

Determinants Of Capital Flight And Its Impact On Economic Performance: A Study Of Developing Economies

Farah Nasreen, Dr. Ashfaq Ahmed Mirza, Dr. Abdul Rehman

Abstract

Capital flight imposes a great danger to the developing economies by lowering their economic activity, devaluing the currency, and hindering growth. This paper contributes to the literature by investigating the determinants of capital flight of developing economies. Determinants are studied as indices, and these indices are calculated by using the Arithmetic Mean approach. There is a two-step model; in the first part, determinants are discussed, and in the second part, capital flight is used as an independent variable, and its impact on economic performance is measured in 57 Developing Economies. GMM (Generalized Method of Moments) is used for the determinants of capital flight, and panel GLS (Generalized least square) is used to check the impact of capital flight on economic performance. Macroeconomic variables (external debt, inflation, exports, interest rate, and exchange rate) are also part of the study with four indices as determinants (Country Risk Index, Economic Freedom Index, financial inclusion index, and Governance institution and corruption index). Results suggested that all included indices are significant along with all macroeconomic variables. Country risk, external debt, and exports have a negative coefficient, and others have a positive coefficient value. Capital investment, foreign direct investment, and Gross domestic product are used as proxies of economic performance. Results of GLS have shown there is a significant and negative impact of capital flight on economic performance. Capital flight is measured by using the residual methodology.

Keywords: Capital flight, financial inclusion, country Risk, Economic Freedom, Governance institution and Corruption index, Exchange rate, External Debt, Interest rate, Inflation, Exports, Generalized Methods of Moments, and Generalized Least Square.

Introduction

Because of the debt crisis and the subsequent fall in capital inflows from industrialized countries, officials have been concerned about the issue. Due to the loss of resources needed for domestic investment, capital flight has been considered a growth inhibitor. Also, many suggest that reversing these capital outflows could help solve a debt issue. Capital flight has existed as long as money traveled across the national borders, but this concept attracted widespread attention in the early eighties. Although Capital flight is not a new issue, it was documented by Adam Smith in his very famous book "The wealth of nations" two centuries ago. He described the concept of capital flight as, "The proprietor of stock is necessarily a citizen of the world, and is not necessarily attached to any particular country. Consequently, he would be apt to abandon the country in which he was exposed to a vexatious inquisition, to be assessed to a burdensome tax, and would remove his stock to some other country where he could either carry on his business or enjoy the fortune more at his ease". Capital flight has been a cause of concern for policymakers since the financial crisis and the subsequent reduction in capital inflows from developed countries. Capital flight has been considered as a restraint on economic progress since it means lost domestic investment resources. Also, many feel that reversing capital outflows could help solve a debt crisis. Capital flight harms economic progress and is a significant worry for developing countries: income distribution, illegal activities, macroeconomic stability, welfare, and other developing activities. The concept of capital flight has attracted widespread attention in the early nineties, especially in Latin America and sub-Saharan African countries, but Asian countries have received less attention because of the small amount of debt outstanding (Zheng and Tang, 2009). However, most countries face capital flight due to corruption, institutional problems, bad governance, and unstable political and socio-economic conditions (Osei-Assibey et al., 2018). In the last five decades, this issue of capital flight has received scholarly attention, but on the whole, researchers have not reached an agreement on how to define it beyond the general perception. The capital flight usually refers to the money leaving the developing economy, to be invested elsewhere, usually a developed economy. Clearly not all money which is going abroad is capital flight but it can be the transaction money, day to day outflow, simple investment from the country which is not facing any crisis (Owens, 2017). The concern of the research is the illegal and illicit flow of capital and assets, usually from the nonbank private investor. Licit or legal transaction does not cross-government control and avoids taxes, but it follows all the rules made by the government). The capital flight

goes beyond the boundary using different sources, and these sources further describe the concept deeply. Capital flight comprises of irregular short-term/speculative outflow, which is called hot money. It is fueled by capital holders and causes high risk politically, economically, high inflation, taxes, more government control, and currency devaluation (Cuddington, 1987). Considering the leading causes and reasons to study capital flight, this study considers possibly six reasons to reconsider capital flight. The first is to examine the role of governance, institutions, and corruption on capital flight. Institutions, especially financial institutions, play an essential role in capital flight; they facilitate investors by relaxing the transfer policies or sometimes by using unfair means. These unfair means lead to corruption and also indicate the existence of bad governance. The capital flight resulting from the offshore financial economy is fundamentally traceable to poor governance, institutional negligence, and corruption (Osei-Assibey et al., 2018). The second reason is to shed some light on the relationship between capital flight and the Country risk index. Risk usually refers to uncertainty regarding investment and government policies. It encompasses a wide range of factors, e.g., expropriation risk, inflation risk, tax fluctuation risk, and changing government reforms. Economic, social, and political risks are the factors that shape up the decision of an investor about the ideal destination for his assets (Le and Zak, 2006). Terrorism is a part of country risk; if terrorism exists in a country, an investor never feels safe about his investments and assets. Some studies have shown it as a most disturbing element for the investors, and they shift their assets abroad by any means (Efobi and Asongu, 2016), (Asongu et al., 2019) and (Hyder et al., 2015). Third, the reason is to analyze the association of Economic freedom and capital flight. There are Different aspects of Economic freedom which can be game-changer for an investor to decide about the destination of his assets. Economic freedom means freedom of trade and freedom of fiscal policies, business, and investment. Trade and financial liberalization are some of the main aspects of economic freedom, and several studies in the literature show their substantial impact on capital flight (Lensink et al., 1998) and (Yalta et al., 2012). Fourth, the reason is to study financial inclusion with capital flight. Financial inclusion is defined as the financial involvement of individuals in the domestic economy and the involvement of the domestic economy in globalization. Financial inclusion is closely related to financial development and financial integration (Memdani et al., 2013). Different studies have shown different approaches to measure financial inclusion; usually, it is measured from banks' perspectives. However, financial inclusion is a broader concept, and it can be measured with financial literacy, globalization index, and illicit economic activities alongside licit economic activities. Financial literacy is about the banks; Banks are widely studied with financial inclusion and capital flight separately and found to be very important for both, yet proves that institutions play a vital role in sending the capital abroad (Heggstad and Fjeldstad, 2010) and (Rosengard and Prasetyantoko, 2011). Globalization is an essential factor for measuring capital flight in the present technologically advanced era, and it is generally seen as financial liberalization and free trade. So, as a part of financial inclusion, globalization can be taken for more mixed results. The fifth reason is the consideration and importance of macroeconomic variables in capital flight. All Theories of capital flight indicates the importance of macroeconomic variables e.g. interest rate, exchange rate, external debt and inflation. Macroeconomic variables proved to be important In the long run for the capital flight hence are the main players (Hunjra et al., 2018) and (Imran et al., 2018). Economists have devoted much greater attention to capital flight than the financial analyst even though direct linkage has been found in any country's capital flight and financial performance (Edwards, 2001). The sixth and last reason is to sort out the most suitable way to measure capital flight for our sample of 90 countries divided into two main categories of developed and developing. In short, scholars are interested in capital flight for several reasons. Lessons from the past are still vital today, yet new dimensions to the same challenges necessitate new lessons.

