

Causal Relationship Between Foreign Direct Investment And Capital Flight: A Case Study of Bangladesh

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Abstract

The fundamental aim of this study is to investigate the relationship between Foreign Direct Investment (FDI) and Capital Flight (KF) of Bangladesh. To obtain the objective, this paper has conducted statistical analyses and examined time series data over a period of Forty one years from 1973 to 2014. Unit root test and Granger causality test were exercised to measure the relationship between independent variable (FDI) and dependent variable (KF). The results found in this paper signify a positive correlation between FDI and Capital Flight and may be a concern and significant for the government of Bangladesh. The government might focus on required reforms and policy implications to make foreign investment more beneficial.

Keywords: FDI, Capital Flight, Unit Root Test, Causality Test.

1. Introduction

FDI definition will be followed in accordance with the United Nations (UN) conference on Trade and Development (UNCTAD) and its World Investment Report 2006, which states that

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“FDI is an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate)”. The Bangladesh Board of Investment (2004) maintains the same definition. FDI consists of three core parts: Equity Capital, Reinvested Earnings, and Intra-company Loans. Equity Capital, as the name suggests, refers to ownership and a foreign investor’s purchase of shares of an enterprise that is in a country other than his own. Reinvested earnings refer to the investor’s share of earnings that are not distributed back to him, i.e. profits that are not given out as dividends but are kept within the firm (or any of its affiliates) as retained earnings. Intra-company loans involve debt transactions in the form of short and long-term lending by the foreign parent company to its affiliates.

On the other hand, Capital flight is stated by Pande and Mithani as 'a situation where capital seeks investment outside the country; a phenomenon generally observed in most developing countries for a variety of reasons, i.e., uncertainty associated with new national philosophies, nationalization of industries, repatriation restrictions, lack of incentives, policies tending to restrict profit levels, high level of taxation etc.'

According to Mcleod, 'the classic use of the term is to describe widespread currency speculation, especially when it leads to cross border movement of private funds that are large enough to affect national financial markets. The distinction between 'flight' and normal capital outflows is thus a matter of degree, much like the difference between a 'bank run' and normal withdrawals. FDI inflows to Bangladesh have increased dramatically in recent years and have positive effect on Capital Flight.

2. Objective of the Study

Specifically, the main objective of this study is to find out the causal linkage between FDI and Capital Flight of Bangladesh along with to investigate the mechanisms of capital flight, that is, the different ways through which money is siphoned off and to focus on the required reforms and policy implications of the government.

3. Literature Review

FDI provides capital from sources abroad which the country is unable to supply domestically. In a country like Bangladesh, where the economy is driven by high volume imports, a huge capital account deficit accumulates as foreign exchange flows out. Sattar (1999) opines FDI is a fundamental and necessary component for long-term sustainable growth in Bangladesh. But the investor countries like Japan, China, USA, UK, South Korea, France, Russia etc. turn back most of their profits legally or illegally.

Illegal capital flight or outflow is one of the threads to our economy which is the characteristics of a hidden economy. The various aspects and extents of hidden economy of Bangladesh have been analyzed and examined by Reza (1989), Barakat (1991), Hasan (1997) and Asaduzzaman (1998). These researchers estimated the size of the hidden economy at about 20% to 23% of GDP. These studies identified smuggling, under- and over-invoicing, and hundi business as major sectors, and suppression of gross receipts, and pseudonymous business as common methods for generating tax evaded income. They also identified pseudonymous financial investment as the most important form in which hidden wealth is held.

