct Investment: The Case of Thailand, *World Development*, 23 (2), 193-210.
- Johansen, S. (1988) Statistical Analysis of Cointegrating Factors. *Journal of Economic Dynamics and Control*, 12, 231-254.
- Kim, D.K. (2005) Money and Its Effect on US Housing Sub-Markets: Evidence from the VAR model, *Journal of Business and Economics Research*, 3 (12), 48-52.
- Lipsev, R., and Weiss, N.Y. (1984) Foreign Production and Exports of Individual Firms, *Review of Economics and Statistics*, 66, 304-307.
- Mold, A. (2008) The Fallout from the Financial Crisis (4): Implications of FDI to Developing Countries, *Policy Insights No.86*, OECD Development Centre.



- Markusen, J. R. (1984) Multinationals, Multiplant Economies, and the Gains from Trade, *Journal of International Economics*, 16, 205-226.
- Mencinger, J. (2008) The "Addiction" with FDI and Current Account Balance, ICER Working Papers 16-2008, ICER - International Centre for Economic Research.
- Markusen, J. R., and A.J. Venables. (1999) Foreign Direct Investment as a Catalyst for Industrial Development, *European Economic Review*, February, 3335-3356.
- Mold, A. (2008) The Fallout from the Financial Crisis (4): Implications for FDI to Developing Countries, OECD Development Centre, Policy Insights, No:86.
- Onwuka, K., and Zoral, K.Y. (2009) Foreign Direct Investment and Imports Growth in Turkey, *Journal of Yasar University*, 4 (15), 2357-2380.
- Seabra, F., and Flach, L. (2005) Foreign Direct Investment and Profit Outflows: A Causality Analysis for the Brazilian Economy, *Economics Bulletin*, 6 (1), 1-15.
- Sims, C.A., J.H. Stock, and Watson, M.W. (1990) Inference In Linear Time Series Models with some Unit Roots, *Econometrica*, 58, 113-147.
- Temiz, D., Gokmen., A. (2009) Foreign Direct Investment and Exports in Turkey: The Period of 1991-2008, Conference Paper presented at the EconAnadolu2009: Anadolu International Conference in Economics, June 17-19, 2009, Eskisehir.
- United Nations Conference on Trade and Development (UNCTAD) (1999). *World Investment Report*, Geneva, UNCTAD.
- United Nations Conference on Trade and Development (UNCTAD) (2002) *World Investment Report 2002: Transnational Corporations and Export Competitiveness*, Geneva.
- World Bank (1999) *Global Economic Prospects and the Developing Countries*

Zhang, K.H. (1999) How does FDI affect a host country's export performance? The Case of China, *Economic Systems*, 21 (4): 291-303.

**Table 1. Augmented Dickey Fuller Test Results**

Variables	Constant and Trend
1. ADF Test for unit root on the level series	
Exports	-3.48**

Imports	-2.04
Profit Repatriation	-1.31
FDI	-2.56
2. ADF Test for unit root on the first differenced series	
Exports	-6.07*
Imports	-5.01*
Profit Repatriation	-4.88*
FDI	-5.99*

**Notes:** \* indicates that variable is stationary at the 1% level. The critical value for constant and trend at 1, 5 and 10 % for the ADF test is 3.77, 3.19 and -2.89 respectively. \*\* indicates that variable is nonstationary at 1% level.

**Table 2: Johansen Cointegration Test Results**

Hypothesized Number of Cointegrated Equations	Eigenvalue	Trace Test	5% Critical Value
None	0.833	105.43	47.21
At most 1	0.511	48.10	29.68
At most 2	0.337	25.20	15.41
At most 3	0.313	12.03	3.76

**Table 3: Coefficients of Estimated Cointegrating Vectors**

	<i>ln</i> EXP	<i>ln</i> IMP	<i>ln</i> PROFIT	<i>ln</i> FDI
Estimated Cointegrating Vector (Normalized with respect to Exports)	1	-0.74 [-0.93]	-1.36 [-2.37]	0.88 [4.07]

Estimated Cointegrating Vector (Normalized with respect to Imports)	-1.87 [-8.43]	1	0.19 [2.14]	-0.20 [-4.69]
Estimated Cointegrating Vector (Normalized with respect to Profit Remittances)	-9.59 [-6.96]	5.10 [4.18]	1	-1.04 [-4.70]

**Not:** The values in paranthesis are t values.

**Table 4. Variance Decomposition percentage of ten-year error variance**

<b>Percent of forecast error Variance in:</b>	<b>Typical Shock in FDI</b>
Exports	0.0393
Imports	4.0686
Profit Repatriation	9.64
FDI	48.20

**Table 5: Responses to a one-standard error shock in l\_RFDI**

<b>Period</b>	<b>Exports</b>	<b>Imports</b>	<b>Profit Repatriation</b>
1	0.00000	0.00000	-0.0080044
2	-0.0040668	0.037357	0.12907
3	-0.0061573	0.047158	0.10267
4	-0.0041034	0.041154	0.075372
5	-0.0013664	0.032681	0.055788
6	0.00098849	0.025496	0.042071
7	0.0028149	0.020115	0.032467
8	0.0041952	0.016262	0.025753