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Capital Flight and External Debt in Zimbabwe: Explaining the Revolving Door Hypothesis

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Abstract:
The relationship between capital flight and external debt has been described as two faces of the same coin and it has attracted a lot of attention from policy makers and academics. Due to the observed incidence of high capital flight and external debt in Zimbabwe, this study examined the relationship between capital flight and external debt in Zimbabwe. The main objective of the study is to establish the direction of causality between capital flight and external debt for the period 1980-2010 in the spirit of the revolving door hypothesis. The study employs the Granger causality test in order to investigate this relationship. The pair wise Granger causality test revealed the existence of a uni-directional relationship running from external debt to capital flight. This result indicates that for Zimbabwe, external debt has had an influence on capital flight, whilst capital flight has not influenced external debt. The results obtained herein further shows that, if external debt remains unchecked, it will continue to lead to massive capital flight. There is need for the authorities to formulate and implement a holistic debt management strategy in order to deal decisively with high external indebtedness which is causing massive capital flight.

Keywords: *Capital flight, external debt, revolving door hypothesis, granger causality test and debt management*

1. Introduction

Beja (2006) defines capital flight as the movement of capital from a resource-scare developing country to avoid social control. Private capital may move out of the country in response to different types of risks such as hyperinflation, devaluation, or political havoc. Capital flight remains one of the puzzling policy issues in every economy. Although it is not a new issue, it has become of great importance due to the scarcity of capital in developing countries. Capital flight from economies also deserves serious attention due to the fact that it results in the loss of financial resources. In the long-term resources lost due to capital flight exacerbates the capital scarcity problem and also retards growth and development (Makochekanwa, 2007).

Most developing countries in Africa have relied much on external borrowing which has come in the form of loans and grants due to resource constraints in their respective domestic economies. Developing countries, particularly those in Africa, find themselves in debt crisis, a situation that has limited their ability to develop and meet the socio-economic needs of the masses. Developing countries that have been experiencing massive capital flight are those that have had problems in servicing their own debts during the 1980s.Capital flight and external debt, in developing countries particularly those in Sub-Saharan Africa, over the past decades have become a symbol of two faces of the same coin (Fofack, 2009).

Over the past three decades Zimbabwe has not been spared from all the challenges that capital flight and external indebtedness create. The size of capital flight has assumed a serious dimension which has also posed a serious threat to sustainable growth and development. For instance, Boyce and Ndikumana (2012) as in Kwaramba *et al.* (2015) fond capital flight in Zimbabwe to have reached a record high of US$3.1billion in 2006. Zimbabwe is one of those countries that are classified as being heavily-indebted where the issue of capital flight has been regarded to be equally important with regards to other challenges that the country is facing. Zimbabwe as a debtor country has over the years faced serious debt servicing problems. Zimbabwe`s debt position has also been found to be unsustainable according to the IMF (2010) debt sustainability analysis.

As discussed above, it is evident that the Zimbabwean economy has heavily accumulated external debt since 1980 and it has also experienced massive capital flight. As far as capital flight is concerned Zimbabwe has lost a cumulative US$12billion in the last three decades since independence through illicit financial flows ranging from secret financial deals, tax avoidance, trade mispricing and illegal commercial activities (African Development Bank (AfDB) and Global Financial Integrity (2013) as in Kwaramba *et al.*, 2015).

As the severity of external debt become more pronounced in Zimbabwe, so too is the capital flight problems. This trend observation prompts one to ask a question as to whether the external debt is the one fuelling or driving capital flight – that is, is capital flowing under the disguise of external borrowing fleeing the country? However, such mere trend observations of external debt and capital flight cannot be informatively used to draw conclusions on the impact of external debt on capital flight, unless an empirical investigation is carried out.

The study is motivated by the fact that Zimbabwe has experienced large magnitudes of external debt and massive capital flight over the years. Given the foregoing background of large magnitudes of external debt and massive capital flight over the years in Zimbabwe, this study provides an empirical understanding of the causal relationship between external debt on capital flight.

