

THE RELATIONSHIP BETWEEN FOREIGN INVESTMENT AND MACROECONOMIC INDICATORS: EVIDENCE FROM TURKEY

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Abstract

Foreign investment flows, comprised of direct and portfolio investments, generally indicate an upward trend in developing countries. During 1980s, developing countries have eased the restrictions on foreign investment, since it is the major source of external finance for those countries. Although there is a controversy on the effects of foreign investment, most of the studies indicate that foreign investment generates positive effects on host countries. Turkey is one of the leading emerging economies, which receives considerable amount of foreign investment flows. Turkish policy makers make substantial efforts to attract foreign investment. Those efforts include streamlining investments, transferring funds to home countries, and offering special tax incentives to foreign investors. Studies on this issue generally focus on the determinants of foreign investment. Another point is that most of the studies analyze only one type of foreign investment, either direct or portfolio. Contrary to the existing literature, this study deals with both types of investments. The study aims at analyzing the relationship between foreign investment and major economic and financial indicators in Turkish economy. Namely, those indicators are current account deficit, real exchange rate, nominal interest rate and stock exchange index. To examine these relationships, the period of 2003-2013 has been surveyed by using Granger causality analysis. The results signify that bi-directional relationship exists between the foreign direct investment and the rates of real exchange and interest. On the other hand, the foreign portfolio investment has bi-directional relationship with Borsa Istanbul Index. Further, Borsa Istanbul Index is the Granger cause of the foreign direct investment, while the rates of real exchange and interest are Granger causes of the foreign portfolio investment. Finally, the current account deficit is the Granger cause of both types of the foreign investments.

Keywords: Foreign investment, macroeconomic indicators, Turkey

Introduction

There has been a rapid growth in cross border capital flows since 1980s, with the enhancement of financial globalization. Capital flows are considered as a financial source and many emerging economies try to attract foreign capital to stimulate domestic output. Net inflows to some countries and regions, such as Asia Pasific, Latin America, the Transition Economies of Eastern Europe and Turkey, have grown considerably.

Foreign capital flows appear in two ways, as direct investment and portfolio investment. Direct investments are foreign funds injected into domestic production, such as building new plants, installing new production lines, forming joint ventures, and etc. Potential positive effects generated by foreign direct investment (such as technology transfer, human capital formation, creating a more competitive business environment) lead countries to create an investment climate that is more attractive to investors, and contribute to the economic growth and economic development. Direct investment has longer term effects on the economy, it is not simply transfer of capital. It involves in technology transfer, new marketing practices or management techniques. All these aspects involve a relationship on a long time horizon and their mobility is limited, being more stable???(Bird and Rajan 2002: 2).

Portfolio investment refers to mainly short term foreign investment in domestic stocks and corporate bonds. Foreign portfolio inflows are expected to finance the difference between domestic savings and investment, without increasing the foreign currency debt of the country. Portfolio flows are considered as ‘hot capital’ and move from one country to another with searching the highest returns and better market conditions. Portfolio investment is expected to be more volatile and mobile than direct investment.

The portfolio investment in equity may not always lead to an increase in real investment, since the purchase of shares takes place in the secondary market rather than in the primary market. Capital market transactions increased, but at the same time it has offered speculative opportunities in the secondary market. Such speculative flows are inherently volatile. Any reversal of portfolio investment may have big impact on the domestic capital market through the bond and share prices. Hence, speculative flows affect all segments of financial markets—the securities market, the foreign exchange market, the money market and the credit market—since systemic risk transmits from one market to another instantly and may lead to output and employment losses (Srikanth, Kishore, 2012)

Larger capital inflows increase the fragility of the financial system and the risk of abrupt reversals in capital inflows. The country with large capital inflow will face a loss in competitive power of the country. Domestic currency will appreciate and besides the loss of competitiveness and

speculative attacks on the currency may appear. Decrease in export and increase in import lead to trade and current account deficits. Continuous current account deficit requires the policy makers to follow a high interest rate policy to attract foreign capital.