Transparency International (TI), a Berlin-based leading non-governmental organization (NGO) is fighting against corruption worldwide. According to TI's perception, corruption is dangerously high in poor parts of the world, and in many countries whose firms invest in developing nations. Its chairman Peter Eiger observes that corrupt political elites in the developing world working hand-in-hand with greedy business people and unscrupulous investors promote private gains at the cost of the citizen's welfare and economic development of their countries.ⁱ It is envisaged in a study that 'holding other things constant, if Bangladesh were able to reduce its corruption level to those of the least corrupt countries in the world (i.e., Canada, Denmark, Finland, Iceland, Netherlands and Sweden) its annual average per capita growth rate during 1990-97 could have increased by between 2.12 and 2.88 percentage points. This would imply a per capita GNP level of between US \$ 592 and \$ 690 in 1997 compared to its actual per capita GNP of US \$ 352.ⁱⁱ

Financial structure and policies play a key role for saving and investment decisions and thus economic growth. This is the channel through which a country's most profitable and efficient projects are systematically and continuously funded. Therefore, the extent of control of the government through the Ministry of Finance over the banks, the extent of supervision and monitoring by the Bangladesh Bank over the nationalized commercial banks, and their relationships and interactions are important for the generation of hidden economy along with formal economy. The illegal transfer of foreign remittance through banking channels encourages investment in export and import, which facilitate tax evasion. Banking laws usually provide the opportunity not to disclose the identity of the depositors. The tax holiday, issuance of Bearer's Certificate of Deposit (BCD), other saving instruments, and write-offs of un-recovered loans are directly related to the hidden economy. On the other hand, if the depositor does not consider a bank reliable, then this money may be invested in an informal sector.

Capital flight is indeed a serious problem for developing countries, which warrants substantial policy intervention. For a developing country like Bangladesh, the issue of capital flight is

very sensitive due to the vulnerability of the financial sectors, including the stock market, as this country is at close proximity to a big neighbor like India.

The exchange restrictions in the capital account, because of which capital cannot be transferred or remitted freely through official channels from Bangladesh, smugglers and unauthorized persons use many channels through which capital flight takes place from the country. These are: under-invoicing of exports, over-invoicing of imports, smuggling business, retaining of the indenting commission in the overseas countries, use of hundi method to transfer money from one place to another, remitting money through the normal banking channels for fake payments, taking assistance of non-bank financial institutions where supervision and regulation are shaky, and abrupt use of electronic channel through off-shore financial centers where regulation is almost non-existent.

An attempt has been made here to estimate capital flight from Bangladesh during 1992-93 to 2006-07 extending the table constructed by Alam and others. Our estimation found a mixed picture of capital flight from Bangladesh during this period. The extent of capital flight from Bangladesh mostly remains the same. Evidently, large capital flight took place in FY94, FY96, FY98, FY00, FY01, FY02, FY06 and FY07 to the amount of \$1060 million, \$1823 million, \$1220 million, \$1146 million, \$1679 million, \$1431.6 million, \$891 million, and \$1328 million (World Bank, Erbe), \$1060.4 million, \$1850.8 million, \$1221.4 million, \$1149.9 million, \$1589.4 million, \$1023.6 million, \$553 million, and \$165 million (Morgan Guaranty) and \$1139.1 million, \$1781.9 million, \$1138.1 million, \$11256.3 million, \$11490.6 million, \$776.6 million, \$2367 million, and \$ 450 million (Cline), respectively. It may be concluded, therefore, that the extent of capital flight from Bangladesh is quite significant given the fact that Bangladesh suffers from different types of instability, including the overvalued currency and capital account constraints.

For understandable reasons, two particular types of countries can be mentioned, to which this sort of illegal capital movement takes place. One is the countries where the Bangladeshi migrant workers are large and the other is Bangladesh's major trading partner countries. Bangladesh has a large migrant population in KSA, UAE, Oman, Malaysia, Singapore, UK, and USA. And it has trade relations with European Countries, ASEAN countries, and SAARC countries, especially India. So, the main destination of capital flight from Bangladesh would be these countries.

4. Data Sources and Methodology

The data set is based on secondary data and drawn from different sources comprise time series data of Bangladesh period of 1973-2014. The data sources include annual reports of different government institutions, concerned ministries and concerned corporate offices, research journals, investment surveys conducted by BOI, statistical year book of Bangladesh.

