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Growth faltering capital flight: Empirical evidence from Turkey

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Abstract

Capital flight from Turkey throughout the last few decades is one of the major policy concerns for the development prospects of the economy. Several studies address the issue of capital flight from Turkey, but there is no significant study that examines its impact on the economic growth of the economy. The study investigates the effect of capital flight from Turkey on its economic growth during 1981-2019. It measures the extent of capital flight from Turkey adopting the World Bank's residual method and examines its growth effect in a setting of Barro's growth model. The study employs the Johansen cointegration approach to determine whether there exists an association between flight capital and the output growth of Turkey in the long run. The study results support the view that the flight of capital from Turkey deteriorates the country's output growth in the long run. It implies that the government should adopt policies to reduce capital flight, increase domestic investment, and stimulate economic growth.

Keywords Capital flight, Economic growth, Johansen cointegration, Residual method, Turkey

Paper type Research paper

1. Introduction

It is widely accepted that capital mobility is important to promote growth through stimulating domestic investment (Sinn, 1992). It also helps improve resource allocation both domestically and globally (Yalta, 2006) and promotes financial development (Bailliu, 2000). Therefore, emerging economies should give more importance to enticing capital flows from developed economies in order to stimulate their macroeconomic performance. However, in contrast to that, capital flight, particularly, fleeing domestic capital from the capital scarce developing and emerging economies to the capital haven developed economies, is a critical concern for many of the developing economies as it tones down the growth performance of the economies reducing domestic investment and deteriorating their financing problems (Epstein, 2005). Capital flight is often resulting from

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discriminatory treatment to domestic capital that could occur for a variety of reasons like inappropriate taxation, real interest rate differentials, and weak exchange rate policy. Capital is responsive to the change in the tax structure. An increase in tax on income from domestic capital usually leads capital to fly towards low tax destinations. Again, countries offering a higher rate of interest in real terms are often able to draw the attention of investors from countries where the interest rate is low.

Flight of Capital is a common phenomenon in most developing economies. Examining the bilateral trade relationships of 135 developing economies with 36 advanced economies, Global Financial Integrity (2020) recently reports that illicit financial flows from developing economies were nearly US$8.7 trillion over the period 2008-2017. The cumulative value gaps in trade between 135 emerging economies and 36 developed economies in this period reached US$817.6 billion in 2017.

Capital flight from Turkey is a long-standing problem. If the trade-related illicit financial flows are taken into account alone, Turkey belongs to the top ten economies having the largest value gaps in bilateral trade with 36 developed countries during 2008-2017 (Global Financial Integrity, 2020). In terms of trade mis invoicing, the average capital flight from turkey during the period was US$41,199 million, nearly 50 percent of which flees to advanced economies amounting to US$22,052 million. The mean share of flight capital in total trade was nearly 21 and 17 percent with all trading partners and advanced economies, respectively during the period under interest.

The study measures capital flight using the Residual Method and finds strong evidence of capital flight from Turkey all over the period of the study. As table I demonstrates, the average capital flight was significantly higher than Foreign Direct Investment (FDI) and even expressively more than the Official Development Assistance (ODA)as a percent of Gross Domestic Product (GDP) over the last four decades. However, its dampening effect on domestic investment by constraining domestic saving is one of the major concerns for achieving the desired level of output growth. Capital flight accounts for about 16 percent of domestic savings during the sample period.