2. Literature Review

Under the theoretical literature review the theories that have been propounded in explaining the relationship between capital flight and external debt are that by Morgan Guaranty Company (1986) and Direct Linkages Theories by Boyce (1992) and (Ajayi, 1995). According to Morgan Guaranty Company View (1986) an indirect relationship exists between capital flight and external debt. The indirect simultaneous occurrence of debt accumulation and capital flight in Third World countries "was no coincidence" since "the policies and track records that angered capital flight also generated demands for foreign credit". The direct linkages theory highlighted four possible linkages through which capital flight and external debt are directly related. These four distinctions are debt-driven capital flight, debt-fuelled capital flight, flight-driven external borrowing and flight-fuelled external borrowing. These are direct linkages through which capital flight and external debt are related, and this happens through what is called a revolving door mechanism. Their main emphasis has been on issues to do with causality. Boyce (1992) used a regression model that took into account simultaneity between capital flight and external debt for the Philippines.

Empirical studies on capital flight and external debt thus provides more information as to how the theoretical conjectures above were tested which will lay more ground work for the research methodology. Studies by Chipalkatti and Rishi (2001); Saxema (2016); Demir (2004); Cerra *et al* (2005); Ajilore (2005); Fofack (2009); Makochekanwa (2007) and Ndikumana *et al.* (2014) are in support of the revolving door hypothesis which supports the existence of a bi-directional relationship between external debt and capital flight. However a study by Ajayi (1997) found no causal relationship between capital flight and external debt. This suggests that capital flight and

Although the empirical results have been inconclusive, the bi-directional relationship between capital flight and external debt which is also referred to as the revolving door hypothesis seems to be a more common research finding. Furthermore, the residual method has been a common method for measuring capital flight in the studies that have been reviewed.

3. Data Sources and Methodology

Thestudyisentirelybasedonsecondarydatafrom1980to2010. The methodology applied in this study closely follows Fofack (2009). Various diagnostic tests will be carried out in a bivariate model analysis using external debt (ED) and capital flight (CF). Various diagnostic tests were carried out and these tests are unit root tests, cointegration analysis, Granger causality tests and variance decomposition tests. The model can be specified as:

$$CF_t = \sum_{i=1}^{n} \alpha_i ED_{t-i} + \sum_{i=1}^{n} \beta_j CF_{t-j} + u_{1t} \dots \dots \dots \dots \dots \dots (1)$$

$$ED_t = \sum_{i=1}^{n} \gamma_i ED_{t-i} + \sum_{i=1}^{n} \sigma_j CF_{t-j} + u_{2t} \dots \dots \dots \dots \dots \dots (2)$$

Where:CF_t represents Capital Flight to GDP ratio; ED_t represents External Debt Stock to GDP ratio; $\alpha_i, \gamma_{i,} \beta_jand\sigma_j$ are coefficients to be estimated; u_{1t} and u_{2t} –these are error terms which are assumed to be uncorrelated. Estimation of two sets of equation (1) and (2) will be done.

This study used external debt stock as a ratio of gross domestic product. It is expected that there is a positive relationship between capital flight and external debt, that is, higher levels of external borrowing are associated with higher capital flight. Empirical studies by Makochekanwa (2007) and Ndikumana and Boyce (2008) have used this variable. The variable on capital flight obtained using the World Bank (1985) will be expressed as a ratio of Gross Domestic Product (GDP). We expect a positive relationship between capital fight and external debt *a priori* since higher levels of capital flight may lead to higher levels of debt. Empirical studies by Makochekanwa (2007) and Boyce and Ndikumana (2010) have used this variable as a measure of capital flight.

External debt and capital flight were computed as ratios of GDP. The data on capital flight was computed using the World Bank (1985) approach and it was retrieved from the Political Economy Institute (PERI) database. The data on external debt stock was obtained from the World Bank World Development Indicators (2011).

4. Discussion of results

The Augmented Dickey Fuller (ADF) test was used for undertaking stationarity tests. The null hypothesis that a unit root exist was tested against the alternative hypothesis that there is no unit root, of which the presence implies that the variables are non-stationary.

Variable	ADF Probability	Decision on H_0	Remarks
CF	0.2245	Fail to reject	Non stationary
ED	0.0006	Reject	Stationary

Table 1: Unit root tests of the variables in levels

The ADF tests results for stationarity from table 1 found that external debt was stationary at 5% level. The same testing procedure was then conducted by undertaking the same tests after differencing the series on capital flight for the first time. The results in table 2 confirm CF to be stationary after first differencing.

