

Ayca Sarialioglu Hayali  
Karadeniz Technical University  
Department of Economics  
Kanuni Kampusu, IIBF, Iktisat Bolumu,  
61080 Trabzon, Turkey  
aycasarialiogluhayali@ktu.edu.tr  
Phone: +905324626730

JEL: F21, F41  
Original scientific article

Received: January 15, 2020  
Accepted for publishing: May 10, 2020

This work is licensed under a  
Creative Commons Attribution-  
NonCommercial-NoDerivatives 4.0  
International License



# THE RELATIONSHIP BETWEEN FOREIGN DIRECT INVESTMENT AND CURRENT ACCOUNT THROUGH PROFIT OUTFLOWS: THE TURKISH CASE

## ABSTRACT

The developing world invites Foreign Direct Investment (FDI) to their countries nearly unconditionally for the developmental benefits. However, in literature there are concerns regarding 'unfettered FDI' in terms of several factors including FDI outflows which contribute to Current Account Deficits. This paper investigates the relationship between FDI and profit outflows on the case of Turkey via economic causality analysis through Granger causality test using a method developed by Toda and Yamamoto (1995) and the impulse-response analysis. The results indicate that although there are short-term positive effects of FDI inflows in terms of current account financing, the causality results point to the long-term adverse effects of FDI inflows on profit remittance leading to current account deficit, which is an issue that policy makers should consider when trying to attract FDI.

**Keywords:** Foreign Direct Investment, profit outflows, Turkish case

## 1. Introduction

The formal definition of Foreign Direct Investment (FDI) by the IMF (1998) is as follows:

"...a category of international investment made by a resident entity in one economy (direct investor) with the objective of establishing a lasting interest in an enterprise resident in an economy other than that of the investor (direct investment enterprise). 'Lasting interest' implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the direct investor on the management of the direct investment enterprise."

Such 'lasting interest' of FDI together with the facts that the debt crises in the 1980s reduced the foreign

bank loans availability as a financial resource and also the short term portfolio investment, another possible financial resource, created several financial crises in the 1990s has made FDI a unique financial source for developing countries. Hence, the developing world has invited FDI to their countries nearly unconditionally for developmental purposes offering a range of incentives, such as 'financial and tax incentives' as well as 'market preferences' in order to attract FDI. However, in literature there are concerns regarding 'unfettered FDI' in terms of several factors including FDI outflows which contribute to Current Account Deficits (CAD). It is argued that if the right kind of FDI in the right amounts is to be attracted by the developing countries in order to maximize the benefits from FDI for developmen-

tal purposes, effective state should be there to manage the process (Singh, 2005: 12). In this regard, in order to avoid financial fragility stemming from the 'unfettered FDI', which makes the economic structure prone to crises, the amount and timing of FDI would need to be monitored and regulated by the governments. It is argued that aggregate foreign exchange inflows and outflows, both in the short and long run, which stem from the large FDI projects that may generate a 'time profile' of these outflows (in the form of dividend payments or profits transaction) and inflows, could be time inconsistent. In this regard, this time inconsistency can cause liquidity crises and even solvency crisis with the worst consequences for economic development as seen in Asia (Singh, 2005: 9-10).

In this regard, this paper investigates the relationship between FDI and CAD through profit outflows on the case of Turkey via economic causality analysis and the impulse response analysis. Such an analysis and evaluation in the regard of Turkish case are original and try to fill the gap in the existing literature. To do this, unit root tests for testing the stationarity of data for Turkey are examined first and then the economic causality of FDI profit outflows with FDI inflows is analyzed by Granger causality tests, using a method developed by Toda and Yamamoto (1995: 225-250). This is followed by an impulse-response analysis with the variance decomposition test. In this regard, the paper is organised as follows. After the background part that tackles the eras of 1980s and 1990s with the FDI Characteristics in Turkey, a brief literature review is done; in the second part, the data set is described with the descriptive statistics and in the last part, the economic causality is conducted with the im-

pulse-response analysis followed by the variance decomposition test.

## 2. The Background Era: The 1980s and the 1990s with the FDI Characteristics in Turkey

Through the liberalisation trend in the 1980s, the developing world including Turkey started to implement liberalisation and privatisation policies, which promoted capital inflows into these countries. These capital flows in the first years of the 1980s following the late 1970s were mostly in the form of syndicated, variable rate foreign bank loans denominated in major currencies, mostly in dollars, which is called 'petro-dollars', due to the fact that these dollars were gained from the dramatic increase of oil prices made by the Organization of Petroleum-Exporting Countries (OPEC), which led to the oil crises in the 1970s. IMF (1998) explains that "The capital flows that took place between the first oil crisis of 1973 and 1982 were linked to the recycling of oil revenues" (IMF, 1998: 59)<sup>1</sup>. However, following the 1982 debt crisis, the structure of capital flows to developing countries started to change from bank lending to FDI and portfolio investment (Eichengreen, Fishlow, 1998: 24) as seen in Table 1. This process was accelerated by the liberalisation and privatisation programs in developing countries. Schmukler and Zoido-Lobaton (2001) put the situation as follows: "Deregulation, privatization, and advances in technology made FDI and equity investments in emerging markets more attractive to firms and households in developed countries. The 1990s witnessed an investment boom in FDI and portfolio flows to emerging markets" (Schmukler, Zoido-Lobaton, 2001: 2).

**Table 1 Composition of Private Capital Flows to Developing Countries (in million dollars - on average and % of the total flows - on average)**

Type of Flow	1973-81	1982-1989	1990-97
Bonds	1,216.1 (4%)	1,370 (5.4%)	22,261 (16.2%)
Bank Lending	20,449.4 (70%)	10,317.5 (40.6%)	17,008.5 (12.4%)
Foreign Direct Investment (FDI)	7,506.9 (26%)	13,369.1 (52.7%)	79,820.7 (57.9%)
Portfolio Equity	31.8 (0%)	328 (1.3%)	18,643.3 (13.5%)

Source: Author's research; WB Global Development Finance Data (Edition 2010)

The restructuring of the world economy, which started in the 1980s through the policies of liberalisation and deregulation of financial markets continued into the 1990s, under the name of 'globalisation'. This was by virtue of the significant developments in ICTs and in the political arena through having entered a new unipolar world order after the collapse of the Soviet Union. In this regard, the 1990s globalisation, which has already left the 'global village' stage, brought new dimensions to the countries – whether economic, social and political restructuring, making them

"open," never seen before in the world economy. In other words, "global economic activity is significantly greater relative to domestically-based economic activity than in previous historical periods and impinges directly or indirectly on a greater proportion of national economic activity than ever before" (Peraton et al., 1997: 274). However, such 'openness' has created several vulnerabilities for economies in terms of crises through various channels, such as CAD. Table 2 summarizes some of the 1990s globalisation tendencies stated above.