Table I: Extent of capital flight from Turkey

Period	Capital flight (Million USD)	GDP (Million USD)	Capital flight (% of GDP)	Net FDI (% of GDP)	ODA (% of GDP)	Capital flight (% of Saving)
1980s	12078.11	277320.81	4.36	0.20	0.51	14.43
1990s	14156.30	430799.74	3.29	0.36	0.29	17.10
2000s	22912.28	624816.39	3.67	1.43	0.11	16.96
2010s	35219.09	1046615.78	3.37	1.13	0.30	15.52

Source: Author's calculation

As a highly indebted economy, Turkey depends on capital flows to finance this debt. The chronic deficit in the current account of Turkey makes it a sharp reality that the country has gradually become heavily dependent on borrowing from external sources. The external debt of Turkey is rising over the years and reaches over 57% of GDP in 2019. Following the financial liberalization in the early 1990s, the performance of the Turkish economy has become more dependent on capital inflows (Koska, 2005; Akcay & Güngen, 2019). Under such a setting, funds fleeing from Turkey are working as a barrier in achieving the expected development targets. Hence, as a capital-scarce country, the degree of flight of capital and its impact on the real economy of Turkey needs to be evaluated. There are few studies on the magnitude of flight of capital from Turkey (e. g., Yalta, 2006; Demirgil, 2011; Özer, 2013), but no significant study has been found investigating the growth effect of flight capital on Turkey. This research is an attempt to bridge this gap.

The rest of the study is organized as follows: Following the introduction, section two reviews the literature on the impact of capital flight on the economic growth of developing economies. The data sources and methodology adopted for the study are described in section three. The study summarizes the results in section four before the conclusion.

2. Literature review

The literature on the impact of capital flight on the macroeconomic performance of developing economies is extensively large. However, from the survey of Turkey capital Flight literature, it is revealed that no significant contribution to the growth effect of capital flight has been made so far. Most of the early studies are limited to the determinants and extent of capital flight from Turkey. The study identifies a substantial level of capital flight from Turkey throughout the sample period and therefore its growth effect is worth investigating.

To examine the impact of capital flight on the output growth of Turkey, the study consults with available literature to give it an ideal framework. Studies on the capital flight can broadly be classified into two: time-series and panel studies. Some recent time-series studies include Beja (2007), Bakare (2011), Ajayi (2012), Umoru (2013), Lawal, Kazi, Adeoti, Osuma, Akinmulegun, and Ilo (2017), Zobeiri, Akbarpour Roshan, and Shahrazi (2015), Ogbonnaya and Ogechuckwu (2017) and Ameh and Amadi (2019). Among the panel studies, recent contributions of Cervena (2006), Gusarova (2009), Ndiaye (2014), and Ndikumana (2014) are well acclaimed.

Beja (2007) based on counterfactual calculations in the Philippines for the period from 1970 to 2000, suggests that economic growth was lower in the long-term subject to capital flight. The author identified a three-decades-long sustained capital flight that played a crucial role in limiting the opportunities for the Philippines in achieving economic take-off. Examining the factors influencing capital flight, Bakare (2011) shows how it impacts the output growth of Nigeria during 1988-2010 adopting the vector autoregressive model (VAR). The study finds corruption and external debt as the key factors that cause capital to fly from Nigeria and the result indicates that capital flight limits the macroeconomic performance of Nigeria. Ajayi (2012) investigates the influence of flight of capital for the period of 1970-2009 on the Nigerian economy employing the cointegration and Vector Error Correction Mechanism (VECM) and identifies that growth of the Nigerian economy is adversely affected due to flight of capital. Umoru (2013) also agrees with Ajayi (2012) as he reports an unfavourable impact of flight capital on the growth rate of GDP while he examines the growth effect of capital flight for Nigeria during 1980-2010. Zobeiri, Akbarpour Roshan, and Shahrazi (2015) measure the magnitude of capital flees from Iran employing World Bank's residual method during the period 1981-2012 and investigates how it affects the Iranian economic growth employing the ARDL approach. Results of the study reveal that the Iranian economic growth toned down owing to the illegal outflow of capital. Wujung and Mbella (2016) investigate the nexus between capital flight-economic development in Cameroon applying the Fully Modified Least Squares (FMOLS) technique. They find evidence that the flight of capital from Cameroon exerts an adverse impact on the country's economic development during the period 1970-2013. Applying the Autoregressive Distributed Lag (ARDL) model, Lawal, Kazi, Adeoti, Osuma, Akinmulegun, and Ilo (2017) study whether capital flight has a hand in determining the output growth of Nigeria for the period 1981-2015. They adopt the residual method offered by World Bank to derive the capital flight series and confirm that it deters Nigerian economic growth. Concerning Turkey, Yalta (2006) offers an estimate of capital flight from Turkey for the period 1970-2001 applying residual methods after necessary modifications and finds 7 to 12 percent share of capital flight in GDP which is fairly higher than the inflows of foreign direct investment to Turkey throughout the investigation. Later, she examines the influence of capital flight on domestic investment using the error correction method and finds a deleterious impact of flight capital on gross domestic investment which implies an adverse effect on potential output level. The recent studies of Ogbonnaya and