Variable	ADF Probability	Decision on H_0	Remarks
CF	0.0000	Reject	Stationary

Table 2: Unit root tests results after first differencing

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Cointegration tests are normally undertaken if variable are integrated of the same order. As shown in table 1 and 2, the variables on CF and ED achieved stationarity at different levels hence one cannot justify the use of cointegration tests. The variable on CF is integrated of order one, I (1), and that of ED is integrated of order zero, I (0). This then renders the need to use Vector Auto regression (VAR) tests (Kassim, 2014).

Before estimating the VAR equation and carrying out the Granger causality tests it is important to determine the optimal lag length in order to ensure accurate results. The involvement of too many lagged terms will consume degrees of freedom and too few lags may lead to specification errors Gujarati (2004). The Akaike Information Criterion (AIC) was used and the optimal lag length was chosen to be the one that minimises the AIC. The optimal lag length was found to be four (4) since the AIC is at its minimum at 1.414652.The Granger causality test was used to determine which variable take precedence over the other. The results from the pair wise Granger causality test results are shown in table 3.

Null hypothesis	Observations	F-Statistic	Probability
ED does not Granger Cause DCF	26	3.42348	0.0316
DCF does not Granger Cause ED		0.27834	0.8879

Table 3: Granger causality test results

The null hypothesis of no causality from external debt to capital flight is rejected since the probability value of 0.0316 is less than the critical value of 0.05. However, the results show no reverse causality from capital flight to external debt since the probability value of 0.8879 is greater than 0.05. This result suggests that for the period under consideration, external debt accumulation influenced capital flight. The relationship can be depicted as follows:

$$External\ Debt \rightarrow Capital\ Flight$$

The above results suggest a phenomenon known as debt-driven capital flight. This is a form of direct linkage between CF and ED. The results are similar to Fofack (2009). For the case of Zimbabwe, the accumulation of external borrowing has incentivized individuals to engage in capital flight. This result shows no support of the revolving door hypothesis since there exists a uni-directional causality from external debt to capital flight.

According to Blanchard (1987) parameters estimated from the VAR Model suffer from multi-collinearity problems which may lead to inaccurate inferences. It is not necessary to give detailed explanations of the individual coefficients of the VAR equation, their signs and significance. Therefore the variance decomposition and impulse response are used in making inferences about the variables. (Kassim, 2014). Blanchard (1987) emphasized that the strength of the VAR models lies in the impulse response functions and the variance decomposition.

The variance decomposition results are presented for each variable over a ten period horizon in tables 4 and 5. The variance decomposition is for Differenced Capital Flight (DCF) and External Debt (ED).

Period	SE	DCF	ED
1	0.103407	100.0000	0.000000
2	0.126076	95.98378	4.016220
3	0.130834	90.91377	9.086233
4	0.161692	93.33651	6.663487
5	0.184972	73.58439	26.41561
6	0.202139	64.67938	35.32062
7	0.206052	65.59921	34.40079
8	0.214679	60.68147	39.31853
9	0.231939	62.31376	37.68624
10	0.236562	59.90232	40.09768

Table 4: Variance decomposition of DCF

Table 4 shows that in period one, 100% of changes in DCF are attributed to its own changes. This indicates that DCF in period one is wholly exogenous. In period two, 96% of changes in DCF are due to its own shocks, while 4.02% are due to changes in ED. However, as time pass by shocks to CF are a combination of its own shocks and shocks to external debt. More precisely, at period 10 59.9% of shocks to DCF are due to its own shocks while 40.1% of shocks in capital flight are attributable to shocks in external debt. With passage of time, shocks to external debt increasingly contribute to capital flight shocks. These results are in line with the Granger causality test results which have shown that external debt causally affects capital flight. Column two shows the Standard Error (SE) of the forecast horizon resulting from variations in current and future values of the innovation to each endogenous variable in the VAR. SE started as low as 0.103 in period one but gradually rising to 0.237 indicating increasing uncertainty over the subsequent forecasting horizons.

Period	SE	DCF	ED
1	0.842197	1.426940	98.57306
2	0.850975	3.449997	96.55000
3	0.852286	3.466249	96.53375
4	0.853042	3.633360	96.36664
5	0.854815	3.736293	96.26371
6	0.868707	5.673329	94.32667
7	0.869885	5.710362	94.28964
8	0.871108	5.971570	94.02843
9	0.877747	7.388424	92.61158
10	0.884296	7.279886	92.72011

Table 5: Variance decomposition of ED

The variance decomposition analysis shows that external debt is not wholly exogenous. For instance in period one, 1.43% of shocks to external debt are due to capital flight. The variance decomposition in table 5 shows that less than 8% of variation in external debt is attributed to variation in capital flight. Thus the predominant source of variation in external debt is external debt itself. In particular, at period 10, 7.28% of variation in external debt is due to capital flight whilst 92% is due to own shocks. This result attests to the fact that capital flight does not Granger cause external debt.

