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# CAPITAL FLIGHT: CONCEPTUAL AND METHODOLOGICAL ISSUES*

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**Abstract**

Capital flight is one of the most important problems for developing countries which often lack the necessary financial resources to promote growth and development. In this paper, we aim to evaluate the conceptual and methodological problems related with the definition and measurement of capital flight and summarize the main findings of some of the empirical studies on the determinants of capital flight and its associations with other variables in an attempt to identify the research gaps in the existing literature.

**Keywords:** Capital flight, resident capital outflows, capital outflows.

**Öz**

**Sermaye Kaçışı: Kavramsal ve Yöntemsel Konular**

Sermaye kaçışı büyüme ve kalkınma için çoğu zaman yeterli finansal kaynaklardan yoksun bulunan gelişmekte olan ülkelerin önemli sorunlarından biridir. Bu yazıdaki amacımız, sermaye kaçışının tanımı ve ölçülmesi ile ilgili kavramsal ve metodolojik sorunları değerlendirmek ve sermaye kaçışının sebepleri ve bunun diğer değişkenler ile arasındaki ilişkisi üzerine yapılmış bazı ampirik çalışmaları özetleyerek literatürdeki eksiklikleri belirlemeye çalışmaktır.

**Anahtar Sözcükler:** Sermaye kaçışı, yerleşik sermaye çıkışı, sermaye çıkışı.

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## INTRODUCTION

One of the most challenging issues for developing countries is to stimulate investment to achieve high growth rates. Economic theory generally suggests that freely moving capital flows can promote investment and growth (see Fischer, 2003; Summers, 2000). After the 1990s, many developing countries have been prescribed to liberalize their capital accounts and followed a number of standard policy solutions in order to attract foreign capital inflows to finance investment as well as their rising debt stocks. However, various studies show that capital flows actually take place in the opposite direction as the residents of these countries move the already scarce capital to the more advanced ones (Lucas, 1990; Alfaro et al., 2008). This process of accumulation of foreign assets by the private sector is labelled "capital flight" since the 1980s and it has come to be viewed as one of the major economic problems in many developing countries.

Capital flight is a concern for capital-scarce developing countries because of four main reasons. First of all, flight of capital reduces domestic investment by constraining savings and can have serious effects on growth and development (Ajayi, 1997). In general, it can be assumed that if these funds are held at home, they can be utilized to reduce the level of external indebtedness and the inherent liquidity constraints in bridging the foreign-exchange gap (Schneider, 2003b). Furthermore, it is feared that the flight of capital from developing countries may send a signal to foreign private investors about the risks involved leading to a decline in, or even a cessation of, private capital flows (Schneider, 2003b). Third, the loss of capital through capital flight erodes the domestic tax base in developing countries[1]. Last but not the least, capital flight is also likely to have adverse impacts on equality, as wealthy citizens evade higher taxation by channelling funds abroad, while the poorer citizens face higher tax rates (Boyce and Ndikumana, 2001).

Because of the above mentioned adverse effects of capital flight on the economies of developing countries, it is important to understand what capital flight means and how it is measured. The aim of this paper is twofold: First, to provide a general framework about the definition and measurement issues of capital flight by bringing together different ways scholars have conceptualized and measured capital flight. Second, to survey some of the selected empirical studies in the literature in order to identify the research gaps and suggest new directions for future studies.

The paper is structured in five parts: Section two reviews some of the conceptual problems related with the definition of capital flight. Section three discusses various methods proposed by different authors to calculate capital

flight. This is followed by section four, which provides a survey of the empirical literature on the determinants of capital flight and on the relation between capital flight with other variables. Section five offers some conclusions.

## 1. CONCEPTUAL ISSUES: NORMAL CAPITAL OUTFLOWS OR FLIGHT INDUCED CAPITAL OUFLOWS?

Capital flight is a complex phenomenon that is difficult to define. For this reason, over the years, different authors have proposed different definitions of capital flight. The biggest conceptual problem, which arises when studying the issue of capital flight is the distinction between 'normal capital outflows' and 'flight induced or abnormal (i.e capital flight)' outflows of capital[2]. Therefore, to distinguish capital flight from normal capital outflows, scholars have employed several criteria based on volume, motive and the direction of the capital flows[3].