Data series on External Debt is taken from World Bank's International Debt Statistics. Net Foreign Direct Investment & Official Foreign Reserve series are taken from International Developing Country Studies Monetary Fund (IMF)'s Balance of Payment Database and International Financial Statistics (IFS). Current Account Balance series is from Dept. of Statistics, Bangladesh Bank.

The econometric analysis in this study is two-fold: a) Test for stationary of the series used in the econometric model & checking multicollinearity b) Test of the existence of static long-run equilibrium relationship between FDI and Capital flight.

Yearly data series for the period 1973 to 2014 have been used. The data have been compiled from various issues of Economic Trends published by Bangladesh Bank. To avoid a spurious regression situation the variables used in a regression model must be stationary. Unit root tests are being applied on these four variables to examine whether they are stationary or not. If the data series are not cointegrated then we apply Granger Causality Test.

4.1 Econometric Methodology

Step1. The Unit Root test

Macroeconomic time series data are generally characterized by a stochastic trend which can be removed by differencing. Some variables are stationary on levels, others become stationary after First difference, and some may become stationary by more than First difference. To test for the stationary of the variables, the Augmented Dickey-Fuller (ADF) technique was utilized.

It is assumed that the series has a unit root; hence failure to reject the null hypothesis implied the time series is non-stationary. If a time series is non-stationary but becomes stationary after first differencing, then it is said to be integrated of the order one i.e. $I(1)$. When the variables are found to have the same order of integration, then cointegration test is used to identify the number of cointegrating vectors and cointegrating equation among the variables. But if any variable doesn't have the same order of integration, it has not been incorporated in this investigation.

Step 2. Johansen's Cointegration Test

Johansen's Cointegration methodology has been applied to identify the long run equilibrium relationship among the variables under study. In this case, after identifying the optimum lag length based on Schwarz Information Criterion (Schwarz, 1978), the level data has been used directly into the cointegration test as it is not required to make the series into stationary data. At first, a trace statistic has been used to test the null hypothesis of r cointegrating vectors against the alternative of r or more cointegrating vectors. Another important test to identify

the number of cointegrating vectors is testing the statistical significance of max eigen value statistics.

Step 3. Granger Causality Test

According to the representation theorem, if two variables are cointegrated then Granger Causality must exist in at least one direction. Granger Causality is a statistical hypothesis test for determining whether or not one variable is useful to forecast another. According to Granger Causality, if a variable (x) Granger causes variable (y), then past values of variable (x) should contain information that helps to predict variable (y). Granger test assumes that appropriate information for the relevant variables and includes testing the following equations:

$$KF_t = \sum_{i=1}^n \alpha_i FDI_{t-i} + \sum_{j=1}^n \beta_j KF_{t-j} + \mu_{1t} \dots\dots\dots (i)$$

$$FDI_t = \sum_{i=1}^n \gamma_i FDI_{t-i} + \sum_{j=1}^n \delta_j KF_{t-j} + \mu_{2t} \dots\dots\dots (ii)$$

Pairwise Granger Causality Tests			
Sample: 1973- 2014			
Lags: 2		Table -1	
Null Hypothesis:	Obs	F-Statistic	Prob.
D(KF) does not Granger Cause INF	36	0.20523	0.8156
INF does not Granger Cause D(KF)		0.10378	0.9017
LOGPCGDP does not Granger Cause INF	37	1.78072	0.1848
INF does not Granger Cause LOGPCGDP		3.41756	0.0452
FDI does not Granger Cause INF	37	0.35231	0.7058
INF does not Granger Cause FDI		0.00659	0.9934
POPG does not Granger Cause INF	37	9.55408	0.0006
INF does not Granger Cause POPG		0.88374	0.4231
LOGPCGDP does not Granger Cause D(KF)	36	1.53221	0.2320
D(KF) does not Granger Cause LOGPCGDP		0.50119	0.6106
FDI does not Granger Cause D(KF)	36	10.5862	0.0003
D(KF) does not Granger Cause DI		4.78002	0.0155
POPG does not Granger Cause D(KF)	36	1.13461	0.3345
D(KF) does not Granger Cause POPG		0.20743	0.8138
FDI does not Granger Cause LOGPCGDP	37	0.19128	0.8268
LOGPCGDP does not Granger Cause FDI		3.03691	0.0620

From the above table we see that there is a Bi-directional relationship between foreign direct investment and capital flight.