Impulse response functions allow the identification of the dynamic relationships of the variables over time, and to analyse the impact of movements in exogenous variables on the endogenous ones. Fig 1 shows the impulse response test results.

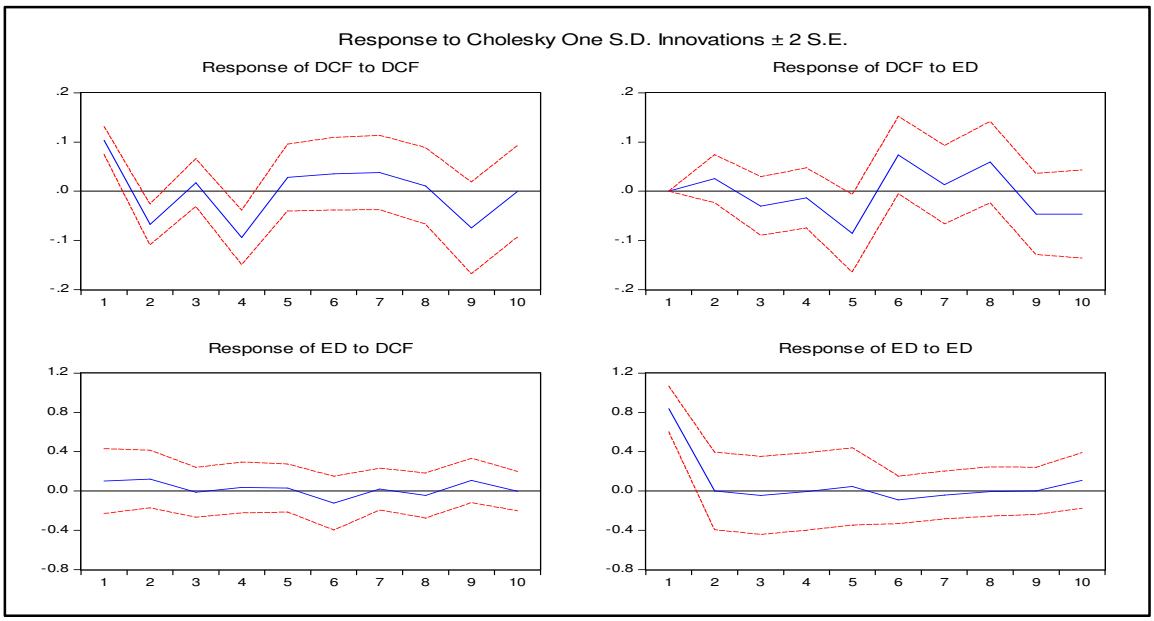

Figure 1: Impulse Response Tests Results

The first row in figure 1 shows that the response of capital flight to itself is highly influential in the initial period, which however declined in the second period as external debt started to gain influence. Shocks in external debt have an influence on capital flight as time pass by. In particular, one standard error shock to DCF leads to a decline in DCF by 0.1% in period 1, which gradually falls to -0.07% and -0.09% in period two and four respectively gradually falls , bust steadily increases in period five up to seven and gradually starts to fall from period seven up to period nine. However, the response of DCF to DCF has been fluctuating over the ten periods. The response of ED to DCF and the response of ED to ED is very close to zero over the ten periods. The second row shows that external debt does not significantly respond to shocks in capital flight throughout the ten year period. This is in support of the Granger causality results that capital flight does not Granger cause external debt. Thus shocks in capital flight do not have a significant effect on external debt.

5. Conclusion

This study focused on the determination of the causal relationship between capital flight and external debt in Zimbabwe, using time series data for the period 1980-2010. The Augmented Dickey Fuller Tests were employed in order to test for the presence of unit root. After diagnostic tests the study employed the VAR Model as opposed to cointegration analysis. The pair wise Granger causality tests revealed the existence of a uni-directional relationship running from external debt to capital flight. This result indicates that for Zimbabwe, external debt has had an influence on capital flight, whilst capital flight has not influenced external borrowing. Meanwhile, variance decomposition analysis established that shocks in external debt significantly drive capital flight while shocks in capital flight

have no significant effect on external debt. Thus, there is debt-driven capital flight in Zimbabwe implying that there is no support of the revolving door hypothesis.

