The Impact of Capital Flight on Investment and Growth in Trinidad and Tobago, 1971-2008

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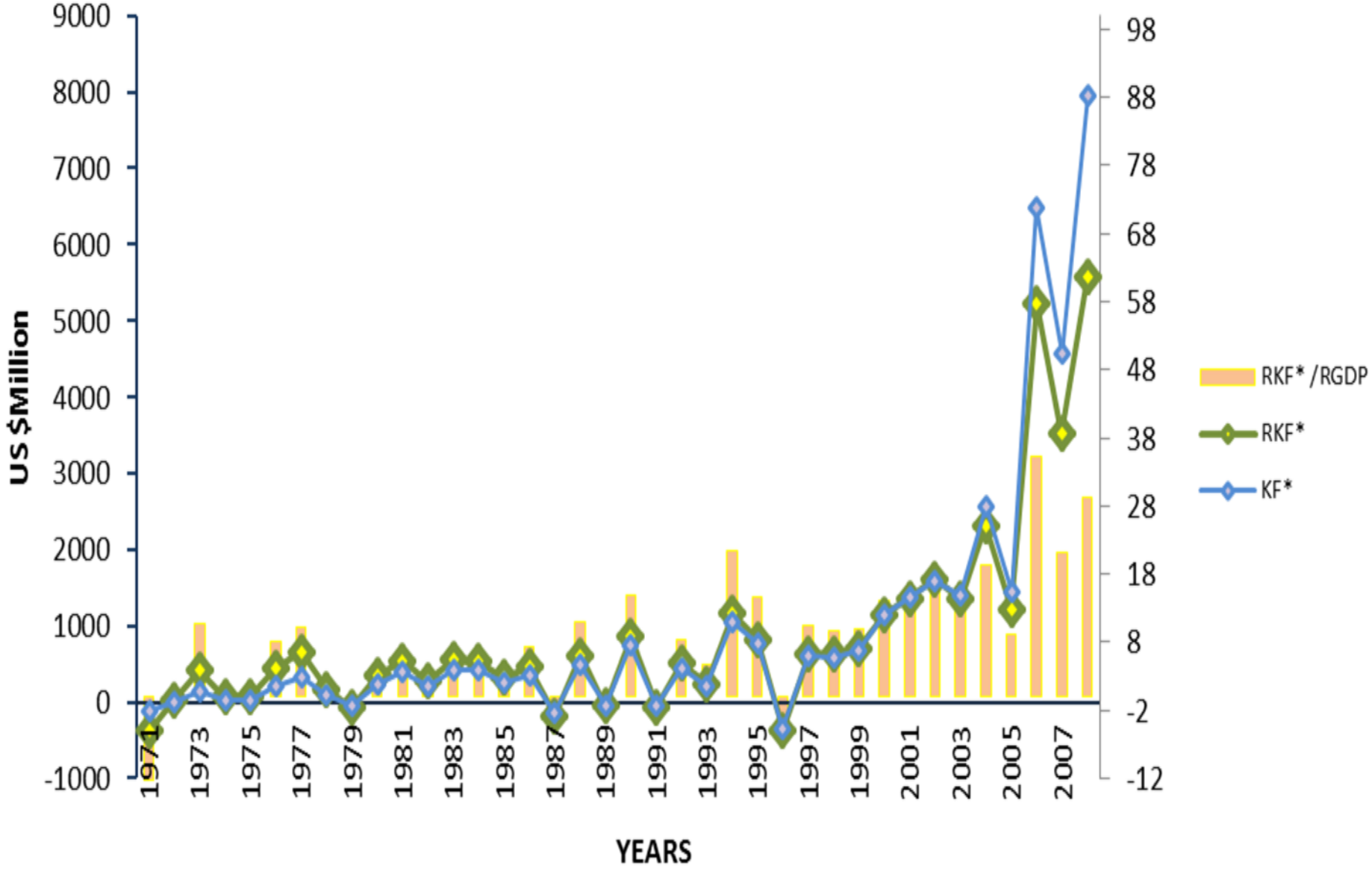
INTRODUCTION

- Capital flight: “the transfer of assets abroad in order to reduce loss of principal, loss of return, or loss of control over one’s financial wealth due to government-sanctioned activities” Epstein [2005]

- Studies by Umoru [2013], Ndikumana and Boyce [2008], Ndiaye [2007], Schneider [2000], Henry [1996], Hermes et al [2002] and Ajayi [2000] have highlighted the notion that capital flight reduces domestic resources and can reduce domestic investment and dampen a country’s economic growth.