Step 4: Breusch-Pagan-Godfrey Test:

If all observations come from probability density functions with the different variances, we say that heteroskedasticity exists, and y and e are heteroskedastic. To test the presence of heteroskedasticity the well-known method is BPG test.

Step 5: The Breusch-Godfrey (BG) Test:

To avoid some of the Durbin-Watson d test of autocorrelation, statistician Breusch and Godfrey have developed a test of autocorrelation that is general in the sense that it allows for (1) nonstochastic regressors, such as the lagged values of the regressand; (2) higher-order autoregressive scheme, such as AR (1), AR (2) etc. and (3) simple or higher-order moving averages of white noise error terms. It is also known as the LM test.

Step 6: Correlation matrix:

Multicollinearity refers to the situation where there is either an exact or approximately exact relationship among the regressors. The well-known method of detecting multicollinearity is correlation matrix.

Table-2

	D(KF)	INF	LOGPCGDP	POPG	FDI
D(KF)	1.000000	0.009111	-0.194589	0.143871	-0.289455
INF	0.009111	1.000000	-0.056861	0.217331	-0.022146
LOGPCGDP	-0.194589	-0.056861	1.000000	-0.956630	0.923435
POPG	0.143871	0.217331	-0.956630	1.000000	-0.839573
FDI	-0.289455	-0.022146	0.923435	-0.839573	1.000000

Table – 2 displays the correlation among FDI, KF, and Inflation and Population growth. This Correlation Matrix measures the two-way relation between the mentioned variables.

From table-2, we observe that there is low correlation between variables pair wise. There is a positive correlation among FDI, inflation, GDP growth and capital flight. The degree of correlation is relatively low.

5. Summary of Descriptive Statistics

Appendix-2 exhibits the descriptive statistics for the selected variables under the study. We have examined 41 yearly observations of all the variables to estimate the following statistics.

From Appendix-2, we observe that the average value of $\ln gdp$ is higher than $\ln ms3$ and $\ln price$. Here, Std. Dev. measures the dispersion or spread of the series. The maximum and minimum statistics measure the upper and lower bounds of the variable under study. The skewness measures whether the distribution of all the data is symmetrical or asymmetrical. Here, negative skewness value of the variables indicates that the data series have a left tail and positive skewness value of the variables indicates that the data series have a right tail. Overall, calculations indicate that all the variables are not normally distributed.

5.1 Test of stationary

Appendix-1 displays the estimates of the Augmented Dickey-Fuller (ADF) test in levels and in first differences of the data with an intercept. The tests have been performed using the Mackinnon Critical Values (Mackinnon, 1996) and assumed the identical null hypothesis of unit root in the data series. The lag length was determined using Akaike Information Criterion (AIC) (Akaike, 1974). The results indicate that all the variables are not stationary in their levels. On the other hand, all data are stationary at their first differences at 1%, 5% and 10% level of significance and therefore indicating that all variables are integrated of order 1. i.e., $I(1)$.

6. Conclusion

The main purpose of this study is to investigate the lead and lag relationship between the FDI and KF in Bangladesh. Theoretically, Foreign Direct Investment should have relationship with the Capital Flight and various empirical studies support this view. In the context of Bangladesh, this paper appears to be present instantaneous causality between Foreign Direct Investment and selected Capital Flight and there is an upward correlation between Foreign Direct Investment and Capital Flight. That is the direction of relationship is bi-directional.

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