Ogechuckwu (2017) and Ameh and Amadi (2019) use the Johansen Cointegration approach to examine the long run relationship between capital flight and output growth of Nigeria. Both of the studies draw the conclusion that the growth of Nigeria is significantly hindered by capital flight.

Cervena (2006) estimates the extent of capital flight for a group of 75 emerging economies and examines the responsiveness of economic growth to flight of capital employing feasible generalized least squares method in the Solow-Swan growth model framework. The study identifies those countries having greater capital flight share in GDP experienced sluggish growth of per capita GDP. Gusarova (2009) investigates the effect of flight of capital on the performance of 139 economies using data for the period 2002-2006 in a panel setting. The study adopts the estimates proposed by Kar and Spanjers (2014) available in the Global Financial Integrity report to estimate the capital flight from these economies. Kar and Spanjers (2014) consider several estimates of illegal financial flows, namely trade mis invoicing, the hot money and World Bank residual method. The growth determinants the study considers include capital flight, previous period GDP, rate of inflation, gross capital formation, change in terms of trade, life expectancy, population growth, economic freedom index, and index of political rights. The study identifies an indirect impact of flight capital on the growth of these economies. Ndiaye (2014) in his study examines the growth response of the Franc Zone economies towards capital flight using the generalized method of moments (GMM) approach. The study considers data from 15 Franc Zone economies between 1970 and 2010 relying on capital flight data obtained by residual method. The study result shows a negative effect of capital flight on the growth of real output which is statistically significant and concludes that capital flight notably checks the output growth of economies in the Franc Zone. Ndikumana (2014) in a study of the possible additional increase in real output in Africa from investing flight capital during 2000-2010 using simulation technique. The study finds that each of the African economies covered by the study would achieve a greater economic growth during the period of the investigation if the capital flight could be checked and hence draws the conclusion that capital flight works as a dominant factor of the deficiency of investment capital in the continent. Gautier and Luc (2020) recently examine the impact of flight capital on the growth performance of the Southern African Development Community (SADC), Economic Community of West African States (ECOWAS), and Economic Community of Central African States (ECCAS) for the period of 1984-2015 using the pooled mean groups (PMG) regression. Results of their

study demonstrate an adverse and statistically significant impact of capital flight on the performance of growth of the SADC economies. However, they identify that the growth effect of flight capital in ECCAS and ECOWAS economies depends on the interaction between private investment and capital flight.

In light of the above, the foregone opportunities due to the flight of capital are many. In particular, capital flight from an economy deepens the problem of capital scarcity. If the flight capital could be invested in the domestic economy, the economy could achieve a higher level of output growth. Hence, capital flight undoubtedly works as an impediment in achieving the desired growth target. Despite the significant amount of capital flight from Turkey during the last few decades, its impact on output growth was left unfocused. The study is an attempt to address this gap.

3. Methodology and data sources

The study progresses in two steps. To begin with, it identifies the capital flight series and then examines its growth effect for Turkey.