Residual Adjusted Capital Flight, Real Capital Flight and Ratio to GDP



CONTRIBUTION

- Attempts to fill this void in the literature with thorough econometric investigation of the previously stated relationships.

- Findings provides a clearer assessment and measure of the impacts of capital flight from Trinidad and Tobago's increasingly liberalized economy.

- Gives better understanding of the nexus between domestic investment and capital flight and capital flight and GDP

INVESTMENT

- Empirical studies by: Adesoye, Maku, and Atanda [2012] , Ndiaye [2007] , Forgha [2008], African Economic Outlook [2012], Saheed and Ayodeji [2012] have all found a negative relationship between capital flight and investment.

The literature shows that capital flight:

- reduced investment by $10.7 billion and $ 3.6 billion per year in Nigeria and Angola, for the period 2000 to 2008 African Economic Outlook [2012]
- reduced domestic investment by 4.5 cents for every dollar of capital flight in the Franc Zone for the period 1970 to 2005 regardless of the measure of capital flight used or the control of macroeconomic variables Ndiaye [2007]
- prevented the ratio of domestic investment to GDP from increasing in Africa: 19% instead of 35% in [Fofack and Ndikumana [2010]

Reduction in Investment

- Directly reduces the desire for domestic investment
- Reduces bank resources and bank credit to the private sector [Adegbite and Adetiloye 2013, Saheed and Ayodeji 2012, Ndiaye 2012]
- Reduces government investment and tax revenue is reduced as taxable income declines (Tax-Depressing Thesis) [Khodaei 2012, Saheed and Ayodeji 2012, Forgha 2008, Ndiaye 2007]
- Incites a uncertainty and fear which reduces investor confidence [Nkurunziza 2012, Ndiaye 2007, Collier et al. 2001]
- Creates a cycle of lower investment as it reduces output and the productive capacity [Lesotlho 2006, Dutta 2008, Adegbite and Adetiloye 2013]

GROWTH

- Empirical studies by: Wahyudi and Maski [2012], Ajayi [2012], Umoru [2013], Khodaei [2012], Forgha [2008], Beja [2007] and other developing and Gusarova [2009] have all found a negative relationship between capital flight and growth

The literature shows that capital flight:

- Reduced economic growth between 1 % to 2.3% for the period 1970 to 1999 in the Philippine Beja [2007]
- Reduced economic growth by 0.0617% for a 1% increase in Cameroon for the period 1970 to 2003 Forgha's [2008]
- Reduced economic growth by 0.14% for a 1% increase in 139 developing and transition countries for the period 2002 to 2006 Gusarova [2009]
- approximately reduced GDP in South Africa by 9.2 % (US$13 billion in 2000), China by 10.2% (US$109 billion in 1999), Chile by 6.1%(US$4.7 billion in 1998) and Indonesia by 6.7%(US$14 billion in 1997) Kapoor [2009].

Reduction in GDP

- Creates a cycle of lower investment and reduces output and the productive capacity[Lesotlho 2006, Dutta 2008, Adegbite and Adetiloye 2013]
- Reduces the level of demand for goods and services and thus domestic production and growth
- Reduces government generating revenue and growth enhancing expenditure [Kapoor 2009, Forgha2008]
- Reduces the capital to labour ratio: Gusarova [2009], Debajyoti [2006], and Collier et at [2001] show that as the capital to labour ratio declines so does the productivity of capital and the levels of output

METHODOLOGY: Real Capital flight Measure

Residual or Broad Estimate adjusted for Trade Misinvoicing and Inflation

$$KF = KF^* + MIS \ldots (1)$$

$$KF = [\Delta DEBT + NFDI - CAD - \Delta FR] + [\text{Export Misinvoicing} + \text{Import Misinvoicing}] \ldots (2)$$

$$RKF = KF/PPI \ldots (3)$$

Where:
KF-estimated capital flight adjusted for trade misinvoicing; KF* -Residual capital flight; RKF -estimate of capital flight adjusted for inflation using the United States producer price index (PPI) for 2000 as the deflator; Δ – change; ED-stock of gross external debt reported by the WB; NFDI -net foreign investment; CAD -current account deficit; FR -stock of official foreign reserves.