Problem statement

Capital flight in developing economies is hindering growth and threatening financial development with negative consequences. Proponents of capital flight argue that it has stopped economic growth because it involves the exportation of savings and investment (Deppler & Williamson, 1987). The economic consideration of the resident to hold their assets abroad is mainly because of the lack of confidence in the domestic economic and financial situation. Many studies analyzed capital flight and its causes by not distinguishing between domestic and foreign investors. They pointed out important factors, e.g., inflation,

exchange rate, GDP, External debt, institutional transparency, Governance, interest rate, and corruption which are essential in determining capital flight for developed and developing economies (Cuddington, 1987), (Ndikumana & Boyce, 2011), (Asongu & Nwachukwu, 2016), (Efobi & Asongu, 2016), (Ahmad & Sahto, 2015), and –(Gunter, 2017). Therefore capital flight has become an essential concern for both developing and industrialized countries. Both private and public entities cause capital flight. They choose to save abroad because of macroeconomic and political unpredictability, a less established financial system, and a more significant rate of return differentials (Ndikumana & Boyce, 2011). While; because of corruption, institutional negligence, bad governance, and country risk, public authorities embezzle funds and transfer them to overseas banks (Kollamparambil & Gumbo, 2018). Capital flight is not the only problem for developing economies, but it has also become a severe concern to developed economies. After the global financial crisis, capital controls were increased while exchange controls were intensified. However, capital flight continued in the first half of 1999 (about 11.8 billion\$) showing an increase with respect to previous years. Capital flight keeps on increasing with every passing year imposing a very high burden on already fragile economies. So, agenda of capital flight with respect to both developing and developed countries need attention at both academic and practical level to deal with this bolt from the blue. By keeping in view the above points, this study aims to analyze the determinants of capital flight in 57 developing countries moreover, the impact of capital flight on economic performance.

Research questions

The above-discussed problems of developing countries have raised plenty of research questions that will concern this study. The research questions are divided into two main categories; primary questions and secondary research questions. The primary research questions are:

- 1- What are the determinants of capital flight in developing economies?
- 2- What is the impact of capital flight on the economic performance of developing economies?

The research questions which are considered secondary yet essential in this study to understand the issue of capital flight are as under;

- 1- What are the different methods available for measuring capital flight?
- 2- What are the legal and preventive measures taken by developing economies to minimize and reverse capital flight?

Significance of the study

Capital flight has severe consequences for both the developed and developing economies and, even then, a significantly less addressed area in academics concerning developed countries. Capital flight is essential for developing economies for at least three reasons. First, capital is scarce in developing countries, so capital flight contributes to the increasing scarcity of capital. Second, capital flight is a negative signal to the entire world of investors because it creates uncertainty and risk. The twin goal of growth and development will become impossible because economic policies become more challenging to implement, and people's rising social condition becomes a heavier burden to address (Schineller, 1997). Third, economic justice cannot be practiced in external debt, benefitting only a few (Siddiqui & Malik, 2001). This study is planned around making the country's economy strong; in this regard, the study contributes to both areas of policy-making and literature in several ways. Initially, the study will try to identify countries where capital flight is more, which helps policymakers formulate effective policies in getting the country's capital back. The next step is to analyze the antecedents of capital flight. Although antecedents of capital flight are discussed many times in literature for developed and developing economies, this study looks at the determinants with a different approach. It includes a large number of factors that further will be converted to composite indices and will be regressed against capital flight for multidimensional results; This is an addition to the existing literature because determinants have never been studied in that way. This study will shed light on a possible link of capital flight with "corruption, institutions, and governance" developing economies. Furthermore, introducing a new index, "Financial inclusion," will be tested against capital flight, enhancing the body of knowledge. This study will also assess the strength of "country risk" and its impact on a capital flight; this association will further widen the vision of policymakers to deal with capital flight. Moreover, the study will

discuss the "Economic freedom index" and its relationship with capital flight; highlights relevant areas that need policymakers' attention. Several Macroeconomic variables are also included and analyzed with capital flight yet give a guideline to policymakers and academicians to understand the essential macroeconomic factors affecting capital flight. After exploring the determinants of capital flight, a cross-country analysis will be done between both clusters to find out essential determinants for developed and developing economies, respectively, so it will be easy for the politicians and policymakers to avoid capital flight. Lastly, this study targets to explore the impact of capital flight on a country's performance, which will also help policymakers understand how they can improve the performance of a country through policy-making.