The results have shown that external debt-capital flight relationship is one way in Zimbabwe for the period under review. These results show that, if unchecked, external debt will continue to cause massive capital flight hence leaving the country with a resource deficit. These results are important to the government as far as policy issues and implications are concerned. These findings can also help the government to make a case for debt relief since the continuous accumulation of external debt may signal increased risks, to which private capital owners may respond by pulling out their capital. The government needs to negotiate with International Financial Institutions, the Paris Club and other bilateral loan providers for the possible debt rescheduling or debt forgiveness. If the government drafts a debt relief strategy and its accepted such an initiative will go a long way in reducing the country`s external indebtedness.

Apart from negotiating for debt forgiveness, there is need for the responsible authorities to formulate and implement a holistic debt management strategy as a matter of priority. The following measures could be put in place to ensure that the country manages its external debt in a prudent way. The government needs to guarantee that any external loans are invested into productive projects that give higher returns on investment. If these loans are invested into such productive projects it enhances the country`s debt serving capacity thereby reducing the incidence of falling into a debt crisis. Furthermore, the government also needs to timely pay its outstanding obligations in order to avoid a debt trap which can also spill over into a debt crisis. These measures can thus reduce capital flight since debt-driven capital flight is exacerbated when conditions for debt crises exists.

6. References

i. Ajayi, S. I. (1995). Capital flight and external debt in Nigeria. African Economic Research Consortium Paper No.35.
ii. Ajayi, S. I. (1997). An analysis of external debt and capital flight in the severely indebted low income countries in sub-Saharan Africa. IMF WP/97/68.
iii. Ajilore, O. T. (2005). External debt and capital flight in Nigeria: Is there is revolving door?. SAJEMS, 211-224.
iv. Beja , E. L. (2006). Revisiting the Revolving Door: Capital Flight from Southeast Asia . Working Paper 16 ST/ESA/2006/DWP.
v. Blanchard , O. J. (1987). Vector Autoregressive and Reality-Comment. The Journal of Business and Economics Statistics, 5(4), 449-451.
vi. Boyce , J. K. (1992). The Revolving Door? External Debt and Capital Flight: A Phillippine Case Study. World Developemnt, 20(3), 335-349.
vii. Cerra, V., Rishi, M., & Saxena, S. C. (2005). Robbing the Riches: Capital Flight, Institutions, and Instability. IMF Working Paper WP/05/199.
viii. Chipalkatti, N., & Rishi, M. (2001). External Debt and Capital Flight in the Indian Economy. Exford Development Studies, 29(1), 31-44.
ix. Demir, F. (2004). A Failure Story: Politics and Financial Liberalization in Turkey, Revisiting the Revolving Door Hypothesis. World Development, 32(5), 851-869.
x. Fofack , H. (2009). Causality between External Debt and Capital Flight in Sub-Saharan Africa. Policy Research Working Paper 5042: The World Bank.
xi. Gujarati, D. N. (2004). Basic Econometrics . McGraw.
xii. IMF. (2010). Staff Report for the 2010 Article IV. International Monetary Fund.
xiii. Kwaramba , M., Mahonye , N., & Mandishara , L. (2015). Capital Flight, Natural Resources and Institutions in Zimbabwe. Centre for the Study of African Economies (CSAE) Conference 2015. Oxford: U
xiv. Makochekanwa , A. (2007). An empirical investigation of capital flight from Zimbabwe.
xv. Morgan Guaranty Trust Company of New York. (1986). LDC Capital Flight . World Financial Markets .
xvi. Ndikumana , L., & Boyce , J. K. (2011). Capital flight from sub-Saharan Africa: linkages with external borrowing and policy option . International Review of Applied Economics, 149-170.
xvii. Ndikumana, L., & Boyce, J. K. (2008). New estimates of capital flight from sub-Saharan Africa countries: Linkages with external borrowing and policy options. University of Massachusetts, Political economy research institute.
xviii. Ndikumana, L., & Boyce, J. K. (2010). Capital from sub-Saharan Africa: linkages with external borrowing and policy options. International Review of Applied Economics, 149-170.
xix. Saxema, S. P., & Shanker , I. (2016). Dynamics of external debt and capital flight in India. Scholedge International Journal of Management & Development, 03(02), 49-62.