In terms of volume, while a "normal" capital outflow suggests investment portfolio diversification, an "abnormal" capital outflow refers to widespread currency speculation, especially when it leads to cross-border movements of private funds that are large enough to affect national financial markets (McLeod, 2002). Capital flight, in this sense, occurs because of the expectation of unfavorable changes in political or economic conditions such as large devaluations, which lead to a loss in the value of the capital. This type of definition does not differentiate capital outflows according to who is performing the activities (i.e. it does not make a distinction between resident or non-resident capital outflows).

Some authors emphasize the motivation behind capital outflows. Dooley (1986) for example, considers the intention for capital outflows and sees capital flight as all resident capital outflows based on the desire to place wealth beyond the control of the domestic authorities. Therefore, as long as capital outflows are reported to the authorities, they are not considered as capital flight. However, when the residents flee capital abroad to avoid taxes or government regulations, this type of capital outflow constitutes capital flight. The problem related with this definition is the difficulty in understanding the motive of the capital outflow since in open economies, residents can always engage in international transactions in the normal course of the business activities.

Capital flows can also be differentiated into legal or illegal flows and capital flight is sometimes associated with "illegal flows". Trade misinvoicing is an important category of illegal capital flows. Exporters may report higher

values of exported goods to obtain subsidies from the government or importers report lower values of imported goods to avoid customs taxes and trade quotes (See Bhagwati et. al., 1974; Gulati, 1987). By doing so, they obtain foreign currency, which they flee abroad. In addition to trade misinvoicing, there are other illegal forms of capital outflows such as money laundering, smuggling and human trafficking etc. However, the nature of these activities makes it difficult to estimate capital outflows associated with these activities.

The authors, who emphasize the direction of capital flows consider the origin of the flows. Kindleberger (1987) for example, makes a distinction between 'normal' and 'abnormal' capital flows and defines capital flight as "an abnormal capital movement that takes place from a country with a higher rate of interest to a country with a lower rate of interest". According to this approach, capital outflows from developed countries are viewed to be the result of portfolio diversification and are not considered as capital flight, while capital outflows undertaken by residents in the developing countries are considered as capital flight because in terms of two gap model of development, the transfer of capital abroad by domestic residents can have various welfare effects.

There are also studies, which argue that capital flight should not be distinguished from normal capital outflows (see World Bank, 1985; Morgan Guaranty, 1986). These studies consider capital flight as a subset of capital outflows. According to this definition, capital flight is one side of a two way flow and capital flight can co-exist with massive inflows of capital. This definition is often called "residual" or "broad" definition of capital flight, which means that items that are not accounted for in officially recorded capital flows are captured in the residual and this estimate gives capital flight.

## 2. METHODOLOGICAL ISSUES: MEASURING CAPITAL FLIGHT

Different definitions of capital flight discussed above lead to different measures. Over the years, the following methods have been proposed in the literature:

1. Residual Method (World Bank, 1985; Morgan Guaranty, 1986)
2. Dooley Method (Dooley, 1986)
3. Trade Misinvoicing Method (Bhagwati, 1964)
4. Hot Money Method (Cuddington, 1986)
5. The Asset Method (Hermes and Lensink, 1992)

These methods can be classified into two groups as "direct" and "indirect" measures of capital flight. The first three methods are called indirect measures, while the last two methods are direct measures, which utilize the data directly taken from Balance of Payments statistics (BOP) or Bank of International Settlements (BIS).

Calculation of capital flight estimates requires direct information about country assets abroad. However, this information is usually very difficult to obtain. Statistics on bank deposits are available from the Bank of International Settlements but these statistics suffer some limitations. The IMF also reports the assets of nonbanks in 33 banking center but it does not distinguish between the official and private sectors. Since the coverage of the direct data does not include all resident flows, indirect methods are used to estimate capital flight (Schneider, 2003b). Now, we will take a look at each of these measures in order.

### 2. 1. Residual Method

Among different measures to identify the magnitude of capital flight, the residual method received more attention and was used in the majority of the studies done on this subject[4]. This method was first introduced by the World Bank (1985). It measures capital flight by comparing the sources of capital inflows (i.e., net increases in external debt and the net inflow of foreign investment) with the uses of capital flows (i.e., the current account deficit and additions to foreign reserves). The discrepancy between these two gives the amount of capital flight. Capital flight according to this measure is estimated as follows:

$$KF_t = \Delta D_t + FI_t - CA_t - \Delta R_t \qquad (1)$$

where $\Delta D$ refers to the change in external debt, *FI* is net foreign investment flows (the sum of foreign direct investment and portfolio equity flows) [5], *CA* is current account deficit and $\Delta R$ is the change in foreign reserves.

