The Effect of Macroeconomic Determinants on Capital Flight in Sri Lanka

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Introduction

Capital flight is one of the most important problems for developing countries which often lack the necessary financial resources to promote growth and development. Capital flight is a large-scale exodus of financial assets and capital from a nation due to events such as political or economic instability, currency devaluation or the imposition of capital controls. The UK Overseas Development Institute (ODI) defines capital flight as "the outflow of resident capital which is motivated by economic and political uncertainty." Capital flight can impose a severe burden on poorer nations since the lack of capital impedes economic growth and may lower living standards. The challenge posed by capital flight have always engaged attentions of policymakers, economists and the government in Sri Lanka. It denied the country of enormous resources which would have been used to promote the rate of economic growth and improve the welfare of its citizens.

Capital flight causes various serious negative consequences on the domestic economy of any country. Momodu, (2006); Onwioduoki, (2001); Ajayi, (1995); and Razin and Sadika, (1991) identified such consequences by incoperating reduction of domestic tax base, reduction of domestic investment, reduction of monetary control, destabilization of interest rate, underdevelopment of domestic economy, and reduction of per capita income into the model. Other consequences of capital flight is that capital 'flighted' never comes back, it skews income distribution, and drives up the marginal cost of foreign borrowing. Based on the above, Ajayi, (1997) states that income and wealth created and held abroad are outside the purview of the domestic authorities, and cannot be taxed. Capital flight hampers domestic

revenue, depresses the incentive to save, inflicts welfare losses, discourages investment, causes inability to service debts, leads to overshooting of the exchange rate, and contributes to imbalances of trade.

Several studies have been carried out on capital flight worldwide; however, a few studies have focused on the causal factors, measurements, and macroeconomic determinants of capital flight in developing countries. The magnitude of the impact of macroeconomic varieables on capital flight is given less priority. Thus, this study is an attempt to fill this gap considering the capital flight issues of Sri Lanka.

Objectives

Based on the above empirical and theoretical evidence this study intends to examine the effect of macroeconomic determinants on capital flight in Sri Lanka employing econometric techniques for empirical analysis. The study is aimed at providing the tools for policy making to reduce capital flight in other developing and third world countries.

Methodology

The study is designed to focus on macroeconomic determinants influencing capital flight in comparison to Gross Domestic Product (GDP) as a proxy to Economic Growth, Capital Stock as a proxy to investment (INT). Inflation (INF)) and Unemployment (UMP) are the selected macroeconomic (independent) variables and Capital Fight (CF) is the dependent variable. The study covers the period from 1990 to 2017 and uses secondary time series data from the World Bank database and Central Bank of Sri Lanka. The theoretical form of the functional econometric model of this study is given below:

$$CF_t = \delta_0 + \delta_1 GDP_t + \delta_2 INT_t + \delta_3 UMP_t + \delta_3 INF_t + u_t \qquad (1)$$

Where, $\delta_0, \dots\dots, \delta_3$ are coefficients of determinant variables; $u_t$is error term and t is time factor. The study adopted Augmented Dickey Fuller (ADF) unit root test method to test the order of integration of variables and Akaike Information Criterian (AIC) was adapted to determine the optimal lag length of each series. The Johansen Co-integration method and Pairwise Granger Causality approach is adopted to investigate the relationship between the variables and the effects of macroeconomic determinants on CF. Error

Correction model (ECM) mechanism is adopted to determine the short run dynamics and long run adjustment of variables. These test were conducted through E- views econometric software.

Results and Discussion

ADF unit root test confirmed that all variables are stationary in their first difference I(1). Based on the appropriate Lag length structure, we adapted the lag order (1) for the model to estimate the parameter. The trace and maximum eigenvalue test indicates two co-integrating relationships thus revealing the presence of a long run relationship among the variables CF, GDP, INT, UMP and INF during the period under reference (See Table 1).