Literature review

In practice, the issue of capital flight has been recognized after 90's financial crisis, and some severe steps against it have been taken in the last 20 years, but in academia, Capital flight is still a less explored or neglected field, particularly in finance (Chang et al., 1997). The available literature on capital flight is mainly on its methodologies and determinants. A very few studies attempted to capture its determinants by making indices. This trend is the lack of reliable data due to the hidden nature of this phenomenon (Cuddington, 1986). Capital flight has been regarded as a significant factor contributing to the mounting foreign debt problems and inhibiting development efforts in the third world (Cuddington, 1986). Most analysts have also attributed and mentioned the sluggish growth of economies due to capital flight. There are some consequences of capital flight that lead the countries in another direction than desired. As capital departs the country, less capital is available to invest. At the same time, it suggests a decline in FDI. Investors are looking to invest abroad and withdrawing funds. Not a big deal if such investments have already been made. Business A, for example, could sell its factory in China and withdraw its capital. As a result, the Chinese economy has benefited. However, we must remember that capital flight implies investor apprehension. So, money that could be used for investment moves abroad during capital flight, but it never enters the country. Profits fall when a country's capital declines. As a result, when capital leaves a country, so do the taxes. Long term, capital flight reduces economic investment, limiting the creation of jobs, industries, and other productive assets. Without the same investment volume, a country's economic potential can diminish. The economy would have been larger if capital had stayed in the country. That means more jobs and increased productivity. Fewer people are working, and a smaller economy means less tax revenue from income and corporate taxes. The term "capital flight" refers to a drop in demand for a country's currency. For example, to invest in China, a US investor must first purchase the Chinese Yuan. However, the US investor will want to convert their Chinese Yuan into US dollars during the capital flight. It signals to the exchange markets that demand for the Chinese Yuan is waning, and demand in the US increases. As a result, the Chinese Yuan begins to depreciate against the US dollar. As capital leaves the country, domestic firms and governments have fewer options for borrowing. Investors who are willing to lend are few and far between. To attract investment, governments must begin paying higher interest rates. For example, investors fled in droves from Greece during the 2012 crisis, leaving the Greek government without a line of credit. Interest rates on government debt rose quickly in response to the increased risk. At the same time, the debt grows due to having to pay higher interest payments on the debt. Literature on the capital flight maintained that a large amount of the capital flows into the developed world from the developing countries, and despite measurement problems, is having adverse effects on developing countries (Nölling, 1986), (Ashman et al., 2011). Most of the literature is focused on the concept, measurement, methods (Cuddington, 1986), and determinants of capital flight (Beja and countries, 2005, Beja Jr, 2005, Cerra et al., 2008). However, indices are never developed to check their impact on the

Concept of capital flight

Capital flight is a confusing concept that has been given several meanings. The capital flight usually occurs when returns on domestic assets are uncertain or risky. So the residents take their money and flee (Lensink et al., 2000). Normal capital outflow and abnormal capital outflow needs to be distinguished, although empirically, it is challenging. Since regular outflows are based on the consideration of portfolio diversification of residents and activities of domestic, commercial banks aiming at acquiring or extending foreign deposit holdings (Deppler & Williamson, 1987). Undoubtedly, capital flight remained an unspoken

topic for many years, but the financial crisis of the '90s has made this topic important for developing and developed economies. Capital flight is a synonym of an economic imbalance created by the debt problem (Gulati, 1988). There are three main methods to estimate capital flight discussed in the previous literature, e.g., the balance of payment method, Cuddington approach, and Dooley measures. Several studies estimated capital flight by comparing the origins of capital inflows. If the sources exceed the uses of inflows, the difference is termed capital flight. It is a so-called residual method, and it is widely used in the literature. –(Gunter, 2004) have used this approach to estimate capital flight from China. Another study has used this method and then checked capital flight with government uncertainty regarding policies (Hermes and Lensink, 2001). This method has avoided separating the normal and abnormal capital outflow, but it has taken every private capital outflow as a capital flight. Several variations have been made to this World Bank approach of capital flight (Lensink et al., 2000). This study will opt for this estimation method due to its acceptability and ease. The second estimation method name is "hot money measure," which is called the Cuddington approach. It measures capital flight by adding net errors and omissions and non-bank private short term capital outflows (Cuddington, 1986). This measure reflects the idea that capital flight goes unrecorded due to criminal matters of these capital movements. It is argued that unrecorded capital investments appear in the net error and omissions. Moreover, by concentrating on short-term flows, medium and long-term flows are excluded, which are considered normal according to these authors (Gibson and Tsakalotos, 1993). The capital flight measured by this approach is short-term, but the residual method gives a long-term view of capital flight (Kant, 1996). Dooley proposed the third approach to capital flight estimation, measuring abnormal and illegal capital outflows. Dooley defines capital flight as the money kept outside the country to avoid government control, excluding regular outflows. Consequently, Dooley measures; include all capital outflows that do not receive or register interest payments. The literature says a similarity between Dooley and the residual method of capital flight because Dooley measures partly based on residual/Morgan method. Many studies have used Dooley measure to estimate capital flight. (Anthony and Hughes Hallett, 1992), (Schineller, 1997) and (Chang et al., 1997). This study will use the residual methodology to measure capital flight.