Over time, some modifications to this method have been proposed. The Morgan Guaranty Trust Method (1986) excludes the acquisition of short-term foreign assets by the country's banking system and monetary authorities, thereby identifying capital flight as the accumulation of private foreign assets by the nonbanking sector. Capital flight according to this method is measured as follows:

$$KF_t = \Delta D_t + FI_t - CA_t - \Delta R_t - SB_t \quad (2)$$

where *SB* refers to the short-term foreign assets of the banking system and monetary authorities.

Cline (1987) argues that travel, income from tourism and border transactions and reinvested investment income on bank deposits already held abroad should not be considered as capital flight since they are not under the control of foreign exchange authorities. Thus, he modifies Morgan Guaranty method by subtracting these items.

Neither the original residual method nor the proposed modifications discussed above differentiate between the change in the stock of foreign debt as is reported in the World Development Tables and the flow of debt as is reported in the Balance of Payments statistics for the country. This mixing of stock and flow concepts leads to overestimation or underestimation of the amount of the capital flight (Moghadam et. al, 2003). Therefore, Boyce and Ndikumana (2001) proposed a methodology to adjust the long-term debt stock for the fluctuations in the exchange rate by using currency compositions. However, even this method cannot account for fictitious flows such as debt forgiveness, new interest arrears and recently capitalized interest. For example, forgiven or reduced debt would show a nonexistent capital outflow leading to capital flight underestimation. Therefore, a recent modification proposed is to utilize the direct net flow measure to provide a better estimate of capital flight (Moghadam et. al., 2003).

### 2.2. Dooley Method

The Dooley Method aims at distinguishing normal capital flows from abnormal or illegal capital flows. Dooley (1986) sees capital flight as all capital outflows based on the desire to place wealth beyond the control of the domestic authorities. Therefore, he focuses on the stock of privately held foreign assets that do not generate income reported to the domestic authorities. This method calculates the identified capital outflows in the balance of payments accounts. Dooley makes three adjustments to capture reported capital flows. First, he subtracts errors and omissions. Second, he calculates the difference between World Bank data on the stock of external debt and external borrowing flows reported in the balance-of-payments accounts and adds the difference to his estimate of the increase in private-sector foreign assets. Dooley, thus, assumes that the entire difference is private-sector acquisition of foreign assets. The third adjustment is to calculate the stock of external assets by using an international market interest rate. The difference between the two measures of external assets

is the stock of flight capital and difference from year-to year is the measure of capital flight.

$$TKO_t = FB_t + FI_t - CAD_t - R_t - EO_t - WBIMF_t \quad (3)$$

where *TKO* refers to total capital outflows, *FB* means foreign borrowing as reported in BOP, *FI* is net foreign investment flows, *CAD* is current account deficit, *R* is official foreign reserves, *EO* is net errors and omissions (debit entry) and *WBIMF* is the difference between the change in the stock of external debt reported by the World Bank and foreign borrowing reported as in the balance of payments statistics published by the IMF.

The stock of external assets corresponding to reported interest earnings is given by the following equation:

$$ES_t = INTEAR / rus \quad (4)$$

where *ES* means external assets, *INTEAR* is reported interest earnings and rus means *US* deposit rate. Therefore, this specification results in the following measure of capital flight:

$$KF_t = TKO_t - ES_t \quad (5)$$

Although the Dooley method is conceptually different from the residual method, Claessens and Naude (1993) show that in practice capital flight measured according to the Dooley method and the residual method are very similar, since most of the data used for calculation are the same in both cases.

### 2.3. Trade Misinvoicing Method

Some authors use the amount of trade misinvoicing as a measure of capital flight. The estimation of capital flight using residual measure relies on the balance of payment statistics and current account data, which can be inaccurately reported in some countries because of the systematic faking of trade invoices. Therefore, capital flight estimates should also be adjusted for systematic over and underinvoicing of exports or imports by using the techniques introduced by Bhagwati (1964) and Bhagwati et. al.,(1974). Bhagwati et. al (1974) examine capital flight in 28 less developed countries and find that at least 19 of these countries experience underinvoicing of exports, concluding that trade misinvoicing can be an important factor explaining capital flight.