Table 1: Unrestricted Co-integration rank test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.9782	167.718	69.818	0.0000
At most 1 *	0.7654	71.971	47.856	0.0001
At most 2 *	0.6654	35.721	29.797	0.0092
At most 3	0.2753	8.345	15.494	0.4292
At most 4	0.0116	0.292	3.841	0.5885

Since there are two co-integrating vectors, an economic interpretation of the relationship between capital flight, gross domestic product, investment, unemployment and inflation can be obtained by normalizing the estimates of the unconstrained co-integrating vector on capital flight. The results of long run relationships are given below in equation

$$\widehat{\mathrm{CF}}_t = 5.25\mathrm{e}^{+10} - \underset{(2069691)}{43336398}\mathrm{GDP}_t + \underset{(0.26033)}{3.62}\mathrm{INT}_t + \underset{(2.9e^{+7})}{5.42\mathrm{e}^{+8}}\mathrm{INF}_t - \underset{(6.8e^{+7})}{1.74\mathrm{e}^{+9}}\mathrm{UMP}_t \qquad (2)$$

Note: Standard errors are given in parentheses

The parameters of long run equation are presented in Equation 1 shows a negative and statistically significant relationship between economic growth

and capital flight. Investment and the inflation rate are positively related to capital flight; and the unemployment rate is negatively related with capital flight.

Table 2: Vector error correction mechanism

Variable	Coefficient	Std.Error	t-Statistic	Decision
ECM (-1)	-0.062	(0.313)	[-0.197]	Insignificant

The ECM Outputs shown in Table 2 indicate that the speed of adjustment to equilibrium is negative which confirm the theoretical relationship among concerned variables. Further, the error correction model coefficient -0.062 is rightly signed but not statistically significant at 5% level. It indicates that just about 6 % of the disequilibrium or distortion in the Sri Lankan economy is yearly being corrected for, though slowly due to the low coefficient of the ECM term. The existence of co-integration relationships indicates that a long-run equilibrium relationship exists between capital flight, economic growth, investment, inflation and unemployment in Sri Lanka.

Table 3: Results of the short run relationship

Variables	Lag (0)	t- Statistic	Lag (1)	t- Statistic
D(CF)			-0.2522	[-0.574]
D(GDP)	-4.38E-09	[-0.498]	24119	[1.640]
D(INT)	-0.284790	[-2.938]	-0.3380	[-0.345]
D(INF)	-8.68E-10	[-1.251]	3958	[0.325]
D(UNMP)	8.31E-11	[0.859]	-6.2E+08	[-0.518]

According to Table 3, UNMP has positive impact on CF in short run. That is an increase in the unemployment rate is more likely to increase the capital flight. However this impact is not statistically significant. Even through GDP, INT, and INF affect the CF negatively, only the effect of INT is statistically significant. This could be because, capital flight leads to the loss of resources as capital is transferred abroad. This removal of domestically available resources directly alters the desire for domestic investment by individuals and thus the level of aggregate domestic investment.

The granger causality test results suggest unidirectional causality that runs from gross domestic product to capital flight; inflation to gross domestic product and from gross domestic product to investment within the period under reference. The economic implication of unidirectional causality from GDP to CF at 10 % level of significance is that a rise in gross domestic product leads to increases in the volume of funds taken out of the economy through capital flight.

Table 4: Extracted output of Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause CF	26	3.462	0.05
INF does not Granger Cause GDP	26	5.991	0.00
GDP does not Granger Cause INT	26	10.199	0.00

This result reveals that a fall in economic growth leads to increase the capital flight outflow; it induces the investor to take their investment back and money will move out of the country. The coefficient of investment and the inflation rate are positively related to capital flight which indicates that the higher investment and inflation in the country would result in increasing capital flight. Unemployment rate is negatively related with capital flight which indicates that a lower unemployment rate increases the wages and labour shortage among skilled labor; in turn both increase the labor cost of an investment, thus inducing labor flight through the investors moving their investment to a country where the labor is cheaper.

Conclusion

The challenges posed by capital flight have always engaged attention of economists, policy makers, and successive governments in Sri Lanka because it has denied the country of enormous resources which could have been used to accelerate the rate of economic growth and improve the welfare of its citizens. This study attempted to examine the effects of macroeconomic determinants on capital flight in Sri Lanka using a co-integration and causality approach. It is concluded that there is a causal relationship between macroeconomic factors; i.e inflation, unemployment, capital stock, economic

growth and capital flight in Sri Lanka. Therefore, the Government needs to frame effective macroeconomic policies and strategies in order to manage inflation and interest rates at desirable levels; create an enabling environment to accommodate a higher level of capital stock through new investment; provide cheap labor with skill capabilities; uninterrupted sustainable economic growth process which could keep continuously the foreign investment for the longer period without capital flight. As much as possible, expatriates and researchers should be engaged in further studies since knowledge is lacking in these areas.

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