**Table 2** *Some Indicators of the Globalisation of the 1990s*

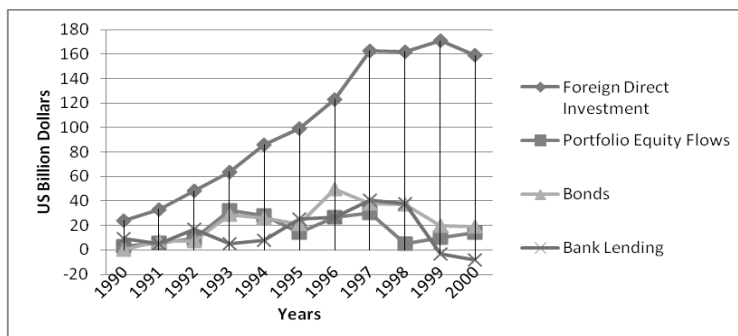
Item	Annual Growth Rate (per cent)		
	1986-1990	1991-1995	1996-2000
FDI inflows	23.6	22.1	39.4
FDI outflows	25.9	16.5	35.6
FDI inward stock	15.1	8.6	16.0
FDI outward stock	18.1	10.6	16.9
Cross-border M&As	32.0	15.7	62.9
Sales of Foreign Affiliates	19.7	8.8	8.1
Gross Product of Foreign Affiliates	17.4	6.8	6.9
Total assets of Foreign Affiliates	18.1	13.7	18.9
Exports of Foreign Affiliates	22.2	8.6	3.6
Employment of Foreign Affiliates (Thousands)	5.5	5.5	9.7
Gross Domestic Product (GDP) (in current prices)	9.5	5.9	1.3
Gross Fixed Capital Formation	10.0	5.4	1.1
Royalties and Licence Fee Receipts	21.1	14.6	8.1
Exports of Goods and Non-factor Services	11.6	7.9	3.7

Source: United Nations Conference on Trade and Development (UNCTAD), *World Investment Report (2009)*<sup>2</sup>

As Table 2 shows, both international trade (exports) and FDI, some of the indicators of the globalisation of the 1990s, had grown relatively faster than world output since the mid-1980s. Follow-

ing the tendencies in the 1980s, the structure of capital flows to developing countries continued to be in the form of FDI and portfolio investment as seen in Figure 1.

**Figure 1** *Private Capital Flows to Developing Countries*



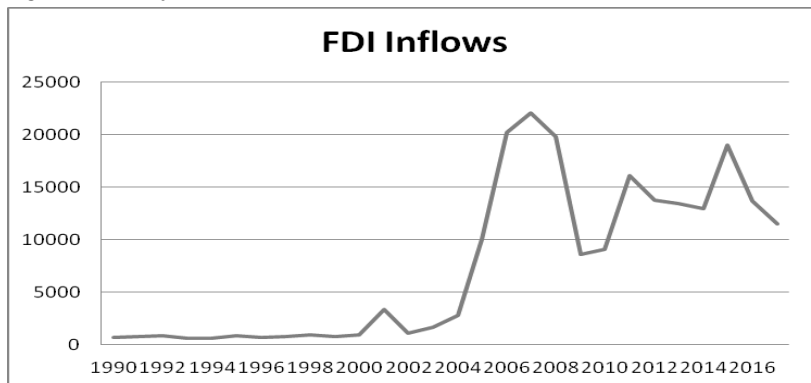
Source: Author's research; WB Global Development Finance Data (Edition 2010)

Among these developing countries, since the 1980s Turkey has implemented liberalized policies for attracting FDI<sup>3</sup>. In this regard, Akpolat and Inancli (2011) put the liberalization process in Turkey as follows: “Turkey is one of the emerging economies which have changed its trade and investment regimes in the early 1980s. Turkey carried out this transformation by adopting a new liberal macroeconomic framework. Turkey, as many developing countries, has implemented foreign capital-promoting policies. Obstacles which prevent foreign capital to enter into Turkey have been removed gradually” (Akpolat, Inancli, 2011: 57). Moreover, by passing the Foreign Direct Investment Act (No. 4875) in 2003 the foreign capital regime of Turkey continued to be highly liberalized. Hisarciklilar et al. (2010)<sup>4</sup> commented on the importance of this law with the following words: “With this legislative change, invest-

ment climate has been made more favourable for the entries of foreign firms. The Act guarantees non-discriminatory treatment, with equal rights for foreign and national investors. The FDI Act removed the screening and pre-approval procedures for FDI projects, redesigned the company registration process so that it was equal for domestic and foreign firms, facilitated the hiring of foreign employees, included FDI firms in the definition of ‘domestic tenderer’ in public procurement, granted foreign investors full convertibility in their transfers of capital and earnings and authorized foreign persons and companies to acquire real estate in Turkey...” (Hisarciklilar et al., 2010: 4).

It can be said that thanks to such liberalized policies, in addition to several other factors, Turkey had an upward trend in FDI inflows for the period of 1990-2017, as seen in Figure 2.

Figure 2 FDI inflows, US\$ million, 1990-2017



Source: Author's research; UNCTAD, FDI/MNE database, available at: [www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics)

However, when Turkey's performance in attracting FDI inflows is observed in detail in Figure 2, it can be said that although in this period Turkey's ability to attract more FDI into the country seems remarkable, it mostly stems from the period 2004-2010 in which mass privatisation, which attracted brown-field investments (M&As) of FDI, was experienced. Onis (2011) explains this fact as follows: “...The major boom in privatisation revenues occurred in the post-2004 era, which corresponds with the start of formal negotiations with the European Union for full-membership. ...illustrates the fact that privatisation and foreign direct investment are highly interrelated phenomena” (Onis, 2011: 711). In this

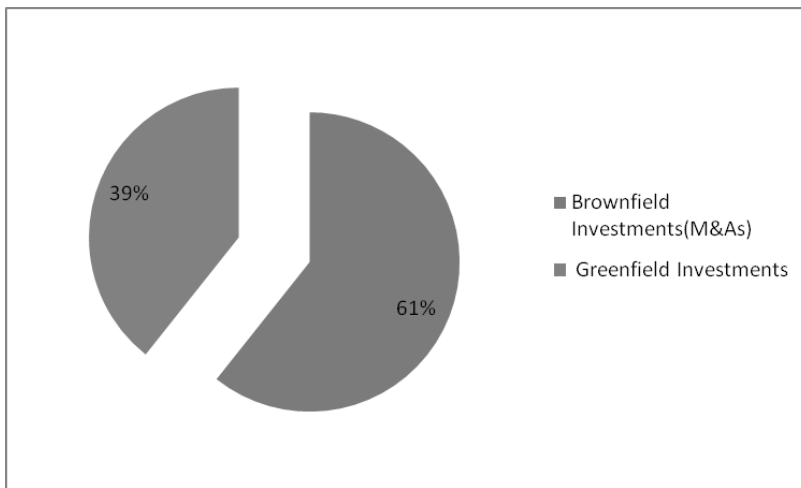
period Turkey also benefitted from the macroeconomic policies that were implemented to ensure macroeconomic stability after the country's financial crisis in 2001, during which a dramatic increase in FDI inflows is also noticeable in Figure 2, as a result of the “fire sale” of local firms. In this regard, Kazgan (2012) puts this issue as following words:

“Until 2001, which is the severest crisis year of Turkey that ever experienced, it [FDI inflows] annually remained at a value such as an average of 800 odd million dollars, which can be ignored. [On the other hand] While the stocks market bottomed out at the crisis year of 2001, it peaked up at 3.3 billion dollars. This means (due to the accelerating exchange rate

and bottoming out the stock prices) the taking over of the local firm stocks at these lower prices by the foreigners. If the stocks to be sold at 10 dollars in normal conditions are sold at 5 dollars it is clear that this is a significant capital loss. In this regard, in the crises of 1994 and 2000-2001 a significant share of banks, tourism firms and food industry were taken over through this way" (Kazgan, 2012: 253).

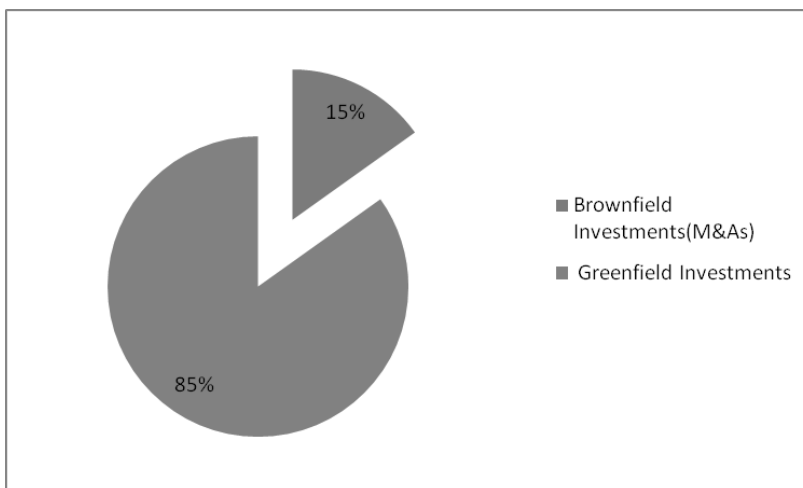
Moreover, as seen in Figure 3 for the 1990-2010 period, FDI inflows mostly entered Turkey as brownfield investments, namely, via cross-border M&As, rather than new greenfield investments. This was contrary to the rest of the developing world in terms of the entry mode of FDI<sup>5</sup>, as seen in Figure 4.

**Figure 3** Percentage share of brownfield and greenfield investments of FDI inflows into Turkey, annual average 1990-2010



Source: Author's research; UNCTAD, FDI/TNC Database (2010) and UNCTAD Cross-border M&A Database (2010)

**Figure 4** Percentage share of brownfield and greenfield investments of FDI inflows into developing world, annual average 1990-2010

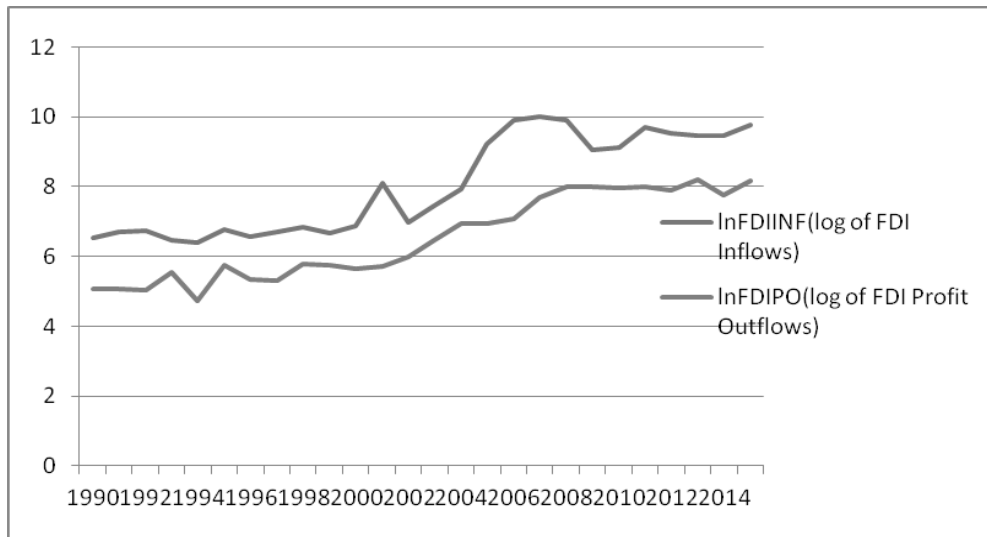


Source: Author's Research; UNCTAD, FDI/TNC Database (2010) and UNCTAD Cross-border M&A Database (2010)

Moreover, Kazgan (2012) notes that although there was not any upward trend of direct fixed capital investments of FDI inflows from 1995 till 2003 except for the crisis years, there was an upward trend of the FDI outflows from Turkey, which were over 2 billion dollars for the severest crisis years 1999-2001, and in 2003, almost equal with the FDI inflows (Kazgan, 2012: 253). When the FDI profit outflows is added to this picture, as seen in Figure

5, then it turns into a significant issue that should be paid attention to by the policy makers. Figure 5 indicates the upward trends of both FDI inflows and FDI profit outflows. Moreover, Figure 5 underlines that especially in 2009, in the year in which Turkey was experiencing the Global Crisis, while FDI inflows were dramatically decreasing, the FDI profit outflows were increasing.<sup>6</sup>