Trade misinvoicing is estimated by comparing country's export and import data to those of its trading partners by using IMF`s Direction of Trade Statistics Yearbook. Importers are assumed to be involved in capital flight when they report higher values of imported goods as compared to the reported value of the same goods by exporters. In turn, the exporters are involved in capital flight when they report lower values of exported goods as compared to the reported value of the same goods by the importers (Lensink et. al.,2002).

Gulati (1987) finds that many developing countries underinvoice exports and underinvoice imports at the same time because of the existence of tariffs, quotes and trade restrictions. He argues that in most of the cases, underinvoicing of imports dominates the underinvoicing of exports and concludes that trade misinvoicing reduces capital flight.

To calculate trade misinvoicing, the first step is to compute export discrepancies with the trading partners as follows:

$$XD_t = PX_t - (X_t * CIF_t) \tag{6}$$

where $PX_t$ is the value of partner countries` imports as reported by partner countries, $X_t$ is exports to other countries as reported by that country and *CIF* is the c.i.f/f.o.b. factor, representing the cost of freight and insurance. A positive sign on *XD* indicates the existence of export underinvoicing.

Import discrepancies with the trading partners (DM) are subsequently computed using the following equation:

$$DM_t = IM_t - (PM_t * CIF_t) \tag{7}$$

where *IM* is the imports from other countries and *PM* is the other countries` exports as reported by those countries. A positive sign on *DM* indicates a net overinvoicing of imports, while a negative sign indicates a net underinvoicing. The total trade misinvoicing is obtained as the sum of export discrepancies and import discrepancies.

$$TTM = XD_t + DM_t \tag{8}$$

### 2.4. Hot Money Method

Another common way to measure capital flight is hot money method, which is developed by Cuddington (1986). He takes a different approach for measuring capital flight and focuses only on short-term speculative capital

flows (hot money) that responds to political or financial crisis, heavier taxes, a prospective tightening of capital controls or hyperinflation. A common practice when measuring hot money flows is to regard the errors and omissions entry in the balance of payments as a measure of private capital flows. The errors and omissions line is the statistical discrepancy in the credit and debit entries in the current and capital account. When surpluses on the current and capital accounts are not matched by an accumulation in reserve assets, a negative value for net errors and omissions results. The negative errors and omissions line is used as a proxy for capital flight.

There have been some criticisms against this method. First of all, there are some problems related with errors and omissions data. Changes in errors and omissions category do not always indicate the existence of capital flight because these changes may be due to the mistakes in compiling data, measurement or rounding errors, unreported imports and problems with methods of currency conversion used to compile accounts. If the errors and omissions is only because of the mistakes in compiling data, it will have a tendency to adjust over years. However, if cumulative errors and omissions show an increasing trend, they indicate capital flight. Moreover, in a world of financial globalization, outflows of capital can not always be considered as capital flight since developing countries can have outflow of short-term capital in the normal course of business activity as well. Finally, as argued by Cumby and Levich (1987), the existence of active secondary markets for long-term assets make long-term and short-term assets close substitutes and help investors react to unfavorable economic conditions by moving capital out of the country via long term financial assets as well as short term assets.

### 2.5. The Asset Method

The asset method is one of the direct measures of capital flight which considers the total stock of assets of non-bank residents held at foreign banks. This is a short-cut measure of capital flight. This measure may be seen as an indication of the minimum amount of assets held abroad, since residents may hold their assets in other forms next to bank accounts such as foreign equity holdings (Lensink et al, 2002). The problem related with this method is that this approach makes the assumption that the nationalities of depositors are reported, which may not always be the case (Beja, 2005).

## 3. REVIEW OF THE EMPIRICAL LITERATURE

Capital flight is an old issue. A number of important episodes of capital flight within Europe and from Europe to the United States were observed since

the early 19th century[6]. Capital flight from Europe to the United States was even discussed during Bretton Woods meetings (see Brown, 1987) and since then it became an important area of interest especially for developing countries, which often lack necessary resources to promote growth and development.