Alternative methods of measuring capital flight include Cuddington's hot money approach, the residual method offered by the World Bank and the errors and omissions approach. In Cuddington's hot money method, which is the narrow measure of flight of capital, the sum of the nonbank sector's recorded short-term capital exports is regarded as a measure of capital flight. The errors and omissions approach mainly reflects unrecorded short-term capital flows (Cuddington, 1986). Loungani and Mauro (2001) propose several alternative ways of measuring capital flight using this approach that include Hot Money Measure 1 (HMM1) and Hot Money Measure 2 (HMM2).

Summing up net errors and omissions, non-portfolio investment assets and liabilities held by entities other than the monetary authorities, general governments, and banks and net flows of non-FDI, one can appear at capital flight figures in the HMM1. HMM2 includes non-portfolio investment assets and liabilities held by banks along with the components of HMM1. The errors and omissions approach offered by Gutierrez and Calafell (1988) focuses on the errors and omissions of Cuddington's 'hot money' approach with some amendments: interest attributed on external assets that remain overseas is deducted, thus increasing the current account deficit and shrinking the measure of flight capital; the public sector's and commercial banks' accumulated assets are not regarded as flight capital and thus should be deducted, and transactions in gold and silver and valuation gains on

official reserves (including SDRs) are netted out of official reserves. Another way that can be adopted to get capital flight data is the 'residual method', also known as 'broad measure' of capital flight, proposed by World Development Report 1985 of World Bank and Erbe (1985), Schneider (2003). The residual method views capital flight as the residual from sources of capital inflows, that is, an increase in external debt and net foreign direct investment, used to finance current account deficit and increase in international reserves. Thus, following the residual method;

$$\text{Capital flight, CF} = \Delta ED + NFDI - CAD - \Delta FR \quad (1)$$

where ΔED stands for change in external debt, ΔFR stands for change in international reserve, NFDI for net foreign direct investment and CAD for the deficit in the current account.

The study uses the residual method in measuring capital flight as it is supported by a number of studies. Vespignani (2008) considers it as the most widely prevalent measure of capital flight since it captures not only capital flight, but other influences as well incorporating the overall effect of outflow of capital, both recorded and unrecorded, without distinguishing short or long run. Eggerstedt, Hall, & Wijnbergen (1995) argues in favor of the residual approach, which assumes that capital inflows in the form of increases in foreign investment and external indebtedness should finance either the current account or reserve accumulation; shortfalls in reported use can be attributed to capital flight. To measure capital flight employing the residual method, the study relies on data from World Bank (2020).

The growth model to examine the impact of flight of capital on the output growth of the Turkish economy is developed following the Barro and Lee (1994) growth model which is as follows:

$$lnY_t = a_0 + a_1 I_t + a_2 G_t + a_3 FDI_t + a_4 lnTOT_t + a_5 lnHC_t + a_6 lnCF_t + u_t \quad (2)$$

Here, GDP is denoted by Y, I stands for domestic investment, G refers to government final consumption expenditure, FDI for foreign direct investment, TOT refers to terms of trade, HC stands human capital measured in terms of average years of total schooling and CF for capital flight obtained using the residual method. Investment is an addition to the physical stock of capital which increases the productive capacity of an economy and hence it is expected that a higher level of investment spending will stimulate economic growth due to which the coefficient of I positive, that is, $a_1 > 0$. In the same notion, net FDI that moves from capital abundant country to the capital scarce country enhances economic growth by reducing the cost of capital and capital constraint, that is, $a_3 > 0$. Human capital

development refers to the increase in knowledge and skills of domestic residents which can contribute to greater output growth, meaning that $a_5 > 0$. The potential impact of the increase in government final consumption expenditure can either be positive or negative. An increase in government expenditure leaves lower funds for the public as well as for the private sector to invest and thereby hinders economic growth. Therefore, $a_2 > 0$. capital flight from an economy indisputably works as an impediment in reaching the desired growth target by intensifying capital crisis particularly for developing countries like Turkey. Hence, the capital flight is expected to bear a negative coefficient, that is, $a_6 > 0$. On the other hand, the impact of TOT change on output growth is uncertain. Being the relative price of exportable of the domestic economy, an improvement in TOT will hurt the growth of an economy if it improves the demand for goods produced abroad than home, otherwise not. Hence, ($a_4 = 0$).