**Figure 5 FDI inflows and FDI profit outflows (in US\$ and in logarithmic transformation), 1990-2014**



Source: Author's Research; Central Bank of Turkey

### 3. A Brief Literature Review

Although in literature there have been large theoretical (Dunning, 1994; Milberg, 1999; Chudnovsky, Lopez, 1999) and empirical works on FDI and economic development/growth<sup>7</sup> (Balasubramanyam et al., 1996; Borensztein et al., 1998; Agosin, Mayer, 2000; Carkovic, Levine, 2005; Hermes, Lensink, 2003; Samimi et al., 2010 and Adeniyi et al., 2012, etc.), there are few works pointing out the potential detriments of the FDI inflows, including the profit outflows of FDI. The latter happens mostly by increasing CAD and leads to financial fragility and prone-to-crisis economy (Seabra, Flach, 2005; Mahnaz, Salma, 2013; Geyikdagi, Karaman, 2013; Akkermans, 2017). Among these, Seabra and Flach (2005) deal with the issue in terms of the Brazilian case using the Granger causality test developed by Toda and Yamamoto (1995) in order to investigate

the causal relationship between FDI and profit remittance, which finds out a unidirectional causality running from FDI to profit outflows. According to the empirical results of their paper, FDI causes profit remittance by pointing out the significant possible adverse long-term effects of the FDI attraction policies of Brazil. Mahnaz and Salma (2013) deal with the issue on the case of Pakistan using Autoregressive Distributed Lag (ARDL) approach in order to determine the long-term and short-term relationships between FDI inflows and income outflows, which are found to be co-integrated, pointing out a long-term relationship. According to the empirical results of their paper, FDI inflows in Pakistan have negative implications for current account balance as well as positive effects on growth and employment. Geyikdagi and Karaman (2013) deal with the issue in terms of the Turkish case by investigating FDI inflows to Turkey and trying to estimate

the transfer of profits. The results of their regression analysis using the annual data of 1995-2011 show that as the FDI stock remains positive, profit transfers are positive. Although they found a small impact on profit repatriation, they stress that this is due to transfer pricing manipulation of FDI, which should be paid attention to besides the M&As kind of FDI (Geyikdagi, Karaman, 2013). Different from other authors, Akkermans (2017) deals with the issue of 'repatriation of profits' in terms of the 'drain of wealth' aiming at describing and explaining 'net profit flows' per country for the period 1980-2009 through a panel data analysis. In this regard, the paper, in which a dataset on 'net profit flow' per country is calculated, investigates the 'net profit flow' as a consequence of foreign investment stocks for the period 1980-2009 for the three world-system groups, such as core, semi-periphery and periphery and finds that the net profit inflow grew for core countries, net profit outflow grew for the semi-periphery and in particular the periphery, concluding that "...neoliberalism served core countries and TNCs well. To be precise: it served capital owners in the core well; workers in those countries have not benefited at all..." (Akkermans, 2017).

It can be interpreted from the findings of the empirical studies on FDI and its spillovers<sup>8</sup> or growth that there is not such a rule that FDI will create the spillovers in every host country, although in theory, FDI is accepted to have important positive effects on the economy of the host country, such as *"1-promotes economic growth and development, 2-raises employment and wages, 3-generates technological spillovers that raise productivity, 4-provides export market access, 5-leads to improvement in the balance of payments"* (Milberg, 1999: 100). In this regard, it is criticised as the benefits of FDI depend on the conditions of the host developing countries and the Multinational Companies (MNCs) themselves and the characteristics of their investments. So such benefits are difficult to measure and also are not uniform. Moreover, when the positive impact of FDI inflows on the balance of payments are considered, it is underlined that the profit outflows of FDI can offset the positive impact or even transform it to the negative impact on the balance of payments in the long run.

In this regard, Willet et al. (2004) maintain that there are not just short-term effects, but FDI also can create volatility in capital movements, contrary to the expectations, as experienced in the Asian cri-

sis countries (Willet et al., 2004: 30). The crisis effect of the short-term capital inflows, the so-called hot money, as leading to CAD by appreciating local currency and creating virtual welfare increase were widely examined in the literature. Compared to them, FDI was accepted as more innocent and beneficial for the host country. However, FDI has recently started to be criticized in terms of its possible crisis effect through time inconsistencies of the transfers of its profits, which are from the host country to home country.

Lall (2000) underlines that if the government is not strong enough in both regulating and bargaining on FDI, then it will cause 'unequal distribution of benefits or abuse of market power' by MNCs (Lall, 2000: 8). Milberg (1999) contributes that by virtue of the development and high liberalization of financial markets of the developing economies, FDI can easily be hedged, which contributes to diminishing the difference between them and the portfolio investments more than ever before and so gives it the capability of creating financial crises by being unstable and volatile (Milberg, 1999: 101). Singh (2005) argues that to avoid the financial fragility, stemming from the 'unfettered FDI', which makes the economic structure prone to crises through CAD, the governments would need to monitor and regulate the amount and timing of FDI. He stresses that the aggregate foreign exchange inflows and outflows, both in the short and long run, which can stem from the large FDI projects, can create a 'time profile' of these outflows (in the form of dividend payments or profits transaction) and inflows, which could be time inconsistent. In this regard, he underlines that this time inconsistency can cause liquidity crises and even solvency crisis with worse consequences for economic development as seen in Asia (Singh, 2005: 9-10). In this regard, since restrictions of such outflows are not regarded as 'smart policies', rather than imposing restrictions, incentives that achieve the same result, but this time voluntarily, would be among 'smart policies'. As China<sup>9</sup> did, incentives towards reinvestment of FDI profits such as tax incentives by governments would be efficient in order to prevent the adverse effects of FDI inflows on profit remittance leading to CAD. Moreover, such incentives also divert the reinvestment to specific sectors, which are vital for development. OECD (2000) puts China case as follows: "...To encourage reinvestment of profits, China has been offering FDI a refund of 40 per cent of taxes

paid on its share of income, if the profit is reinvested in China for at least five years. Where profits are reinvested in high-technology or export-oriented enterprises, the foreign investor may receive a full refund..." (OECD, 2000: 15). Moreover, not restriction of profit outflows but managing the time of such outflows can be arranged by governments. But before it, the domestic residents, who think to make profit remittance, should inform the government in advance, e.g. two weeks before the arranged date of

such outflow for the amounts higher than, for instance, one million dollars.

#### 4. Data Set

A monthly data set, both in US\$ and in logarithmic transformation, including the era of 1991m12-2017m8 is used in the research. The data source is the Central Bank of Turkey. Table 3 indicates the symbols, definitions, units and scales of all variables used in the research.

Table 3 Explanations of the Variables

Symbols	Definitions	Units and Scale
lnFDIPO	NATURAL LOGARITHM OF FDI PROFIT OUTFLOWS	US Dollars Millions
lnFDIINF	NATURAL LOGARITHM OF FDI INFLOWS	US Dollars Millions

Source: Author's Research; Central Bank of Turkey

#### 5. The Economic Causality Between lnFDIPO and lnFDIINF for the Turkish Case

With regard to the Turkish case, the causal link between FDI profit outflows and FDI inflows is analyzed by Granger causality tests, using a method developed by Toda and Yamamoto (1995). This is designed to improve the standard F statistics in the causality test process after examining the unit root properties.