Capital flight was an important topic of discussion during the debt crises of the 1980s as it was argued that capital flight undermined the ability of highly indebted countries to repay their debt[7]. The interest in capital flight waned during the 1990s after many developing countries started to enjoy massive capital inflows, especially due to capital account liberalization. However, the interest in capital flight was renewed during the 1990s, when some developing countries experienced major financial and economic crises, which were accompanied by substantial capital outflows.

Studies on capital flight concentrate mainly on two strands: The literature on the determinants of capital flight and literature on the relation between capital flight and other macroeconomic outcomes such as low rates of growth, increased aid flows, high external debt and financial and currency crises.

### 3.1. Determinants of Capital Flight

Most of the studies on the determinants of capital flight base on two different approaches for explaining capital flight: General investment climate and discriminatory treatment approach. The first approach concentrates on investment climate affecting the attractiveness of source country assets and therefore focuses on portfolio considerations, which suggest that in a world of complete information and little transaction cost, the rates of return of capital would be expected to equalize across countries and markets. In this case, if the returns to capital are higher abroad than at home, this will lead to capital outflows.

Cuddington (1986) emphasizes this approach by employing a standard three-asset portfolio model using domestic financial assets, domestic inflation hedges such as land and foreign financial assets. He defines capital flight as the year to year increases in domestic holdings of foreign financial assets. By using the time series data from 7 Latin American countries, he shows that overvaluation of exchange rates, high domestic inflation rates and foreign lending cause capital flight.

Ketkar and Ketkar (1989) also use a portfolio adjustment model to explain capital flight. They find that push factors are significant explaining the capital flight in Brazil and Argentina and conclude that positive real interest

rates, low inflation rates and mitigating environmental uncertainties help to reverse capital flight.

The approach, which views capital flight in the context of general investment climate has been subject to some criticism. Pastor (1990) points out that "if the investment climate in a country is unfavorable enough to push out local capital, why would savy international bankers invest their own funds in the form of loans?." Lessard and Williamson (1987) argue that the investment climate perspective cannot explain the simultaneous movement of capital into and out of the country. Therefore, some economists tried to explain this two-way flow by the discriminatory treatment perspective. According to this approach, differential treatment of domestic and foreign capital in terms of taxation, foreign exchange guarantees and priority in the event of a financial crisis lead to capital flight. If domestic policies favor nonresidents' investment over residents' investment, domestic capital holders can pull out their capital and bring it back in the guise of foreign investments or lend to their government from abroad causing a situation called round-tripping of capital.

Khan and UlHaque (1985) use this approach by employing a standard intertemporal optimizing model of external borrowing and investment. They show that developing countries borrow until risk-adjusted marginal returns are equalized. Foreign investors lend to the country because foreign debt may not be repudiated. However, the risk of expropriation of the domestic firm and its debt obligations without compensation offered to domestic owners or the risk of bankruptcy in the home country encourage capital flight and lead to round tripping of capital. In this case, capital flight and foreign borrowing occur simultaneously.

Dooley (1986) considers the differences in the guarantees given by governments to foreign and domestic investment. He states that the risk of default is the main concern for nonresidents, while inflation and exchange rate risk are more important for residents. However, foreigners face less risk because they are often able to get their claims in foreign currency or have implicit or explicit guarantees. thus, domestic investors facing asymmetric risk invest abroad leading to capital flight.

Pastor (1990) investigates the determinants of capital flight in eight Latin American countries between the years 1973-1986 and concludes that high inflation rates, overvaluation, increase in the difference between the yield on U.S. and domestic financial assets can lead to capital flight.

The empirical literature on the determinants of capital flight also examines the effects of non-macro variables such as political risk factors on

capital flight. Fatehi (1994) investigates the association between capital flight and variations in political stability in 17 Latin American countries to deduce that political instability contributes to capital flight.

Hermes and Lensink (2001) examine the cross-sectional relationship between political risk and capital flight for a large set of developing countries. They surmise that no matter how capital flight is defined or measured, political risk factors do matter. Table 1 reviews the results of selected empirical studies on the determinants of capital flight. The results indicate that the main causes of capital flight are overvaluation of exchange rates, high domestic inflation, low domestic interest rates and political problems. One important point which is easily seen on the table is that most of the studies consider capital flight as Latin American problem.