As an emerging market, especially in recent decade, Turkey is attracting foreign capital, and mainly foreign portfolio investment. In Turkey, until 1986, there was only some foreign direct investment. After 1986, with financial liberalization, foreign portfolio investment has started to inflow. Istanbul Stock Exchange Market has begun to operate and cross border financial flows have appeared.

It is expected that Turkish economy may be vulnerable to risks in the medium term. The current account deficit is 7% of the GNP. That rate is too high and the country requires large capital inflows. Turkish economy would be severely affected from any withdrawal of foreign investments. The main problem in Turkey is that the export volume is too low and the import level is too high. Trade and current account deficits have increasing trends. Although Turkey has achieved higher growth rates during recent years, the sustainability of those high growth rates with higher current account deficits is questionable.

In short, large capital inflows to an emerging market may not always create favourable effects: such as closing the gap between saving and investment, and stimulating high growth rates. All effects should be considered in detail. Positive and negative effects on the capital and money markets, foreign exchange market and real market should be examined.

There are vast majority of literature on the relations of capital flows and growth, the determinants of capital flows and the effects of capital flows on stock markets. The purpose of this paper is to contribute further to the empirical literature on the effects of foreign capital inflows into Turkey by measuring the effects of foreign capital on some macroeconomic variables: such as current account, foreign exchange rate, interest rate, stock index. A detailed examination of all these variables requires a close analysis of foreign exchange market, money and capital markets and balance of payments.

This study has considerable contributions to the literature: The study analyzes the effects of two different types of foreign investments on the Turkish economy. It explores the effects of both types of foreign investments on stock market, money and capital markets, as well as on foreign exchange market and balance of payments.

The paper has four sections: the first section mentions the major studies analyzing the effect of foreign investment on host country, the second section gives details about data and methodology, the third section discusses the results and the last section concludes.

Literature Review

There are some arguments on the pros and cons of international capital mobility. As stated Alfaro, Ozcan, Volosovych (2006) Stanley Fisher, Maurice Obstfeld, Kenneth Rogoff and Larry Summers agree that capital mobility increases economic growth and welfare around the world. Conversely, Paul Krugman, Dani Rodrik, Jagdish Bhagwati are among skeptics of international financial integration. They discuss the risk of financial integration.

In the traditional explanation of capital movements, the Heckscher-Ohlin explanation was based on interest rate differences. Also Mundell (1963) and Fleming (1962) suggested that an increase in domestic interest rates relative to the foreign (world) interest rates would cause an inflow of capital to the home country.

Schadler et al (1993) stated that, in a small open economy with a fixed exchange rate system, a large increase in capital would result in overheating economy and economic instability. The first sign of trouble would be an increase in current account deficit. The greater availability of external financing usually leads to higher imports which in turn lead to higher current account deficits.

Agarwal (1997) examined the determinants of foreign portfolio investment and its impact on the national economy in six developing Asian countries. Regression results showed that inflation rate, real exchange rate, index of economic activity and the share of domestic capital market in the world stock market capitalisation were four statistically significant determinants of foreign portfolio investment.

Froot, O'Connell and Seasholes (2001) found that international capital flows "predict" price changes and, lead changes in the prices of securities. Roy (2007) explored the basic motives behind foreign portfolio capital flows into India. He found that they were primarily driven by capital gains, and in the Indian case, by the change in stock prices. The study further revealed that stock prices were causing net foreign portfolio inflows and not vice-versa. He found bi-directional causality between the exchange rate and net foreign portfolio inflows.

Hau and Rey (2006) developed an equilibrium model in which exchange rates, stock prices, and capital flows were jointly determined under incomplete foreign exchange risk trading. They found that equity flows have become increasingly important over time and correlate strongly with exchange rates for 17 OECD countries vis-à-vis the United States, suggesting that the exchange rate dynamics were indeed related to equity market development.

Brooks et al. (2004) incorporated both portfolio and foreign direct investment flows to track movements in the euro/dollar and the yen/dollar

exchange rates. They argued that the low explanatory power of traditional variables, such as long-term interest rate differential, inflation differential, and relative current account positions, calls for refocusing of the existing exchange rate model to take into account various capital flows variables. According to them, various kinds of capital flows, such as debt flows, portfolio flows, and direct investment flows, were driven by different forces, hence, they would have different influences on exchange rates.