##### 5.1 Unit Root Tests: Testing Stationary

The VAR model covers the period of 1991m12-2017m08. In order to determine the maximum order of integration of each series, stationary tests of the variables have been conducted by the most common method, Augmented Dickey-Fuller unit root test (ADF), which was developed by Dickey and Fuller (1981). It is as follows:

$$\Delta Y_t = a + b_t + \gamma Y_{(t-1)} + c \Sigma \Delta Y_{(t-1)} + u_t$$

The basic model was as follows:

$$Y_t = pY_{(t-1)} + u_t \text{ or } y_t - y_{(t-1)} = (p-1) y_{(t-1)} + u_t \quad (u_t \text{ is the stochastic error term})$$

Namely;  $\Delta y_t = \gamma Y_{(t-1)} + u_t$

If  $(p-1) = 0$  or  $\gamma = 0$  then it can be concluded that  $y_t$  series has a unit root, namely, it is not stationary on its level.

To test the null hypothesis,  $y_t$  has a unit root, alternative versions of the model are used as follows:

Dickey-Fuller Equation without Intercept and Trend:

$$\Delta Y_t = \gamma Y_{(t-1)} + u_t$$

Dickey-Fuller Equation with Intercept but Without Trend:

$$\Delta Y_t = a + \gamma Y_{(t-1)} + u_t$$

Dickey-Fuller Equation with Intercept and Trend:

$$\Delta Y_t = a + b_t + \gamma Y_{(t-1)} + u_t$$

The obtained test results of the ADF, which is automatic based on the Akaike Information Criterion (AIC) in Table 4 are as below:



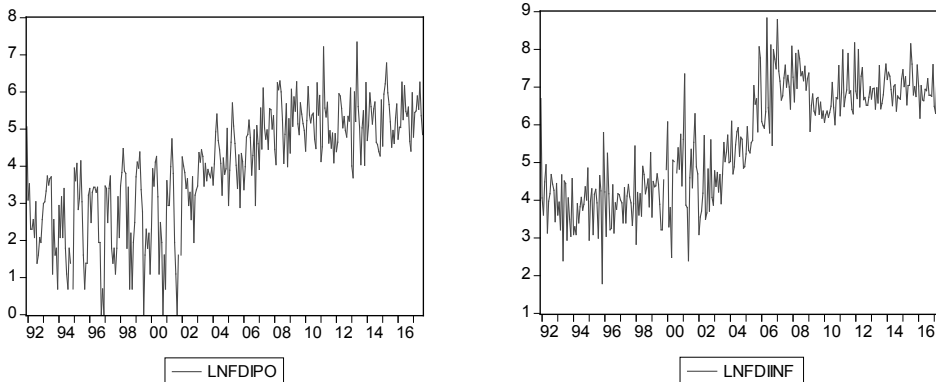
Table 4 The Results Table of the Unit Root Test Using the ADF Test

Variables	AIC/SIC	ADF Test Statistics		
		Without Intercept&Trend (None)	Without Trend (Constant)	Intercept With Trend (Constant, Linear Trend)
<i>Level</i>				
LNFDIINF	10/10/10	0.822029	-0.624781	-1.924770
LNFDIPO	12/12/11	0.920110	0.459670	-1.070362
<i>First Differential</i>				
$\Delta$ LNFDIINF	9/9/9	-7.491843 <sup>a</sup>	-7.555531 <sup>a</sup>	-7.543043 <sup>a</sup>
$\Delta$ LNFDIPO	11/11/11	-11.92833 <sup>a</sup>	-11.94879 <sup>a</sup>	-11.96229 <sup>a</sup>

The superscript a denotes significance at the 1% critical level. The lag orders are computed according to AIC. The series marked with (a) do not exhibit a unit root at 1% significance level.

Source: Author's research.

Figure 6 The Graphs of the Series



Source: Author's research

### 5.2 The Interpretation of the Results

According to the results in Table 4, it is concluded that LNFDIINF and LNFDIPO are not stationary on their levels, they are integrated of order one, namely,  $I(1)$ , for lag 9 and for lag 11, respectively. The stationarity of the series was also checked by the graphs of the series as seen in Figure 6. According to these graphs, all series seem unstationary, which can stem from the breaks in the crisis periods. These variables, which are integrated of order one, are used in the VAR model in order to have the maximal integration order as one<sup>10</sup>.

### 5.3 Test for Granger – Causality with Toda and Yamamoto Modified Wald Test

In the second step, the following augmented Granger causality test suggested by Toda and

Yamamoto (1995) is performed<sup>11</sup>. The application of the procedure leads to a point where the usual test statistics for Granger causality exhibit standard asymptotic distributions. A modified Wald test (MWald) for restrictions on the parameters of a VAR ( $k$ ), where  $k$  is the lag length in the system, is utilized by the procedure that was developed by Toda and Yamamoto (1995). When a VAR ( $k+d_{max}$ ) is predicted (where  $d_{max}$  is the maximal order of integration to occur in the system), this test displays asymptotic chi-square distribution. It is also shown that if variables are integrated of order  $d$ , the usual selection procedure is valid whenever  $k \geq d$ . The lag length order in the VAR model is determined as 12 according to the AIC criterion.

**Table 5 VAR Lag Order Selection Criteria**

VAR Lag Order Selection Criteria						
Endogenous variables: LNFDIPO LNFDIINF						
Exogenous variables: C						
Sample: 1991M12 2017M08						
Included observations: 247						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-803.4208	NA	2.330008	6.521626	6.550042	6.533066
1	-611.9165	378.3566	0.510493	5.003373	5.088621	5.037694
2	-574.2623	73.78405	0.388728	4.730869	4.872949	4.788071
3	-530.9641	84.14219	0.282788	4.412665	4.611577*	4.492749
4	-522.7198	15.88776	0.273244	4.378298	4.634043	4.481263*
5	-516.5024	11.88098	0.268396	4.360344	4.672921	4.486190
6	-514.7993	3.226989	0.273455	4.378942	4.748351	4.527669
7	-512.6047	4.122643	0.277511	4.393560	4.819802	4.565169
8	-511.2560	2.511836	0.283572	4.415028	4.898102	4.609517
9	-500.2466	20.32499	0.267972	4.358272	4.898178	4.575642
10	-494.8394	9.894939	0.264993	4.346878	4.943616	4.587129
11	-490.0015	8.774842	0.263269	4.340093	4.993663	4.603226
12	-477.6048	22.28391*	0.246040*	4.272104*	4.982506	4.558117
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Source: Author's research

The following VAR (k+dmax=13) model is estimated by OLS and SUR methods.

$$\ln FDIPO_t = \sum_{i=1}^{k+d} (\alpha_{1i} \ln FDIPO_{t-i}) + \sum_{i=1}^{k+d} (\beta_{1i} \ln FDIINF_{t-i}) + u_{1t} \quad (1)$$

$$\ln FDIINF_t = \sum_{i=1}^{k+d} (\alpha_{2i} \ln FDIINF_{t-i}) + \sum_{i=1}^{k+d} (\beta_{2i} \ln FDIPO_{t-i}) + u_{2t} \quad (2)$$

After determining that the most appropriate lag length as k=12 and dmax=1, the causal link between FDI Profit Outflows (lnFDIPO) and FDI Inflows (lnFDIINF) series based on p values for the modified Wald (MWald) statistics are presented in Table 6.