**Table 1. Selected Empirical Studies on the Determinants of Capital Flight**

| **Authors** | **Capital Flight Measure** | **Data Sample** | **Econometric Method** | **Results** |
|---|---|---|---|---|
| Cuddington (1986) | Hot Money | 7 Latin American Countries 1974-1984 | Time series analysis | Overvaluation of exchange rate, high domestic inflation, foreign lending cause capital flight. |
| Dooley (1986) | Dooley Method | 5 Latin American Countries 1973-1986 | Time series analysis | Inflation and exchange rate risk lead to capital flight. |
| Ketkar and Ketkar (1989) | Hot Money | 3 Latin American Countries 1977-1986 | Time series analysis | Low domestic interest rates, high inflation rates, and environmental uncertainities result in capital flight. |
| Pastor (1990) | Residual Method | 8 Latin American Countries 1973-1986 | Time series analysis | Accelarating inflation, overvaluation, increasing tax rates encourage capital flight. |
| Fatehi (1994) | Residual Method | 17 Latin American Countries | Stepwise multiple regression analysis | Political problems lead to capital flight. |
| Hermes and Lensink (2001) | Residual Method | 84 LCDs 1971-1991 | Cumulative distribution functions | Political risk factors matter. |

### 3.2. Association of Capital Flight with Other Variables

There are various studies which analyze the relationship between capital flight and other variables. One of these is the linkage between capital flight and external debt. In the seventies and eighties, it was observed that while the public sectors of many developing countries were accumulating large external debts, the private sectors of those same countries were accumulating large external assets (Alesina and Tabellini, 1989). As a result, a huge literature emerged analyzing the relation between external debt and capital flight as it was argued that capital flight undermined the ability of highly indebted countries to repay their debt. Using a general equilibrium model in which different government types alternate in office randomly with conflicting distributional goals, Alesina and Tabellini (1989) state that uncertainty about which group will be in control in the future and thus uncertainty about future fiscal policies is one of the main reasons for the over-accumulation of public debt and private capital flight.

The relationship between debt and capital flight has been controversial in the literature since both direct and indirect linkages have been considered. Some studies on this subject reveal that there is a two-way relation between external debt and capital flight. These studies distinguish between debt-fueled and debt-motivated capital flight. In terms of debt-fueled capital flight, the burden of debt servicing and the possibility of a default on debt provide signals for increased risks and provide a motivation for capital flight. Boyce (1992) finds evidence for debt-motivated capital flight by using the time series data from the Philippines between 1962 and 1986 and suggests that foreign borrowing causes capital flight by contributing to an increased likelihood of debt crisis, worsening macroeconomic condition and the deterioration of general investment conditions.

Eaton (1987) argues that the expectation of increased tax obligations created by the potential nationalization of private debt generates capital flight. Ize and Ortis (1987) also show that when fiscal rigidities create difficulties for servicing foreign debt, private capital flight is encouraged by foreign borrowing since there is an expectation of higher domestic asset taxation in order to service future debt. Foreign borrowing provides the resources for channeling private capital abroad as well.

Boyce and Ndikumana (2001) examine 30 sub-Saharan African countries and show that funds borrowed abroad are reexported as private assets. By comparing cumulative capital flight with private net external assets, they conclude that Sub-Saharan African countries are net creditor vis-a -vis the rest of the world. In the case of capital flight driven debt, capital flight forces governments to borrow from abroad since capital flight decreases national

resources by lowering domestic saving and investment. In this case, capital flight provides the resources to finance loans to the same residents who export their capital, which leads to a situation called round tripping or back-to-back loan, motivated by the desire to obtain government guarantees on foreign borrowing.

The relationship between external debt and capital flight gave rise to discussions regarding debt relief initiatives. The efforts of the donor community to increase savings in developing countries may be ineffective if capital flight results in a loss of scarce domestic savings. Therefore, if poor countries are to benefit from debt relief initiatives, it is important that capital flight does not compromise any benefits stemming from such initiatives (Cerra et. al, 2008). In this regard the legitimacy of external debt is discussed in the literature. Pastor (1990) argues that capital flight impedes a resolution of the overall debt problem, because the continued extension of new credit or debt relief is counterproductive when a high percentage of the new resources leave the country.