The study collects data from the Penn World Table 9.0 (PWT 9.0), United Nations Conference on Trade and Development (UNCTAD), the Bank for International Settlements (BIS), World Development Indicators (WDI) of World Bank (WB), and International Financial Statistics (IFS) of International Monetary Fund (IMF). Human capital data is available in the database offered by Barro-Lee on educational attainment. The period of the study ranges from 1981 to 2019. All variables are in the real form where 2010 is taken as the base year. Variables are measured in million US dollars. Domestic investment, government spending, and foreign direct investment are measured as a percent of GDP. Some summary statistics of the variables are presented in table C in the appendix to explain the nature of the data. As the table displays, for the variables measured in million USD, the mean value of GDP is highest with a greater deviation. On the other hand, FDI has the lowest mean with the least deviation. GDP, investment spending, government expenditure, FDI, TOT and human capital have more lower values than their respective mean values as their distribution is found to be platykurtic. Again, all the variables are positively skewed except human capital and capital flight.

In order to decide on the estimation procedure of the long run model 2, the study first examines the stationarity of the variables using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) Tests. Three possible forms of augmented version of ADF test are as follows:

$$\Delta y_t = \lambda y_{t-1} + \sum_{i=1}^{n} \beta i \, \Delta y_{t-i} + u_t$$

$$\Delta y_t = \alpha_0 + \lambda y_{t-1} + \sum_{i=1}^{n} \beta i \, \Delta y_{t-i} + u_t$$

$$\Delta y_t = \alpha_0 + \alpha_{1t} + \lambda y_{t-1} + \sum_{i=1}^{n} \beta i \, \Delta y_{t-i} + u_t$$

These three forms represent no trend-no intercept, no trend-with intercept and with trend and intercept models, respectively. Lags are determined based on Akaike Information Criteria (AIC) and the null hypothesis of non-stationary (λ=0) is rejected if the ADF t-statistics exceed the critical values computed by Dickey-Fuller (1979, 1981) and tabulated by Mackinnon (1991). We need to conduct both ADF and PP tests to make a more robust decision about stationarity The suggested model for PP test is:

$$y_t = \rho \, y_{t-1} + u_t$$

or

$$\Delta \, y_t = \lambda y_{t-1} + u_t \qquad \text{where, } \lambda = \rho\text{-}1$$

The asymptotic distribution of PP t statistic is the same as the ADF t statistic and therefore Mackinnon's (1991) critical values can be used in rejecting the null hypothesis of non-stationary (ρ =1) time series.

Johansen cointegration test and investigation of long-term cointegrating relationship require all the series to be stationary at first difference. Johansen's methodology rests on estimating the rank of Π for the Johansen and Juselius (1990) Vector Error Correction (VEC) Specification (Johansen & Juselius, 1990). There are two test statistic for cointegration under the Johansen approach-

1. Trace Statistic: $\lambda_{trace} = -T \sum_{i=r+1}^{n} 1 - \hat{\lambda}_i$ r= 0, 1,….., n-2, n-1
2. Maximum Likelihood Statistic: $\lambda_{max}(r, r+1) = -T \ln(1 - \hat{\lambda}_{r+1})$, r= 0, 1,.., n-2, n-1

Where 'r' is the number of cointegrating vectors under the null hypothesis.

If the test statistic is greater than the critical value provided by Johansen and Juselies (1990), the null hypothesis that there are r cointegrating vectors in favor of the alternative that there are r+1 (λtrace) or more than r (for λmax) will be rejected. Once the long run cointegrating relationship is determined,

one can proceed with the estimation of the long run cointegrating equation. For more than one long run cointegrating equation, preference is given to the equation for which the coefficients carry desirable signs, error correction term enters with a negative significant coefficient to confirm causality from regressors to the dependent variable and all the necessary diagnostic checks are passed.