**Table 6 The Results Table of the Test for Granger – Causality with Toda and Yamamoto Modified Wald Test**

		VAR(13) k=12, d <sub>max</sub> =1			
		OLS		SUR	
The Null hypothesis		χ <sup>2</sup> Statistics	P-Value	χ <sup>2</sup> Statistics	P-Value
LNFDIPO	<b>does not Granger cause</b> LNFDIINF	15.65929	0.2073	17.57140	0.1293
LNFDIINF	<b>does not Granger cause</b> LNFDIPO	28.02340	0.0055 <sup>a</sup>	31.52826	0.0016 <sup>a</sup>

The superscript a denotes significance at the 1% critical level.

Source: Author's research

#### 5.4 The Interpretation of the Results

According to the estimation results, FDI Profit Outflows (lnFDIPO) and FDI Inflows (lnFDIINF) are causally related in the long-run, and the Granger causality is uni-directional running from FDI Inflows to FDI Profit Outflows in the Turkish Case. This finding is consistent with the Seabra and Flach (2005) findings about the Brazilian Case. As already noted, although there are short term positive effects of FDI inflows, the causality results point to the long term adverse effects of FDI inflows on profit remittance leading to CAD. In addition, previous FDI inflows are the driving force of current profit outflows.

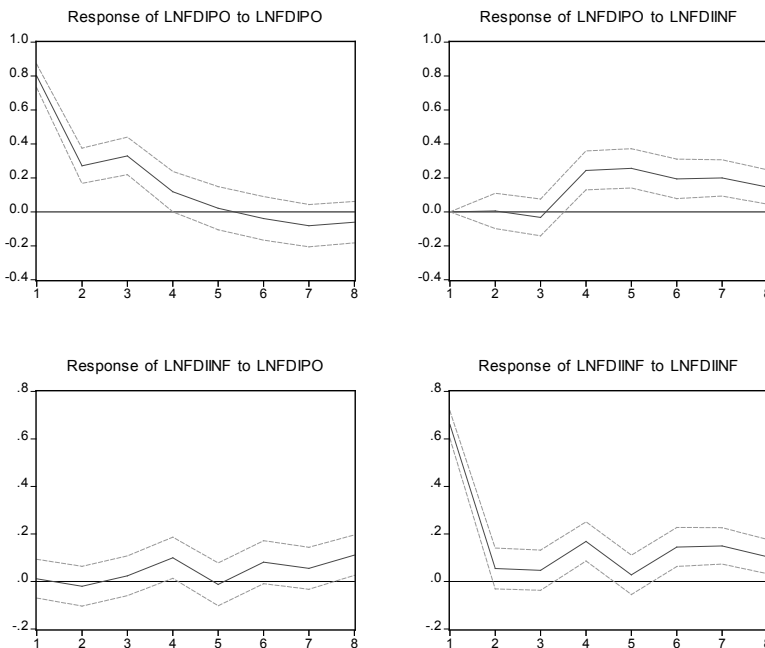
Figure 7 shows the impulse responses of the variables, namely, how two variables react to each other in the next 8 months. Considering the Impulse Responses of the profit outflows, namely, when there is

shock to FDI inflows, it can be seen that after three months profit outflows are always positive and growing. Since most of the FDI inflows to Turkey is in brownfield FDI formation (Sarialioglu Hayali, 2012), the three-month period for profit outflows makes sense and points to the fact which policy-makers should consider since the issue, the relationship of brownfield FDI with the profit outflows in a short time, is put by UNCTAD (2000) as follows:

“The impact of profit repatriation and transfer pricing on financial flows and the balance of payments of a host economy may differ according to the mode of entry. On the one hand, outflows of earnings are likely to begin sooner with M&As than with greenfield FDI when the acquired firm is profitable — though they may take longer where an affiliate has to be restructured” (UNCTAD, 2000: 146).

**Figure 7** Graphs of the Impulse Responses

Response to Cholesky One S.D. Innovations  $\pm$  2 S.E.



Source: Author's research

When it is looked at the Variance Decomposition of Profit Outflows shown in Table 6 it is seen that in the short run, an impulse (innovation/shock) to lnfdipo accounts for 93% of fluctuations in profit outflows as its own shock, while shock to lnfdiinf

accounts for 7% of fluctuations in profit outflows. However, in the relatively long run a shock to lnfdiinf can account for 20% of fluctuations in profit outflows.

**Table 6 Variance Decomposition of Profit Outflows**

Variance Decomposition of LNFDIPO:			
Period	S.E	LNFDIPO	LNFDIINF
1	0.800166	100.0000	0.000000
2	0.844968	99.99569	0.004307
3	0.907521	99.86504	0.134961
4	0.947165	93.23837	6.761629
5	0.981397	86.89533	13.10467
6	1.001175	83.64686	16.35314
7	1.024132	80.57270	19.42730
8	1.036298	79.03863	20.96137

Source: Author's research

## 6. Conclusions

Aggregate foreign exchange inflows and outflows, both in the short and long run, which can stem from the large FDI projects, may generate a 'time profile' of these outflows (in the form of dividend payments or profits transaction) and inflows, which could be time inconsistent. So, it is argued that to avoid such financial fragility stemming from the 'unfettered FDI', which makes the economic structure prone to crises through CAD, the governments would need to monitor and regulate the amount and timing of FDI, since this time inconstancy can cause liquidity crises and even solvency crisis. Although there are short-term positive effects of FDI inflows in terms of current account financing, the causality results of the paper with regard to the Turkish case, consistent with the existing applied works, point to the long-term adverse effects of FDI inflows on profit remittance leading to CAD, and thus possibly to crisis economy. Previous FDI inflows are the driving force of current profit outflows. Considering the Impulse Responses of the profit outflows, namely, when there is shock to FDI inflows, it can be seen that after three months, profit outflows are always positive and growing. Since most of the FDI inflows to Turkey is in brownfield FDI formation, the three-month period for profit outflows makes sense and points to the fact which policy-makers should take into consideration. When considering the policies for current account deficit, attention should be paid to the fact that large capital inflows have the potential to turn into large profit outflows. In this regard,

China's incentives towards reinvestment of FDI profits can be inspiring for the Turkish case.