METHODOLOGY: Econometric Approach

For both dependent variables domestic investment (INV) and real GDP (RGDP):

1. A Vector Error Correction (VEC) model is used to investigate the dynamic relationship with capital flight

2. A Generalised Method of Moments (GMM) estimation is then used to further investigate the causal linkages

- Vector of controlled variables (X) were utilised for each estimation

Regression analysis

$$\Delta INV_t = \alpha_0 + \alpha_1 \Delta RKF_t + \alpha_2 \Delta X_t + \lambda ECT_{t-1} + \varepsilon_t \quad \text{VEC model}$$

$$\Delta INV_t = \alpha_0 + \alpha_1 \Delta RKF_t + \alpha_2 \Delta RKF_{t-1} + \alpha_3 \Delta X_t + \varepsilon_t \quad \text{GMM model}$$

Where:

- α_0= constant
- α_i= coefficients of each determinant
- X= vector of macroeconomic control variables: RGE- Real government expenditure; RCGDP- growth rate; RD- interest rate differential
- ECT = cointegrating vector [INV, RKF, RGE, RCGDP,RD]
- ε = error term

- Instruments: level and lagged values of endogenous variables

Regression analysis

$$\Delta LRGDP_t = \beta_0 + \beta_1 \Delta RKF_t + \beta_2 \Delta RKF_{t-1} + \beta_3 \Delta X_t + \gamma ECT_{t-1} + \varepsilon_t \quad \text{VECM model}$$

$$\Delta LRGDP_t = \beta_0 + \beta_1 \Delta RKF_t + \beta_2 \Delta RKF_{t-1} + \beta_3 \Delta X_t + \varepsilon_t \quad \text{GMM model}$$

Where:

- β_0= constant
- β_i = coefficients of each determinant
- X= vector of macroeconomic control variables: TOT-terms of trade; POP-population growth rate; RER-Real exchange rate
- ECT = cointegrating vector [LRGDP, RKF, TOT, POP]
- ε = error term
- LRGDP= logged values of RGDP

- Instruments: lagged values of endogenous variables.

CAPITAL FLIGHT'S IMPACT ON DOMESTIC INVESTMENT

VEC Dependent Variable: INV		GMM Dependent Variable: INV	
Constant	48.48655 (0.883062)	**Constant**	50.16892 (0.3563)
D(RKF)	-0.298244 (-5.132061)	**D(RKF)**	-0.358324 (-4.070197)
D(RGE)	0.702847 (3.171911)	**D(RGE)**	0.731763 (3.775360)
D(RCGDP)	50.63376 (3.467691)	**D(RCGDP)**	26.78318 (4.201610)
D(RCGDP(-1))	-54.85011 (-3.567964)	**D(RKF(-1))**	-0.174359 (-4.091724)
ECT	-0.581847 (-4.808103)		
DIAGNOSTICS		**DIAGNOSTICS**	
R^2	0.69	**R^2**	0.47
Adjusted R^2	0.64	**Adjusted R^2**	0.40
Functional Form F-test	13.23 [0.00]	**J-Statistic (p value)**	0.53
Serial Correlation	0.01	**Durbin-Watson stat**	2.39
Heteroskedasticity	0.53		
Normality	0.27	**Normality**	0.09
Ramsey RESET /CUSM test	Within bands	**Ramsey RESET test**	Within bands

INV = 1.0058 -0.46032RKF+ 1.4108RGE + 197.7424RCGDP – 14.944RD…(ECT)

CAPITAL FLIGHT'S IMPACT ON GDP

VEC Dependent Variable: RGDP		GMM Dependent Variable: RGDP	
Constant	0.020441 (1.571854)	**D(TOT)**	0.005762 (2.257706)
D(TOT)	0.004799 (5.066181)	**D(RER)**	-0.157736 (-4.498577)
D(RER)	-0.160480 (-5.579878)	**D(LINV)**	0.264186 (3.604983)
ECT	-0.099120 (-5.795502)	**D(RKF(-1))**	-0.000107 (-3.280172)
DIAGNOSTICS		**DIAGNOSTICS**	
R^2	0.64	**R^2**	0.67
Adjusted R^2	0.60	**Adjusted R^2**	0.60
Functional Form F-test	19.14 [0.00]	**J-Statistic (p value)**	0.34
Serial Correlation	0.14	**Durbin-Watson stat**	2.12
Heteroskedasticity	0.26		
Normality	0.47	**Normality**	0.72
Ramsey RESET /CUSM test	Within bands	**Ramsey RESET test**	Within bands

LRGDP = 7.45996 -0.0002RKF + 0.0187TOT + 0.30764POP …(ECT)

CONCLUSION

Capital flight is a fundamental problem

Capital flight's financial haemorrhage is showing a reduction in domestic investment and GDP

Change is needed to ensure that capital flight cannot destabilise the financial market

The domestic investment environment must also be evaluated because capital flight does not only indicate poor regulative measures but also unsustainable investment environment and diversification.

Non-restrictive measures to boost confidence in the economy must be re-invigorated to curb the influence of capital flight with the possibility of capital management techniques

THANK YOU