4. Results and discussions

Test results of the ADF and PP tests to check the stationarity or unit-roots of the time series variables are summarized in the appendix in table A. As the test results indicate, national output level (Y), domestic investment (I), government expenditure (G), foreign direct investment (FDI), terms of trade (TOT) and capital flight (CF) are found to be non-stationary at level with 'intercept' and 'trend and intercept' specification. However, all these variables become stationary with these specifications at first difference. Human capital (HC) is found to be nonstationary for all specifications. However, the visual inspection of the time series shows a trend. Therefore, the variables are applicable in the determination of the cointegrating relationship in the long run with the purpose of growth estimation (Johansen & Juselius, 1990; Olugbenga & Alamu, 2013; Ameh & Amadi, 2019).

The cointegration test results using the tests of trace and maximum eigenvalue are summarized below in Table II. As per suggestion of the trace and maximum eigenvalue statistics, three cointegrating equations exist both for trace and maximum eigenvalue statistics at 5 percentsignificance level as the null hypothesis of the absence of cointegrating relationship is clearly rejected up to 'at least 2' cointegrating equation. It confirms the existence of cointegrating relationship between real GDP (Y) and the factors that control it in the long run.

Table II: Cointegration test results

H0: r	Trace statistic	p-value**	Max-Eigen statistic	p-value**
r=0	192.339*	0.000	57.140*	0.005
r≤1	132.624*	0.000	43.074*	0.031
r≤2	87.812*	0.001	41.241*	0.006
r≤3	47.031	0.071	26.081	0.087
r≤4	20.128	0.406	11.125	0.637
r≤5	9.647	0.331	9.631	0.258
r≤6	0.015	0.857	0.015	0.857

Notes: * denotes rejection of the hypothesis at the 0.05 level

** Mackinnon-Haug-Michelis (1999) p-values

The normalized long-run cointegration equation is presented in equation 03 with necessary diagnostic checks. Regarding robustness checks, the LM test approves that there exists no autocorrelation among the residuals and the white heteroskedasticity test confirms that the residual term is homoscedastic. Thus, the accepted model is correctly specified and stable, which is further confirmed by the stability diagnosis shown in figure B in the appendix.

The Normalized Cointegrating Equation

$$lnY_t = \underset{(0.0107)\ [3.3738]^{*}}{0.0361I_t} + \underset{(0.0157)\ [3.3949]^{*}}{0.0533G_t} + \underset{(0.0447)\ [1.7069]^{***}}{0.0763FDI_t} - \underset{(0.5031)\ [-3.8308]^{*}}{1.9273lnTOT_t} + \underset{(0.5123)\ [7.7377]^{*}}{3.9640lnHC_t} - \underset{(0.0987)\ [-7.5816]^{*}}{0.7483lnCF_t} + u_t \quad (3)$$

Notes: Figures in round brackets shows p-values and t-statistics are in box brackets
Rate of adjustment in real GDP (Y) (t-statistic): -0.106**(-3.196)
LM Autocorrelation Test: p-value=0.1912 (LM (1)), 0.1726 (LM(2))
White Heteroskedasticity: p-value= 0.0973
*Statistically significant at 1 percent level
** Statistically significant at 5 percent level
*** Statistically significant at 10 percent level

Except for government expenditure, signs of the coefficients of all other variables are observed to carry expected signs and they are statistically significant. While a 1 unit increase in domestic investment and foreign direct investment stimulates output growth of Turkey by 3 percent and 7 percent, respectively, terms of trade improvement hurt it, meaning that the increase in terms of trade improves the demand for goods produced abroad than home and thereby worsens economic growth developing unfavourable impact on trade balance (Blattman, Hwang, & Williamson, 2003). Development in human capital by 1 percent promotes output growth of Turkey by 3.96 percent. Concerning capital flight, a 1 percent increase in the flight of capital deters the growth of output by 0.798 percent in the long run. The significant error correction coefficient bearing the value -0.106 implies that any deviation between the actual and expected output growth in the short term is eliminated at a rate of 10.6 percent per period in the long run.