There are a couple of studies dealing with the capital flows to Turkey. Some of them examined economic growth, capital markets and foreign debt and financial liberalization in Turkey (Akyuz, Boratav, 2002). Uygur (2001) investigated the impacts of foreign investment and financial crises, Donmez and et.all (2004) analysed ISE 30 index and foreign investors return, while Simsek (1995) discussed the relationship between domestic savings and foreign capital, and Demir (2004) studied economic crises, capital outflow and foreign debt.

Gazioglu (2003) examined the relation between capital flow and 2001 Economic crises in Turkey. In this study, empirical results showed that unexpected capital outflow caused to exchange rate fluctuation, balance of payments problems and international debt crises, also hot money inflows boost stock prices, and kept real effective exchange rate high.

Data And Methodology

This paper investigates the relationship between foreign investment and macroeconomic indicators in Turkey. Foreign direct investment and foreign portfolio investment are the variables referring foreign investment. As macroeconomic variables; current account deficit, , Borsa Istanbul -100 Index, and interest rate are taken into consideration. The analysis period covers from 2003:01 to 2013:1. Monthly data of all variables have been collected from Central Bank of the Republic of Turkey.

The figures of the variables are given below (Figure 1-to-5). As it is seen in the Figure 1 Turkey has a continuous current account deficit problem and it has negative balance in all analyzed months except that few months at the end of years 2003 and 2004 which are called as recovery period after 2000 and 2001 twin crises. March 2011 is the month where the current account deficit reaches highest value with 9.5 billion \$, it is followed by April 2013 and May 2011.

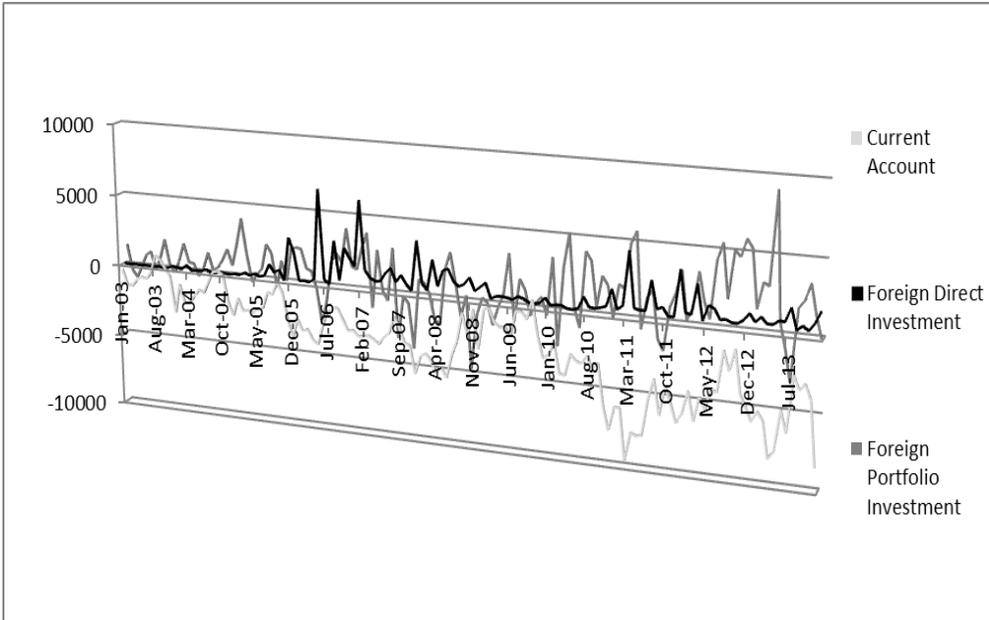


Figure 1. Current Account, Foreign Direct Investment, Foreign Portfolio Investment (mil. \$)

Foreign portfolio investment, almost for the whole period, outstands foreign direct investment. Foreign direct investment has been higher in years when there has been privatization of state enterprises. Foreign investment data exhibits net investment position: foreign direct investments generally have had positive values showing that inward direct investments have been greater than outward direct investments. Foreign portfolio investments generally have had positive values, but they also have had negative values, especially during 2008 global financial crisis. Peak values of direct and portfolio investments have been recorded in the years of 2006 and 2013 respectively.