Capital flight in developing countries

Heavenly indebted emerging countries must face the fact that capital has abandoned them. Their people, especially political elites, are attempting to save their money. Some factors for capital flight from developing economies include Taxation, exchange rate, risk, and security. Because capital is scarce, the impact on underdeveloped countries is more significant. A \$1 billion investment is significantly more vital in Vietnam than in the US. Capital flight has a substantial economic impact, particularly on developing countries. A significant capital flight will harm any economy. In general, less capital is available for investment. Investors may sell their debt and leave, lowering credit availability. They could potentially sell assets to domestic bidders and profit. In addition, a currency overvalued and subsequent devaluation speculations can cause a currency flight. This money does not have to be invested abroad. Many research evaluated capital flight by comparing capital inflows. As a result, many local bank deposits are in local currency. There is a conflict of interest if there is a disparity in exchange rates between commercial and capital market operations. M2M capital exports are commonly discriminated against. If the importer overcharges, the distinctions between commercial and capital operations blur. For example, if domestic prices are fixed low, and a marketing board has a monopoly, smuggling is used to avoid high export charges (Ayadi, 2008). It occurs if capital yields less at home than overseas. Negative real interest savings prefer positive real interest international accounts. Investing in tax havens like the Netherlands Antilles is also attractive to investors. Increased risk due to high taxes, price controls, import restrictions, and political upheaval; low or uncertain domestic rates encourage potential investors to look elsewhere. Individual price regulations can hurt domestic investment when inflation is high. This necessitates regular price modifications. Inaction by the authorities will result in significant losses for businesses. Inflation or price controls can distort prices, making accurate planning impossible. Foreign investment is often perceived to be less hazardous (Rahman, 2019). Finally, capital exports are driven by asset protection. Rather than yield considerations, the security motive or portfolio concerns frequently come into play. Finally, residents invest abroad for political reasons, including fear of expropriation (Schineller, 1997).

Data and methodology

Data of 57 developing countries are included in the analysis from the year 2001-2019. A balanced panel GMM is used for the analysis of determinants of capital flight in step 1. The functional form is given below;

$$CF_{i,t} = \sigma_0 + \sigma_1 CF_{i,t} + \sigma_2 GIC_{i,t} + \sigma_3 CRI_{i,t} + \sigma_4 EF_{i,t} + \sigma_5 FI_{i,t} + \sigma_6 IR_{i,t} + \sigma_7 ER_{i,t} + \sigma_8 EXP_{i,t} + \sigma_9 EXD_{i,t} + \sigma_{10} INF_{i,t} + \sum_{h=1}^{10} \delta_h W_{ME} + \eta_i + \xi_t + \varepsilon_{i,t}$$

The strategy of GMM, which will be used here, is adapted from (Asongu et al., 2019). In step 2 on analysis, the impact of capital flight is checked on the economic performance of developing countries, and for that GLS (Generalized Least Square) technique is used; functional form is given below;

$$EP_{it} = \beta_1 + \beta_2 KF_{it} + \mu$$

Model of the study

Step 1:

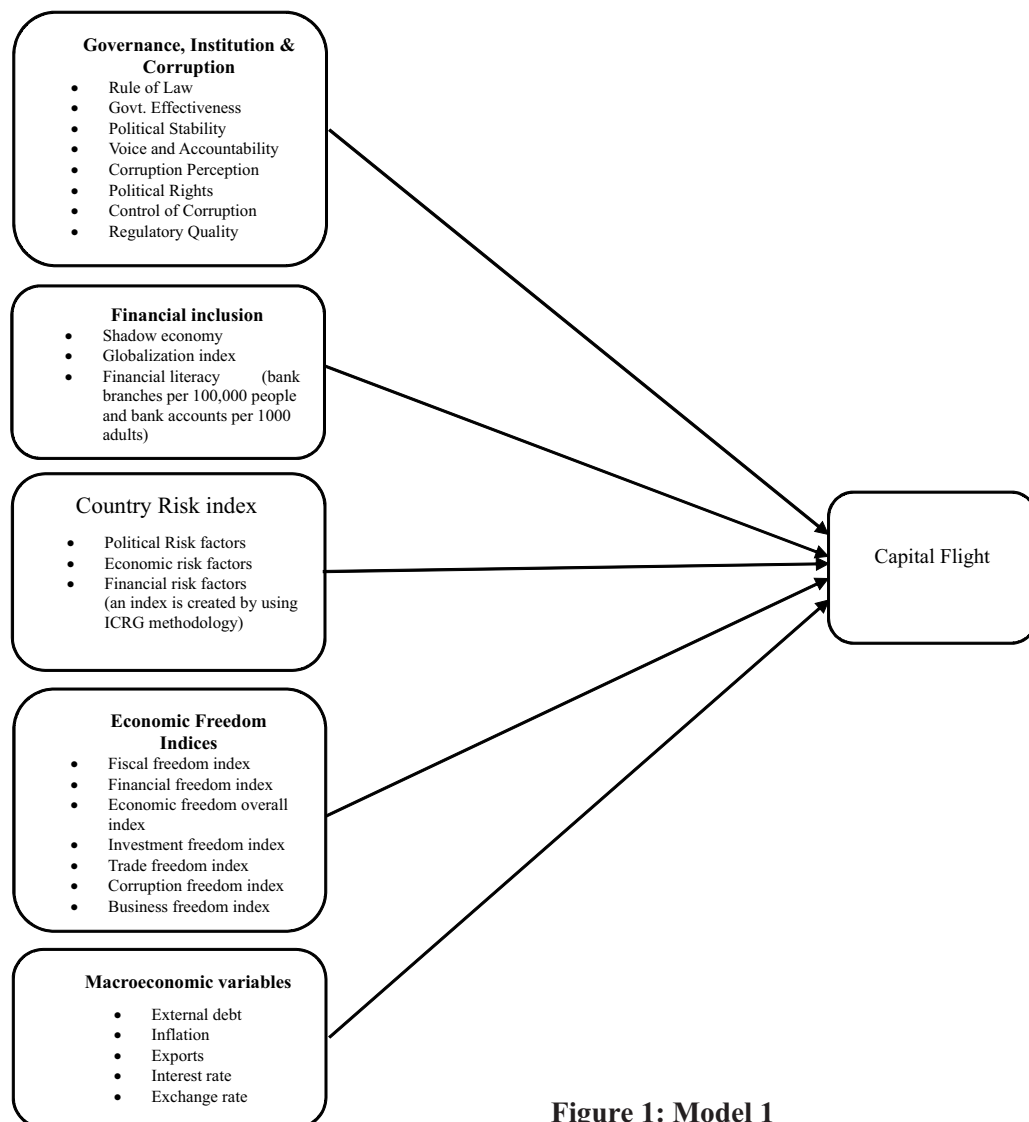


Figure 1: Model 1

In the first model Dependent variable is capital flight,

Dependent variable: capital flight

Arriving at the acceptable definition of capital flight is as difficult as measuring it. Perhaps the best definition of capital flight is to describe it "as speculative short term capital outflow based on political and economic apprehension in the home country." There are three methods to calculate capital flight, but the study chose to

estimate capital flight through the residual method. The World Bank introduced the residual estimation method, and different scholars have made different changes at different times. Using this formula, we can calculate Capital flight, which is previously used by (Ahmad & Sahto, 2015).

$$KF_{it} = \Delta ED_{it} + NFDI_{it} - \Delta CAD_{it} - FR_{it} \dots \dots \dots (1)$$

Where,

ED= External debt

NFDI= Net foreign direct investment

CAD= Current Account Deficit

FR= Foreign reserves

External Debt:

"Total external debt stocks to gross national income. Total external debt is debt owed to non-residents repayable in currency, goods, or services." (WDI)

Foreign Direct Investment:

Current Account Deficit:

"The current account balance is a sum of net exports goods and services, net primary income, and net secondary income." (WDI)

Foreign Reserves

"Total reserves comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and foreign exchange holdings under the control of monetary authorities." (WDI) Independent variables are given below;

Table 1: List of Independent variables

Sr.	Variable Name	Proxy
1	Economic freedom index	Fiscal freedom index
		Financial freedom index
		Economic freedom overall index
		Investment freedom index
		Trade freedom index
		Corruption freedom index
		Business freedom index
2	Country risk index(ICRG methodology)	Economic factors
		Financial factors
		Political factors
3	Financial inclusion index	Shadow Economy
		Globalization Index
		Financial Literacy
4	Governance institution and corruption index	Rule of Law
		Government Effectiveness
		Political Stability
		Voice and Accountability
		Corruption Perception
		Political Rights
		Control of Corruption
		Regulatory Quality
5	MACROECONOMIC VARIABLES	External Debt
		Inflation
		Exports
		Interest Rate
		Exchange Rate

In step 2:

Capital flight is an independent variable. However, GDP, capital investment, and foreign direct investment are dependent variables.

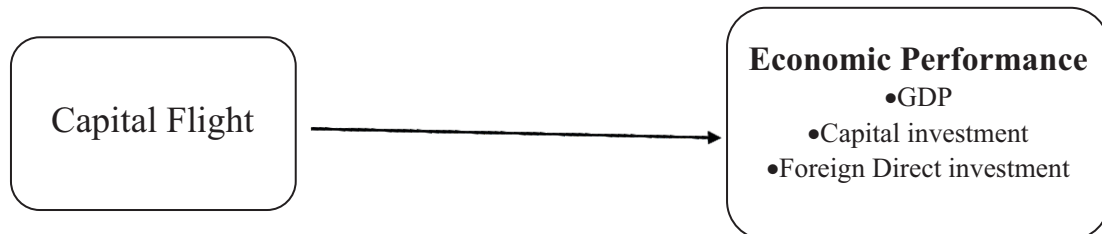


Figure 1: Model 2

Results and discussion**Step 1: determinants of capital flight****Descriptive statistics**

This table shows the descriptive stat of all the variables of model 1. All variables are typically distributed, and outliers were treated. Value of SD shows how much variation that specific variable experienced within its mean.

Table 2: Descriptive Analysis

Variable	Mean	Std. Dev.	Min	Max
Capital Flight	-0.11358	0.203059	-1.97813	1.14425
Country Risk	-0.40638	0.823344	-3.02743	3.198786
Economic Freedom index	-0.23728	1.007952	-5.6049	2.626476
Financial Inclusion Index	-0.45341	0.868601	-2.18886	2.996587
GIC Index	-0.57638	0.643073	-1.89286	1.416914
External Debt	-0.24076	0.105886	-0.27992	0.935598
Inflation	0.186031	1.066917	-2.18326	13.32293
Exports	0.013874	0.273814	-0.3636	7.40682
Interest Rate	0.150735	1.137666	-4.08059	5.262503
Exchange Rate	-0.08474	0.291697	-0.2367	1.366625

Data of 57 developing countries are included and for 19 years from 2001-2019. Initially, the sample size was 100, but due to missing data, many countries were excluded.

Correlation analysis

This table shows the correlation between the variables. Some variables have more than 50 % of correlation, so we need to check whether there is any need to drop the variable, and for that, Multicollinearity must be checked.

Table 3: Correlation Analysis

	Capital Flight	Country Risk	Economic Freedom index	Financial Inclusion Index	GIC Index	External Debt	Inflation	Exports	Interest Rate	Exchange Rate
Capital Flight	1									
Country Risk	0.1131	1								
Economic Freedom index	-0.1801	0.2106	1							
Financial Inclusion Index	0.0947	0.1786	-0.1196	1						
GIC Index	0.0907	0.7605	0.2374	0.214	1					
External Debt	-0.2712	0.1842	0.2523	-0.0282	0.2485	1				
Inflation	0.0661	-0.3213	-0.3119	-0.0224	-0.2886	-0.0817	1			
Exports	-0.0046	-0.0684	-0.0191	-0.0216	-0.0471	-0.0519	0.0139	1		
Interest Rate	0.0003	0.0887	-0.0142	0.1212	0.0436	0.0273	-0.0912	-0.0261	1	
Exchange Rate	0.0395	-0.0514	-0.2402	-0.1555	-0.182	-0.1294	0.0319	0.001	0.179	1

In the above table, the GCI index and country risk have a .76 correlation, and we have to test Multicollinearity through VIF so we can decide to drop one of these variables.