It is argued that if developing countries want to attract the right kind of FDI, in the right amounts, and to maximize the benefits from FDI, they must have an effective state, i.e. government structures (Singh, 2005: 12). In other words, this can only be done by effective states that manage the process, namely, get full information about the intention of profit remittance in advance and make timetables for such profit remittance of foreign companies in order to prevent time overlaps. When making this time arrangement, using incentives should be on the agenda again in order to turn the unfavourable transfer time for such companies into favourable ones. Of course, at the very beginning, such kind of states should be in cooperation with such foreign companies. In this regard, thanks to such cooperation, before the profit remittance such foreign companies, themselves, would like to reinvest their profits. OECD (2000) exemplified this with China "Many foreign companies invested in China have adopted a strategic plan, which requires reinvestment of profits for growth and expansion" (OECD, 2000: 15).

Last but not least, in order to avoid the financial fragility, stemming from the 'unfettered FDI', which makes the economic structure prone to crises, the governments would need to monitor and regulate the amount and timing of FDI, not just 'hot money'.

## REFERENCES

1. Adeniyi, O., Omisakin, O., Egwaikhide, F., Oyinlola, A. (2012), "Foreign Direct Investment, Economic Growth and Financial Sector Development in Small Open Developing Economies", *Economic Analysis & Policy*, Vol. 42, No. 1, pp. 105-127.
2. Agosin, M. R., Ricardo, M. (2000), "Foreign Investment in Developing Countries: Does It Crowd in Domestic Investment", UNCTAD Discussion Paper No. 146, United Nations Conference on Trade and Development, Geneva, February 2000.
3. Akkermans, D. H. M. (2017), "Net Profit Flow per Country from 1980 to 2009: The Long-Term Effects of Foreign Direct Investment", *PLOS ONE*, Vol. 12, No. 6, pp. e0179244.
4. Akpolat, A. G., Inancli, S. (2011), "Does Foreign Direct Investment Matter?: The Case of Turkey?", *International Research Journal of Finance and Economics*, No. 7, pp. 56-66.
5. Balasubramanyam, V. N., Salisu, M., Sapsford, D. (1996), "Foreign Direct Investment and Growth in EP and IS Countries", *The Economic Journal*, Vol. 106, No. 434, pp. 92-105.
6. Borensztein, E., Lee, J. D., Gregorio, J.-W. (1998), "How Does Foreign Direct Investment Affect Economic Growth", *Journal of International Economics*, Vol. 45, No. 1, pp. 115-135.
7. Carkovic, M. V., Levine, R. (2005), "Does Foreign Direct Investment Accelerate Economic Growth", in Moran, T. H. et al. (Eds.), *Does Foreign Direct Investment Promote Development*, Institute for International Economics and Centre for Global Development, Washington DC, pp. 195-220.
8. Chudnovsky, D., Lopez, A. (1999), "Globalisation and Developing Countries: Foreign Direct Investment and Growth and Sustainable Human Development", Occasional Paper, UNCTAD/UNDP Global Programme on Globalization, Liberalization and Sustainable Human Development, Geneva, March 1999.
9. Dickey, D. A., Fuller, W. A. (1981), "Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root", *Econometrica*, Vol. 49, No. 4, pp. 1057-1072.
10. Dodd, R. (2002), "Derivatives, the Shape of International Capital Flows and the Virtues of Prudential Regulation", United Nations University WIDER Discussion Paper No. 2002/93.
11. Dunning, J. (1994), "Re-Evaluating the Benefits of Foreign Direct Investment", *Transnational Corporations*, Vol. 3, No. 1, pp. 23-52.
12. Eichengreen, B., Fishlow A. (1998), "Contending with Capital Flows: What is Different about the 1990s?", in Kahler, M. (Ed.), *Capital Flows and Financial Crises*, Manchester University Press, Manchester, pp. 23-68.
13. Geyikdagi, N. V., Karaman, F. (2013), "Foreign Direct Investment and Profit Transfers: The Turkish Case", *Journal of Balkan and Near Eastern Studies*, Vol. 15, No. 4, pp. 383-395.
14. Hermes, N., Lensink, R. (2003), "Foreign Direct Investment, Financial Development and Economic Growth", *The Journal of Development Studies*, Vol. 40, No. 1, pp. 142-163.
15. International Monetary Fund (1998), *International Capital Markets: Developments, Prospects, and Key Policy Issues*, Washington, DC: International Monetary Fund.
16. Kazgan, G. (2012). *Turkiye Ekonomisinde Krizler (1929-2009)*. Istanbul: Istanbul Bilgi University Publications.
17. Lall, S. (2000), "FDI and Development: Research Issues in the Emerging Context", Policy Discussion Paper No. 0020, University of Adelaide, Centre for International Economic Studies, Adelaide, April 2000.
18. Mahnaz, M. A., Salma, S. (2013), "Impact of Foreign Direct Investment Inflows on Income Outflows: A Case Study of Pakistan", *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 5, No. 1, pp. 131-141.
19. Milberg, W. (1999), "Foreign Direct Investment and Development: Balancing Costs and Benefits", *International Monetary and Financial Issues for the 1990s*, Vol. 11, pp. 99-116.

20. OECD, "Main Determinants and Impact of Foreign Direct Investment on China's Economy", Working Papers 2000/04.
21. Onis, Z. (2011), "Power, Interests and Coalitions: The Political Economy of Mass Privatisation in Turkey", *Third World Quarterly*, Vol. 32, No. 4, pp. 707-724.
22. Perraton, J., Goldblatt, D., Held, D., McGrew, A. (1997), "The Globalization of Economic Activity", *New Political Economy*, Vol. 2, No. 2, pp. 257-277.
23. Samimi, A., Rezanejad, J. Z., Ariani, F. (2010), "Growth and FDI in OIC Countries", *Australian Journal of Basic and Applied Sciences*, Vol. 4, No. 10, pp. 4883-4885.
24. Sarialioglu Hayali, A. (2012), "A Comparative Analysis of FDI in Terms of "Quantity" and "Quality": Turkish Case", *Ege Academic Review/Ege Akademik Bakis*, Vol. 12, No. 3, pp. 285-300.
25. Seabra, F., Flach, L. (2005), "Foreign Direct Investment and Profit Outflows: A Causality Analysis for the Brazilian Economy", *Economics Bulletin*, Vol. 6, No. 1, pp. 1-15.
26. Schmukler, S. L., Zoido-Lobaton, P. (2001), "Financial Globalization: Opportunities and Challenges for Developing Countries", in *Globalization Policy Research Report*, World Bank, Washington, DC.
27. Singh, A. (2005), "FDI, Globalisation and Economic Development: Towards Reforming National and International Rules of the Game", Working Paper No. 304, ESRC Centre for Business Research, University of Cambridge, Cambridge, March 2005.
28. Toda, H. Y., Yamamoto, T. (1995), "Statistical Inference in Vector Autoregressions with Possibly Integrated Processes", *Journal of Econometrics*, Vol. 66, No. 1-2, pp. 225-250.
29. UNCTAD (2000). *World Investment Report 2000: Cross-border Mergers and Acquisitions and Development*. New York and Geneva: United Nations.
30. Willet, T. D., Budiman, A., Denzau, A., Jo, G., Ramos, C., Thomas, J. (2004), "The Falsification of Four Popular Hypotheses about the Asian Crisis", *The World Economy*, Vol. 27, No. 1, pp. 25-44.