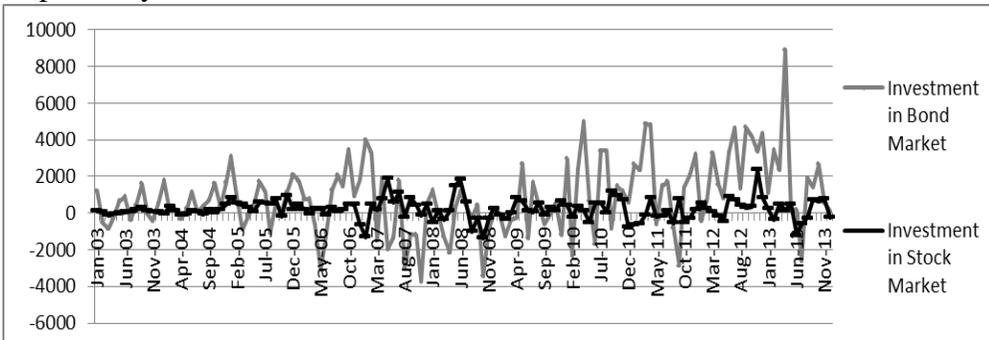


Figure 2. Analysis of Foreign Portfolio Investment: Bond and Stock Investment (mil. \$)

Portfolio investment in bond market is generally greater than investment in stock market, and it is valid both when foreigners are net

purchasers or sellers (negative values of investment in bond market are also higher than negative values of investment in stock market). It is obvious that both types of foreign investments have volatile structures due to the ups and downs seen every month. Data shows net investment position of foreigners, thus negative values are recorded. Although net position of foreigners in stock market is very close to zero, net investment position in bond market is high. Turkish Monetary authority had to follow high interest rate policy to finance current account deficit. The result is seen in the Figure 2, with high portfolio investment in bond market.

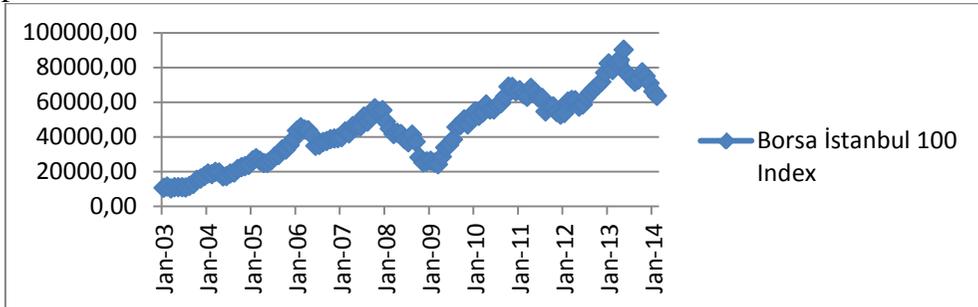


Figure 3. Borsa İstanbul 100 Index

Although the stock market had some breaks during domestic and global economic and financial turmoils (especially in years 2008 and 2009), it had an upward trend and its value reached 80,000. Due to the 2008 global financial crisis, it lost approximately 40,000 points and dropped to the value which is equal to the value in the year 2005. Other sharp decreases were in 2011 and 2013.

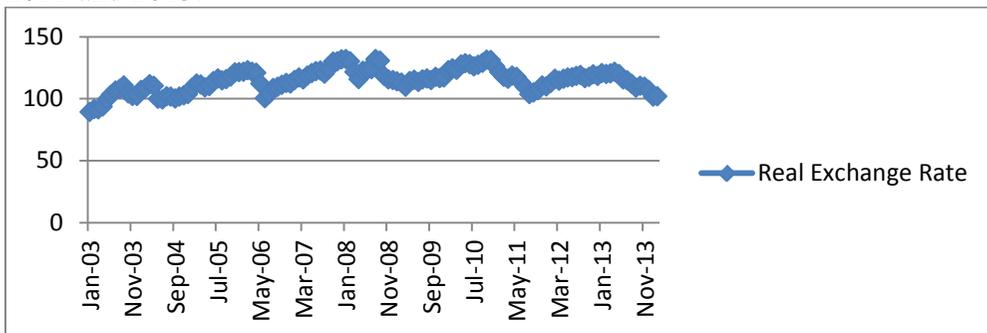


Figure 4. Real Exchange Rate

Real exchange rate is higher than base value 100. This shows that TL is overvalued in the period except mid-2003 where the value is lower than 100. The highest values are seen in years 2007 and 2008.