Cerra et. al.(2008) study 134 developing countries over a 32 year time period. Their panel data estimates for capital flight indicate strong evidence of the revolving door relationship between borrowing and flight. They find evidence for debt-fueled capital flight, as well as a financing need channel working in the opposite causal direction. They argue that the results have suggestive implications for debt relief and foreign aid initiatives. By reducing prospective taxation to finance debt repayments, relief may reduce capital flight, and thereby leverage the impact of such assistance. In addition to the debt-capital flight linkage, they investigate the role of institutional quality and argue that weak institutions lead to capital flight.

Kant (1996) explores if there is a relationship between foreign direct investment and capital flight similar to the relation between capital flight and external debt. He finds that FDI inflows are always associated with a reduction in capital flight.

Economists analyzed the effect of past capital flight on the economy as well. Countries that had high levels of capital flight in the past are likely to continue experiencing capital flight in the future because of the fact that capital flight could be habit forming, making investors unlikely to respond rapidly to any improvement in the investment climate (Boyce and Ndikumana, 2001).

Some economists focus on the stock of capital flight rather than using annual flows. Cline (1995) estimates the stock of flight capital for six Latin American countries and the Philippines, and then compares it with the stock of

some liquid domestic financial assets and estimates the proportion of total real wealth which is held abroad.

Collier et. al. (2004) investigate the relationship between aid and capital flight by employing a large panel data set over 1970-1998 and find that increased aid can decrease capital flight and help capital repatriation.

Le and Rishi (2006) consider the role of corruption in impelling capital flight for 69 countries over 1995-2001 and conclude that advocating good governance by combatting corruption can prevent capital flight.

One of the areas current literature does not provide enough explanation is the link between capital account liberalization and capital flight. Lensink et. al.(1998) examine the effect of financial liberalization on capital flight in nine African countries for the period 1970 to 1991 and find that financial liberalization policies are useful to reduce capital flight in these countries. By conducting case studies of capital flight from several developing countries, Epstein et al. (2005) conclude that in the age of financial liberalization, capital flight, far from disappearing, has in fact remained high and even increased. Schneider (2003a) uses data from twelve countries to examine the relation between capital flight and capital account liberalization and finds that capital movements take place with and without capital controls and liberalization does not always lead to repatriation of capital.

Another gap in the literature is that there is no study regarding the effect of capital flight on the real economy in general and on the domestic savings and investment in particular. There are only a few studies investigating the effects of capital flight on financial markets and on the economic growth (Kadochnikov, 2005; Loungani and Mauro, 2000). The assesment of the relation between capital flight and domestic investment is very important for emerging markets to implement necessary policies to reduce capital flight.

Table-2 summarizes the main findings of selected empirical studies on the relationship between capital flight and other variables. We observe three issues: First of all, we see that most of the studies utilize the residual method. Secondly, the majority of studies use panel data sets, and finally there is no study exploring the effects of capital flight on growth, saving and investment.

**Table 2: Selected Empirical Studies on the Associations of Capital Flight with Other Variables**

| Authors | Subject | Capital Flight Measure | Data Sample | Econometric Method | Results |
|---|---|---|---|---|---|
| Boyce (1992) | Capital Flight and Debt | Residual Method | Philippines 1962-1986 | Time Series | Foreign borrowing causes capital flight. |
| Boyce and Ndikumana (2001) | Capital Flight and Debt | Residual Method | 25 Sub-Saharan African countries 1970-1996 | Cross-sectional Analysis | Linkages between capital flight and foreign borrowing exist. |
| Cerra et.al. (2008) | Capital Flight and Debt The role of institutions | Residual Method | 134 developing countries 1970-2001 | Panel Data Regression | Evidence for debt-fueled capital flight. Institutional quality affects capital flight. |
| Kant (1996) | Capital Flight and FDI | Cline Method Dooley Method Hot Money Method | 1974-1992 All developing countries | Contemporaneous Correlation, principal component analysis | FDI inflows reduce capital flight. |
| Demir (2004) | Capital Flight and Debt | Residual Method | Turkey 1974-2000 | Time series | Bi-directional relationship between capital flight and debt. |
| Lensink et.al. (1998) | Capital flight and financial liberalization | Residual Method | 9 African countries,1970-1991 | Cross-section | Financial liberalization policies reduce capital flight. |
| Kadochnikov (2005) | Effect of capital flight on interest rate differential | Residual Method | Russia 1998-2006 | Time series | No effect of capital flight on interest rate differential. |
| Collier et.al (2004) | Capital Flight and aid flows | Residual Method | 48 Non-OECD countries | Nonlinear Estimation | Aid reduces capital flight. |
| Le and Rishi (2006) | Corruption and Capital Flight | Residual Method | 69 countries, 1995-2001 | Panel Data Regression | Corruption has a positive impact on capital flight. |