Multicollinearity results

Table 5: multicollinearity

F(9, 1074) = 18.29						
Prob > F = 0						
R-squared = 0.1329						
Adj R-squared = 0.1256						
Root MSE = 0.19295						
Capital Flight	Coef.	Std. Err.	T	P> t	[95% Conf.Interval]	
Country Risk	0.032172	0.011284	2.85	0.004	0.010031	0.054313
Economic Freedom index	-0.02865	0.006782	-4.22	0	-0.04196	-0.01534
Financial Inclusion Index	0.006101	0.007128	0.86	0.392	-0.00789	0.020088
GIC Index	0.035467	0.014607	2.43	0.015	0.006806	0.064129
External Debt	-0.5443	0.058292	-9.34	0	-0.65868	-0.42992
Inflation	0.014527	0.006158	2.36	0.019	0.002444	0.026611
Exports	-0.00628	0.02118	-0.3	0.767	-0.04784	0.035279
Interest Rate	-0.00123	0.005303	-0.23	0.816	-0.01164	0.009174
Exchange Rate	1.95E-05	0.021959	0	0.999	-0.04307	0.043108
_cons	-0.21962	0.015938	-13.78	0	-0.25089	-0.18834

Variable	VIF	1/VIF
GIC Index	2.6	0.384681
Country Risk	2.5	0.399385
Economic Freedom index	1.29	0.772541
Inflation	1.21	0.824313
Exchange Rate	1.19	0.837798
Financial Inclusion Index	1.15	0.87264
External Debt	1.13	0.888538
Interest Rate	1.07	0.931441
Exports	1.01	0.992892
Mean VIF	1.46	

Based on the above testing technique, no variable has an issue with Multicollinearity, so we do not need to drop any variable out of the analysis. Furthermore, no value is greater than 5, so there is a low Multicollinearity to move forward to perform GMM.

Results of GMM

Table 6: GMM dynamic panel estimation result

Capital Flight	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
L1. Capital Flight	0.352***	0.006173	56.95	0	0.339424 0.36362
Country Risk Index	-0.175***	0.017778	-9.87	0	-0.2103 -0.14061
Economic Freedom Index	0.0364***	0.006241	5.83	0	0.024183 0.048646
Financial inclusion Index	0.336***	0.019426	17.3	0	0.298068 0.374218
GIC Index	0.375***	0.023539	15.93	0	0.328948 0.421218
External Debt	-0.0447*	0.018583	-2.41	0.016	-0.08112 -0.00828
Inflation	0.0606***	0.007033	8.61	0	0.046783 0.074352
Exchange Rate	0.585***	0.08391	6.97	0	0.420211 0.749134
Exports	-0.113**	0.038142	-2.96	0.003	-0.18771 -0.03819
Interest Rate	0.0519***	0.004432	11.72	0	0.043232 0.060604
_cons	0.283***	0.02676	10.59	0	0.230935 0.335831
Number of countries	57				
No. of Instruments	42				
AR(1)	0.0496				
AR(2)	0.371				
Hansen test	0.255				
Sargan test	0.000				

t statistics in parentheses (* p<0.05, **p<0.01, *** p<0.)

The table mentioned above shows all variables are significant on level $P < 0.05$, and all variables co-efficient signs explain the direction of their relationship with capital flight. External debt, country risk, and exports have a negative relationship with capital flight. Country risk carries a different interpretation because of its variable's reversal nature. This variable explains that if there is more country risk, there would be more capital flight. The country risk index is generated following the ICRG methodology in which 0 means more risk and ten means low risk so this negative sign means otherwise. A negative relationship of capital flight and financial risk confirmed that the relationship between two variables depends on the residents and non-residents (Dooley, 1988). Economic freedom index and capital flight have a significant positive relationship because free trade and business policies ease the outgoing of capital with different methods. This index is made up of different factors, and those factors were studied with capital flight and possessed a positive relationship, but the overall economic freedom index has never been studied with capital flight. The relationship of fiscal policy and capital flight has been discussed in a study, and it has shown a positive and significant relationship between Taxation and external debt with capital flight (Lensink et al., 1998). Trade openness is another aspect of the economic freedom index, and it is an essential factor in driving capital flight from developing economies (Yalta et al., 2012). FI index and capital flight have a positive relationship that means more financial inclusion causes capital flight. The financial inclusion index is based on different factors which have already been studied in the context of capital flight, e.g., financial liberalization, globalization, and financial literacy. Under Hot money theory of Cuddington, which says many social, economic, and financial explanations of the capital flight, the flaws in all these factors facilitate capital flight from developing countries. Financial inclusion is basically how many people are aware of the financial institutions and are included in any country's financial process (Dev & weekly, 2006). In this study, the