5. Conclusion

Being a highly indebted economy, capital flight from Turkey works as a major barrier in achieving its development goals. The study examines the impact of capital flight on the long run output growth of Turkey. Given all the variables are stationary at first difference confirmed by the ADF and PP test, the study employs the Johansen cointegration approach and determines there exists at least two long run cointegration relationships between output growth and its

determinants. Results of the study support the anti-growth phenomena of capital flight for Turkey in the long run. Hence, Turkey should consider capital flight as one of the fundamental issues in setting the country's development strategies as it has been identified as a barrier in achieving the country's growth potentials. Furthermore, capital flight is also contributing to the sharp rise in the external debt of Turkey to uphold the level of investment. Therefore, necessary measures should be taken to limit capital flight from Turkey. Checking the discriminatory treatments of domestic capital will confirm an environment conducive for business, which will develop confidence in investors and thereby restraining capital flight. Government and policymakers should, therefore, revisit the taxation, interest rate, and exchange rate policies to retain domestic capital and stimulate domestic investment and thereby stimulating economic growth. The study considers the residual method of capital flight among its different measures. However, one can resort to alternative measures of capital flight to compare its extent and impact on the output growth of Turkey to reach a more inclusive decision.

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Appendices

Table A: ADF and PP test results for stationarity (All variables are I (1))

Variables	Test in	Includes	ADF		PP	
			t-statistic	p-value	t-statistic	p-value
lnY	Level	Intercept	0.172810	0.9671	0.338720	0.9773
		Trend, Intercept	-2.297195	0.4250	-2.357737	0.3944
	First Difference	Intercept	-6.339493	0.0000	-6.363340	0.0000
		Trend, Intercept	-4.124452	0.0139	-6.409341	0.0000
I	Level	Intercept	-1.579400	0.4826	-2.651978	0.0921
		Trend, Intercept	-3.996634	0.0175	-3.996634	0.0175
	First Difference	Intercept	-8.533387	0.0000	-11.18985	0.0000
		Trend, Intercept	-8.380382	0.0000	-10.95204	0.0000
G	Level	Intercept	-2.501594	0.1258	-1.199499	0.6644
		Trend, Intercept	2.575625	1.0000	-2.838686	0.1934
	First Difference	Intercept	-1.018420	0.7319	-6.871321	0.0000
		Trend, Intercept	-1.984001	0.5835	-6.774930	0.0000
FDI	Level	Intercept	-1.991467	0.2891	-1.888045	0.3341
		Trend, Intercept	-3.295870	0.0831	-2.473700	0.3385
	First Difference	Intercept	-5.178528	0.0002	-9.099752	0.0000
		Trend, Intercept	-5.105551	0.0012	-9.120083	0.0000
lnHC	Level	Intercept	-1.724208	0.4096	-4.486403	0.0010
		Trend, Intercept	-1.447803	0.8234	-6.632461	0.0000
	First Difference	Intercept	-0.494731	0.8792	-2.414337	0.1450
		Trend, Intercept	-1.607146	0.7669	-2.679870	0.2503
lnTOT	Level	Intercept	-2.425144	0.1437	-2.124236	0.2367
		Trend, Intercept	-1.402710	0.8394	-2.617146	0.2754
	First Difference	Intercept	-3.540557	0.0130	-7.491360	0.0000
		Trend, Intercept	-0.367344	0.9843	-7.350599	0.0000
lnREER	Level	Intercept	-1.781489	0.3814	-1.416238	0.5636
		Trend, Intercept	-2.918142	0.1690	-2.918142	0.1690
	First Difference	Intercept	-7.518263	0.0000	-7.499795	0.0000
		Trend, Intercept	-1.477793	0.8132	-7.572134	0.0000
lnCF	Level	Intercept	0.744194	0.9912	-1.949646	0.3069
(Visual		Trend, Intercept	-5.504025	0.0004	-6.173590	0.0001
inspection	First Difference	Intercept	-4.888238	0.0004	-20.01934	0.0001
shows trend)		Trend, Intercept	-5.122749	0.0013	-21.96766	0.0000