## CONCLUSION

In this paper, we provide a review of the theoretical and empirical literature on capital flight. First of all, we examine some of the conceptual and methodological problems regarding the meaning and measurement of capital flight. Various meanings have been attributed to this concept based on the distinction between normal and abnormal capital flows. Our review suggests that the majority of the studies done on the subject label capital flight as foreign asset accumulation by the private sector of a capital scarce developing country. In terms of the measurement techniques, different papers have utilized different approaches to estimate the magnitude of capital flight. However, the residual method seems to be the most commonly used method by the academic community in recent papers.

Another goal of this review of the literature on capital flight is to identify the research gaps in the existing literature. Our review suggests that the gaps are numerous, and forms an agenda for future research. One important gap is the lack of country specific empirical analyses. Most of the studies have been conducted for a panel of countries, which assume that the countries in the sample are homogenous. However, country-specific characteristics can change the analysis and the results significantly. Therefore, more case studies on this issue should be conducted. Furthermore, most studies treat capital flight as a Latin American or African problem. Capital flight is prevalent in many developing countries. Thus, the scope of the studies should be enlarged to include other countries as well.

There are also problems with the estimation of capital flight figures used in some studies. Most of the studies which utilize the residual method use change in the stock of external debt data. Using the stock concept can lead to overestimation or underestimation of capital flight since capital flight estimates calculated by this method do not capture currency valuation effects and debt forgiveness. Thus, these studies must be revisited by using a net flow measure approach.

Another important gap is that while there has been much research done on the causes of capital flight, there has been little empirical research done on the effects of capital flight on the economic performance. Capital flight can have adverse effects on the economy, therefore these potentially harmful impacts should be empirically analyzed. More specifically, the impact of capital flight on saving, investment and growth remains unanalyzed. Only after these effects have been understood and tested empirically, it is possible to discuss the necessary policy measures to prevent capital flight.

In conclusion, there is a rich agenda for researchers interested in studying the phenomenon of capital flight. In addition to filling the above listed gaps in the literature, older results must be reevaluated with comprehensive data sets and new econometric methods.

## NOTES

[1] In a Briefing Paper entitled The Price of Offshore published in March 2005, the Tax Justice Network estimated that $255 billion of taxes is being evaded each year on the estimated $11.5 trillion dollar of flight capital. That $255 billion annually is enough to cover all of the financing needs of the UN`s Millennium Development Goals.

[2] The most common definition of "normal" and "abnormal" capital flows in the literature is as follows: While normal capital flows represent portfolio decisions undertaken to exploit favorable returns to capital, capital flight represents a decision to take capital out to avoid the control of domestic authorities.

[3] For a detailed discussion of the different definitions of capital flight the reader is referred to Cumby and Levich (1987) and Schneider (2003a).

[4] The other indirect measures are Dooley Method (1986) and trade misinvoicing method proposed by Bhagwati (1964).

[5] Following Balance of Payments notational convention, 'net' flows means the net of foreign residents direct investment or portfolio investment into the country and domestic residents' direct or portfolio investment abroad. An increase in foreignors' investment (an inflow of capital) has a positive sign, while an increase in domestic residents' investment (an outflow of capital) has a negative sign. Net FDI or net portfolio flows is the sum of these two figures.

[6] See Kindleberger (1965) and Brown (1987). Brown (1987) examines the episodes of capital flight and lists four waves of capital flight from Europe to the United States and argues that the USA became a huge recipient of refuge funds for the first time in the history of capital flight. The first wave coincided with the Munich crisis, the second followed the German occupation of Prague, the third came in the wake of Nazi-Soviet Pact and the fourth came following Britain's and France's rejection of the Nazi peace offer.

[7] See Lessard and Williamson (1987) for a detailed discussion of the relationship between capital flight and external debt.

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