financial inclusion index includes all those factors which shared the surprising results with capital flight, so it became essential to discuss them all together in one index. Financial liberalization and capital flight have been discussed in the literature, and they were proved to be positively significant. However, the result should be the other way because financial liberalization facilitated the trade, but it facilitated the "flight of capital" (Lensink et al., 1998). Globalization and financialization of the world economy have exacerbated and, in some cases, directly contributed to capital mobilization out of Africa. Under globalization, capital is highly mobile and will search for ways to maximize returns and avoid taxes and government regulations (Petersen, 2004). The relationship of globalization with the capital flight was meant to be the other way because we generally associate "globalization" as a positive indicator for the economic situation, but it facilitates capital flight, so it has become a negative thing. GIC index is also positively related to capital flight. The role of governance, institutions, and corruption has already been discussed by (Osei-Assibey et al., 2018), which stated that corruption is significant in sub-Saharan Africa's capital flight. Another study has investigated the role of corruption as part of poor governance with the help of the portfolio choice model of asset allocation, and it proves that corruption has a long-term effect on capital flight. (Asongu and Nwachukwu, 2016), have also studied governance in capital flight, and it established a strong relationship between two variables. China's sudden acceleration in the capital flight in 2005 (425 billion \$); was because of the high corruption, false institutional role, and transaction cost. Macroeconomic variables are always part of the analysis as control variables whenever the determinants of capital flight are analyzed. Since capital flight is a burning issue for developing and developed countries and portfolio choice theory, macroeconomic context is essential for capital flight. All macroeconomic variables, including FDI, inflation, external debt and GDP growth, exchange rate, and fiscal deficit, are of more importance because all these factors altogether shape investors' decision making whether money should be kept in home country or abroad (Lee et al., 2015). Another study has given special attention to the macroeconomic variables and capital flight co-movement, and the results were as expected, e.g., external debt, inflation, and fiscal deficit are positively related to capital flight (Imran et al., 2018). However, in this study exports, external debt carries a significant negative relationship with capital flight. A Study in Malaysia has also mentioned the negative relationship between external debt and capital flight because external debt is more government activity, but the capital flight is a private phenomenon (Liew et al., 2016). A book also confirms the negative relationship between capital flight and external debt (Khan & Ajayi, 2000).

Step 2: Capital Flight and Economic Performance

The result of the GLS technique is given below;

Table 3: GMM estimation results (2001-2019)

Capital Investment Capital Flight							
Variables	Coef.	Std. Err.	z	P> z	R-sq	F-stat	P value of Hausman Test
Random Effect	-0.58923	0.114951	-5.13	0.00	0.0704	0.0000	0.2936
Fixed Effect	-0.56611	0.11704	-4.8	0.00	0.0216	0.0000	
Foreign Direct Investment Capital Flight							
Variables	Coef.	Std. Err.	z	P> z	R-sq	F-stat	Hausman Test
Random Effect	-1.15241	0.192467	-5.99	0	0.029	0.0000	0.1109
Fixed Effect	-0.87051	0.261383	-3.33	0.001	0.0103	0.0000	
Gross Domestic Product Capital Flight							
Variables	Coef.	Std. Err.	z	P> z	R-sq	F-stat	Hausman Test
Random Effect	-0.2488	0.156757	-1.59	0.113	0.0424	0.0024	0.102
Fixed Effect	-0.20247	0.154175	-1.31	0.189	0.0024	0.1128	

This table shows that three of the variables used as a proxy of economic performance are negatively related to capital flight. The more is capital flight. The trimmer will be the economic activity. (Kant, 1996), suggests that foreign direct investment and capital flight negatively affect capital flight, and this study also has the

same outcome. This study employed random effects and fixed effect, and if the p-value is more significant than .05, we use random effect and otherwise. Based on the value of the Hausman test, we used the random effect model, and with that, GDP is insignificant for capital flight.

Conclusion

The objective of this paper was to investigate the determinants of capital flight and check the impact of capital flight on economic performance. The model of this study is of two steps, in the first step, capital flight is dependent, and in the second step, capital flight is independent. The GMM estimation technique was employed for the first step, with annual data from 2001 to 2019. The result from the GMM confirmed the existence of a significant relationship of all determinants with the capital flight. The determinants are not simple factors in the first step, but these are indices made up of several factors using the mean arithmetic approach. The results showed that the country risk index, corruption governance and institution index, financial inclusion index, and economic freedom index were the main determinants of capital flight in developing economies during the study period. Five macroeconomic variables are included in the analysis, e.g., external debt, exchange rate, interest rate, inflation, and exports. Capital flight is adversely correlated with exports, external debt, and country risk. Second, capital flight is linked to three economic indicators: GDP, FDI, and capital investment. GDP, capital investment, and FDI are all negatively related to capital flight. As a result, if capital flight activity increases, economic activity suffers. Third, an anti-corruption commission and judicial reforms are recommended to limit money flight and improve transparency and accountability. Fourth, a reduction in external borrowing would also reduce uncertainty and so capital flight. Instead, the government should focus on raising domestic revenue and investing it. Fourth, capital flight can be reduced by tightening capital controls, expanding the financial system, and maintaining macroeconomic stability. To reduce capital flight, the government should also tighten capital controls, deepen the financial market, and maintain macroeconomic stability.