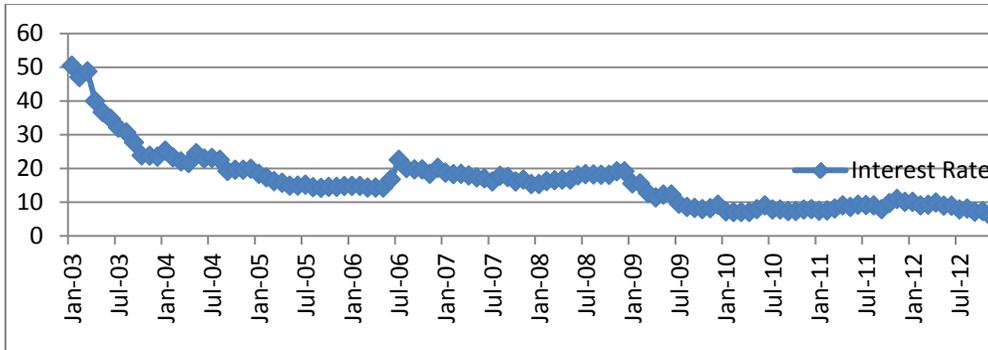


Figure 5. Interest Rate

Interest rates in Turkey have followed a downward trend during the last ten years due to drop in inflation rate and applied ‘low interest rate policy’. Turkey was an interest heaven before this period and was offering one of the highest return to foreign investors in the world. Although Turkey has faced with continuous current account deficit and has tried to finance by capital inflows the government have had a dilemma. On one side to attract foreign capital was required, on the other hand to achieve price stability was important. The Central Bank decided to follow a strict strategy to decrease the interest rates which might have affected the foreign investment in bond market. But the data interprets that foreign bond investment have not decreased during this period, even it has increased. Although there is decrease in interest rate in Turkey also after 2008 crises, interest rates in all over the world have displayed a noteworthy decrease. That current situation has still kept Turkey as an attractive country for bond investment.

Results

In the study, Granger causality test is employed. X is Granger cause of Y if forecast of Y is more significant while past values of X have been used, than past values of X have not been used (Granger, 1969). $X \rightarrow Y$ refers that X is Granger cause of Y.

Model with two variables is shown below, where A,B,C, and D are the parameters while L is the lag indicator:

$$X_t = A(L)X_t + B(L)Y_t + u_{1t}$$

$$Y_t = C(L)X_t + D(L)Y_t + u_{2t}$$

The model is used to test the presence and the direction of causality among foreign direct investment and foreign portfolio investment and main economic variables.

In Granger causality test, the series that belong to variables should be stationary. Therefore unit root test is made to examine whether series are stationary or not. Unit root of time series used in the study is tested with

Augmented Dickey-Fuller (ADF). First difference of the series which has unit root is taken and the series become stationary. Unit root test results are shown in Table 1. According to the results, all series are stationary except real exchange rate and Borsa Istanbul Index. The first difference of the series containing unit root is used in the analysis.

Table 1. Unit Root Tests: ADF

Variables	Level/First Difference
Foreign Direct Investment (FDI)	-2.654*(L)
Foreign Portfolio Investment (FPI)	-8.422***(L)
Current Account Deficit (CA)	-4.827***(L)
Real Exchange Rate (FX)	-6.782***(FD)
Interest Rate (INT)	-5.309***(L)
Borsa Istanbul Index (BIST-100)	-10.173***(FD)

The study reveals that there are unidirectional or bidirectional relations with FDI and FPI with some macro economic variables. As test results are shown in Table 2; although all analysed variables are Granger causes of foreign direct investment and foreign portfolio investment, also foreign direct investment have bi-directional relations with foreign exchange rate and interest rates. Foreign portfolio investment has bi-directional relations with Borsa Istanbul Index. Current account deficit, real exchange rate and nominal interest rates are Granger causes of portfolio investment.