Notes: * Test statistics are statistically significant at 1% level of significance
** Test statistics are statistically significant at 5% level of significance
The numbers in brackets for the ADF tests represent the number of optimal lags included in the test regression to ensure white noise error based on the minimum value of Akaike's Information Criteria (AIC) and the numbers in brackets for the PP tests represent the choice of truncational lag length in the test.

Table B: VAR Lag order selection criteria

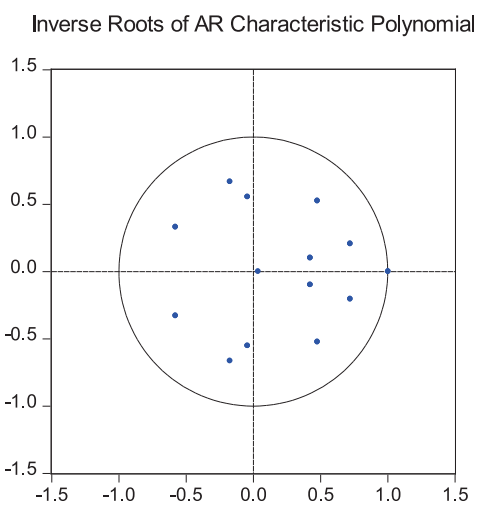
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-84.95623	NA	3.90e-07	5.108679	5.416586	5.216147
1	142.5585	353.9118*	2.03e-11*	-4.808807	-2.345555*	-3.949066*
2	195.8534	62.17736	2.21e-11	-5.047411*	-0.428814	-3.435397

* 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

Table C: Summary statistics

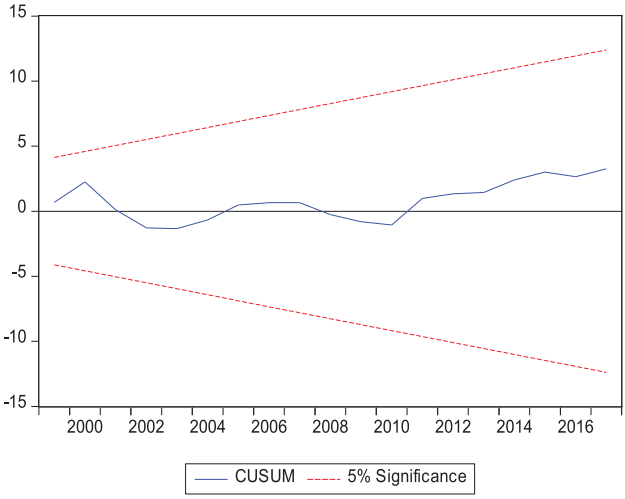
Variable	Mean	Std. Dev.	Maximum	Minimum	Skewness	Kurtosis
GDP	429066	463558.7	1342718	26739.1	0.89426	2.180641
Investment	125260	157513.8	486078.5	1746.275	1.042496	2.523962
Government Expenditure	54786.49	64260.01	189086.9	1153.857	0.929067	2.26082
FDI	9037.222	14627.51	53502.5	0.035663	1.65275	4.707887
TOT	110.924	9.243875	131.2111	96.87337	0.362663	2.038764
Human Capital	6.28575	1.31047	8.23	3.77	-0.121726	1.934835
Capital Flight	21091.45	29123.15	98009.42	-70701.63	-0.18813	4.901485

Figure A: Stationarity of VAR



As the unit roots lie within the unit circle, the VAR is statuinary.

Figure B: Stability Diagnosis



As the line showing CUCUM statistic lies within the confidence interval at a 5 percent significance level, the chosen model is structurally stable.