## ENDNOTES

- 1 Petro-dollars were deposited to such lender banks in the developed countries by OPEC, and were recycled by such banks by having underwritten syndicated bank loans to the developing countries, which needed new capital inflows to be able to pay for oil imports (Dodd, 2002: 3).
- 2 UNCTAD (2009), "World Investment Report".
- 3 See the Turkish Republic Prime Ministry Undersecretariat of Treasury (1998) for Foreign Capital Legislation, which started to be gradually liberalized in the 1980s.
- 4 Hisarcikilar, M., Gultekin-Karakas, D., Asici, A.A. (2010) "Can FDI Be A Panacea For Unemployment?: The Turkish Case", available at: <http://www.esam.itu.edu.tr/NottinghamWorkshopPapers/Hisarcikilar-Karakas-Asici-NW.pdf> (Accessed on: January 2, 2012).
- 5 One of the indicators of the 'quality' of FDI is the 'mode of entry' into the host country (greenfield vs. brownfield investments), in order to have direct positive impact on economic development through investment, namely, increasing gross fixed capital formation. In this regard, it is maintained that when the FDI is realised by acquisition of existing assets in the host country and/or merger, it is called 'brownfield investment'. It does not create the required addition to the capital stock, output or employment if they only lead to a change of ownership without adding to productive capacity or productivity, especially compared to the 'greenfield investment'. Greenfield investment leads to a net addition to the host country's capital stock. Moreover, in brownfield investment, when there is no entirely new productive capacity, the technology spillover can also be seen as relevant (Milberg, 1999: 107). According to London

- Economics (2010), its impact on economic growth through increasing capital stock is problematic, it can be less certain and less accepted than the impact of greenfield investment, at least in the short-run (London Economics, 2010: 23).
- 6 When the monthly data is considered, it becomes clearer that in some months, for instance 1993m5, 1994m5, 1995m1, 1996m5, 1997m5, 1998m5, 2001m5, monthly FDI profit outflows exceeded the monthly FDI inflows.
  - 7 Hermes and Lensink (2003) argue that, in addition to the direct increase of capital formation of the host country, FDI also can help increasing growth by introducing new technologies, managerial skills, ideas, and new varieties of capital goods (Hermes and Lensink, 2003: 143). All these can create spillovers.
  - 8 The term '*spillover*' is defined as '*the beneficial effects of inward FDI are contagious in host countries, both within and across countries*' by Milberg (1999: 109). In theory, spillovers can be created by 'demonstration and/or imitation', which means new products or technologies of multinational companies (MNCs) are imitated by local firms. It can be by 'competition', which means local firms get under pressure to adopt new technologies after the entrance of MNCs to the markets. It can be by 'linkages', which means transactions between MNCs and local firms. It can also occur by 'training', which means that local firms invest in their human capital through developing the skills and knowledge of their employees to make them adapt to the new technologies that MNCs developed (Hermes and Lensink, 2003: 143). According to Chudnovsky and Lopez (1999), technology spillovers can be gained by developing countries from MNCs in four ways: "*through FDI; through joint ventures between domestic firms and MNCs (including what has been termed 'strategic partnerships');* by purchasing technology in contractual form (patents, licensing, turnkey contracts, etc.); and through reverse engineering, imitation, copying, etc. (in this case, without the consent of MNCs)" (Chudnovsky, Lopez, 1999: 7).
  - 9 OECD (2000) comments China's tax incentives as follows: "Tax incentives, which are among the most outstanding investment promotion policies, were also made available for FDI. From 1980 to 1993, China used extensively a wide range of tax incentives, including income tax exemption and reduction, tariff-free for imported equipment and construction materials. Although in 1994 the unified taxation system applying both domestic and FDI firms was introduced, a five-year tax refund scheme was granted for FDI firms, and tariff-free treatment was extended. In addition, preferential treatments were granted in some specific sectors and industries. Currently, the targeted economic sectors and industries in which FDI is encouraged include agriculture, resource exploitation, infrastructure, export-oriented and high-technology industries" (OECD, 2000: 15).
  - 10 Before the causality test, the Johansen test of cointegration is conducted since both series were found to be integrated of order one. Both the trace statistic and maximal eigenvalue statistic indicated that there is cointegration between variables by rejecting the null hypothesis of no cointegrating vector ( $r=0$ ) at the 1% significance level, whereas the null hypothesis of at most one cointegrating vector ( $r\leq 0$ ) cannot be rejected. So, the results support the hypothesis of cointegration between profit outflows and FDI inflows.
  - 11 If the data are integrated or cointegrated, the usual tests applied for exact linear restrictions on the parameters (e.g. the Wald test) do not exhibit usual asymptotic distributions. In order to handle this aspect, and not to get into the pre-testing distortions associated with prior tests for non-stationarity and cointegration, the procedure proposed by Toda and Yamamoto (1995) is chosen.

Ayca Sarialioglu Hayali

## ODNOS IZRAVNIH STRANIH ULAGANJA I TEKUĆEG RAČUNA PLATNE BILANCE: SLUČAJ TURSKE

### SAŽETAK

Zemlje u razvoju pokušavaju na sve načine privući izravna strana ulaganja kako bi ubrzale svoj razvoj, a ponekad ne postavljaju gotovo nikakve uvjete. Međutim, u literaturi se izražava zabrinutost zbog „neome-tanih izravnih stranih ulaganja” s obzirom na nekoliko čimbenika. Jedan od njih je odljev dobiti, čime se povećava deficit tekućeg računa platne bilance. U radu se analizira odnos izravnih stranih ulaganja i odljeva dobiti na primjeru Turske putem analize ekonomske uzročnosti, odnosno Grengеровim testom kauzalnosti uz upotrebu metode koju su razvili Toda i Yamamoto (1995) i analize impulsnog odgovora. Iako prema rezultatima izravna strana ulaganja imaju kratkoročan pozitivan učinak na financiranje tekućeg računa, rezultati kauzalnosti ukazuju na to da izravna strana ulaganja imaju dugoročne negativne posljedice na tokove dobiti i uzrokuju deficit tekućeg računa platne bilance, a na to bi donositelji odluka trebali obratiti posebnu pozornost.

**Ključne riječi:** izravna strana ulaganja, odljev dobiti, slučaj Turske