Table 2. Granger Causality Tests

Foreign Direct Investment		Foreign Portfolio Investment	
Analysed Relationship	F		
FDI → BIST	0.417	FPI → BIST	6.598**
BIST → FDI	4.102**	BIST → FPI	4.562**
FDI → CA	0.962	FPI → CA	0.969
CA → FDI	2.465*	CA → FPI	2.290*
FDI → FX	2.492*	FPI → FX	0.563
FX → FDI	2.560*	FX → FPI	2.449**
FDI → INT	6.063***	FPI → INT	0.826
INT → FDI	5.519***	INT → FPI	4.348**

Note: *, ** and *** refers 10%, 5%, and 1% significance respectively.

A detailed analysis of the results for foreign direct investment indicates that since increasing trend in financial markets creates safety in investment environment, stock market index affects foreign direct investment. If there is current account deficit, the government gives incentives to foreign investors in order to stimulate foreign currency inflow for financing current account deficit. Thus current account deficit affects foreign direct investment. There is bi-directional relationship between foreign direct investment and real exchange rate, while foreign direct capital inflows to the country, supply of currency increases, the value of host country's currency increases as well; when the value of host country's currency increases, the

foreign investor perceives it as a positive signal and makes more investment to the country. Also foreign direct investment and interest rate have bi-directional relations, because if foreign investors finance the investment from host country's money markets, it affects the interest rates.

The results for foreign portfolio investment show that there is bi-directional relationship between foreign portfolio investment and stock market index. The reason of this relationship is that an increase in index attracts more foreign investors and an increase in foreign portfolio investment affects stock market index. Since high real exchange rate, which is the indicator of more valuable host country currency provides more return when foreign investors convert their investment into home country's currency, it causes two-sided relationship between foreign portfolio investment and real exchange rate. High interest rates in host country attract more foreign investors and it causes more foreign portfolio investment. Similar to the relationship between current account deficit and foreign direct investment, governments implement policies in order to attract more foreign portfolio investors to finance current account deficit.

The results of study are comparable to the findings of previous studies. Agarwal (1997) finds relation with foreign portfolio investment and real exchange rate. In this study foreign direct investment causes an increase in real exchange, but portfolio investment does not. But real exchange rate is Granger causes of both type of foreign investment, Froot and et all (2001) concludes that stock prices are causing portfolio inflow, and that is consistent with the study findings. Also they find bi-directional relations with exchange rate and portfolio investment, we find that relation for direct investment and exchange rate. As Schadler et all (1993), stated that an increase in capital flows leads to an increase in imports and results in high current account deficit, in this study our result reveals that, current account deficit is Granger causes of foreign direct investment and foreign portfolio investment.

Conclusion

The aim of the study is to investigate relationship between foreign investment and some macroeconomic variables. In the study, foreign investments are examined in two different forms. Instead of considering total foreign capital flow, net foreign direct investment and net foreign portfolio are analyzed. Also economic variables are chosen carefully. As an emerging market, Turkey is struggling with high current account deficit, overvalued exchange rate, high interest rate and volatile borsa index.

This study examines the relationship between two types of foreign investment and current account deficit, real exchange rate, nominal interest rate, and stock exchange index for the period between 2003 and 2013 with Granger causality analysis by using monthly data. This study is one of the

limited studies analyzing foreign investment from a different perspective and contributing to the literature by testing the effects of two different types of foreign investment and covering the effects and bilateral relations with stock market, money market, foreign exchange market and balance of payments.

The results which are consistent with the previous studies demonstrate that current account deficit, Borsa Istanbul Index, real exchange rate and nominal interest rate are Granger causes of foreign direct investment and foreign portfolio investment, and affect these two types of foreign investment. On the other hand, foreign direct investment affects real exchange rate and nominal interest rate, and foreign portfolio investment affects stock market.

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