References

- Ahmed, B., & Sahto, Q. D. (2015). Determinants of capital flight in Pakistan. *IBT Journal of Business Studies (JBS)*, 2(2).
- Anthony, M. L., & Hughes Hallett, A. J. (1992). How successfully do we measure capital flight? The empirical evidence from five developing countries. *The Journal of Development Studies*, 28(3), 538-556.
- Ashman, S., Fine, B. & Newman, S. (2011). Amnesty International? The Nature, Scale and Impact of Capital Flight from South Africa, *Journal of Southern African Studies*, 37, 7-25.
- Asongu, S. A., Nting, R. T., & Osabuohien, E. S. (2019). One bad turn deserves another: how terrorism sustains the addiction to capital flight in Africa. *Journal of Industry, Competition and Trade*, 19(3), 501-535.
- Asongu, S. A., & Nwachukwu, J. C. (2017). Fighting capital flight in Africa: evidence from bundling and unbundling governance. *Journal of Industry, Competition and Trade*, 17(3), 305-323.
- Ayadi, F. S. (2008). Econometric analysis of capital flight in developing countries: A study of Nigeria. *Developing Country Studies*, 20, 289-326.
- Beja, E. (2005). Capital flight: Meanings and measures. *Capital flight and capital controls in developing countries*, 58-82.
- Beja Jr, E. L. (2005). *Capital flight from Southeast Asia: Case studies on Indonesia, Malaysia, the Philippines, and Thailand*. University of Massachusetts Amherst.
- Cerra, V., Rishi, M., & Saxena, S. C. (2008). Robbing the riches: capital flight, institutions and debt. *The Journal of Development Studies*, 44(8), 1190-1213.
- Chang, P. K., Claessens, S., & Cumby, R. E. (1997). Conceptual and methodological issues in the measurement of capital flight. *International Journal of Finance & Economics*, 2(2), 101-119.
- Cuddington, J. T. (1986). *Capital flight: Estimates, issues, and explanations* (Vol. 58). Princeton, NJ: International Finance Section, Department of Economics, Princeton University.
- Deppler, M., & Williamson, M. (1987). II Capital Flight: Concepts, Measurement, and Issues. In *Staff Studies for the World Econ Outlook, August 1987*. International Monetary Fund.

- Efobi, U., & Asongu, S. (2016). Terrorism and capital flight from Africa, *International Economics*, 148, 81-94.
- Garg, S., & Agarwal, P. (2014). Financial inclusion in India—a Review of initiatives and achievements. *IOSR journal of business and Management*, 16(6), 52-61.
- Gibson, H. D., & Tsakalotos, E. (1993). Testing a flow model of capital flight in five European countries. *The Manchester School*, 61(2), 144-166.
- Gulati, S. (1988). Capital flight: causes, consequences and cures, 165-185.
- Gunter, F. R. (2004). Capital flight from China: 1984–2001, 15(1), 63-85.
- Gunter, F. R. (2017). Corruption, costs, and family: Chinese capital flight, 1984–2014, *China Economic Review*, 43, 105-17.
- Heggstad, K. & Fjeldstad, O. H. (2010). How banks assist capital flight from Africa: A literature review. *CMI Report*, 6.
- Hermes, N. & Lensink, R. (2001). Capital flight and the uncertainty of government policies, 71(3), 377-81.
- Hunjra, A. I., Mehmood, H., & Bakari, H. (2018). Co-movement between macroeconomic variables and capital flight. *Asian Economic and Financial Review*, 8(9), 1185-1195.
- Hyder, S., Akram, N. & Padda, I. U. H. (2015). Impact of terrorism on economic development in Pakistan. *Pakistan business review* 839(1), 704-22.
- Kant, C. (1996). Foreign direct investment and capital flight.
- Khan, M. M. S., & Ajayi, M. S. I. (2000). *External debt and capital flight in Sub-Saharan Africa*, International Monetary Fund.
- Kollamparambil, U., & Gumbo, D. (2018). Capital flight in Africa: an analysis of macroeconomic and institutional quality determinants. *African Finance Journal*, 20(2), 21-44.
- Le, Q. V., & Zak, P. J. (2006). Political risk and capital flight, *Journal of International Money and Finance*, 25, 308-29.
- Lee, S. P., & Ng, Y. L. (2015). Public debt and economic growth in Malaysia. *Asian Economic and Financial Review*, 5(1), 119-126.
- Lensink, R., Hermes, N., & Murinde, V. (2000). Capital flight and political risk. *Journal of international Money and Finance*, 19(1), 73-92.
- Lensink, R., Hermes, N., & Murinde, V. (1998). The effect of financial liberalization on capital flight in African economies. *World Development*, 26(7), 1349-1368.
- Liew, S. L., Mansor, S. A., & Puah, C. H. (2016). Macroeconomic determinants of capital flight: An empirical study in Malaysia. *International Business Management*, 10(13), 2526-2534.
- Ndikumana, L., & Boyce, J. K. (2011). Capital flight from sub-Saharan Africa: linkages with external borrowing and policy options. *International Review of Applied Economics*, 25, 149-70.
- Nölling, W. (1986). Combating capital flight from developing countries, *Intereconomics*, 21, 117-23.
- Osei-Assibey, E., Domfeh, K. O. & Danquah, M. (2018). Corruption, institutions and capital flight: evidence from Sub-Saharan Africa, *Journal of Economic Studies*, 45, 59-76.
- Owens, D. S. (2017). *Fight or Flight? Democratic Consolidation and Capital Flight in Latin America* (Doctoral dissertation).
- Petersen, H. G. (2003). *Globalisation, Capital Flight and Capital Income Taxation: A European Perspective*. Univ., Fachbereich Wirtschaftswiss..
- Rahman, M. (2019). Determining illicit financial outflows from sixty developing countries. *Journal of Financial Economic Policy*, 11, 62-81.
- Rosengard, J. K., & Prasetyantoko, A. (2011). If the banks are doing so well, why can't I get a loan? Regulatory constraints to financial inclusion in Indonesia. *Asian Economic Policy Review*, 6(2), 273-296.
- Schineller, L. M. (1997). An econometric model of capital flight from developing countries. *Board of Governors of the Federal Reserve System Working Paper*, (579).
- Siddiqui, R., & Malik, A. (2001). Debt and economic growth in South Asia. *The Pakistan Development*

Review, 677-688.

Yalta, A. Y., & Yalta, A. T. (2012). Does financial liberalization decrease capital flight? A panel causality analysis. *International Review of Economics & Finance*, 22(1), 92-100.

Zheng, Y., & Tang, K. K. (2009). Rethinking the measurement of capital flight: an application to Asian economies', *Journal of the Asia Pacific Economy*, 14, 313-30.