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Unveiling the Ties Between Corruption and Capital Flight: Pakistan's Economic Challenge

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Abstract: *Capital flight poses a severe threat to Pakistan's economic stability by draining essential financial resources needed for investment, widening the trade deficit, and exacerbating the debt burden. Between 1990 and 2023, capital flight in Pakistan reached alarming levels, with estimates showing it at times exceeding 12% of GDP. This study investigates the intricate relationship between corruption and capital flight in Pakistan. It aims to provide empirical insights into how corruption, as measured by the Corruption Perceptions Index (CPI), influences the outflow of capital from the country. Utilizing data from 1990 to 2017, the study employs econometric models to analyze the effects of key economic variables, including inflation, GDP, exchange rates, and interest rate differentials, on capital flight. The findings reveal a significant positive correlation between corruption and capital flight, suggesting that corruption exacerbates the capital outflow problem. The study emphasizes the urgent need for policy reforms targeting corruption control, financial regulation, and investment climate improvement to curb illicit financial flows and stabilize the economy.*

Keywords: Corruption, Capital Flight, Pakistan Economy, Corruption Perceptions Index (CPI), Empirical Analysis, GDP, Exchange rate

1. Introduction

The country is struggling to meet basic interest payments on its foreign debt, which is exacerbated by rapid currency devaluation. Capital flight (CF) is a significant concern, not only for Pakistan but for many developing nations in Asia and Africa, as it reflects the investment climate and domestic confidence while signaling to international banks about a country's ability to repay debt. A large portion of CF in Pakistan involves illicit capital flows that go unrecorded.

This paper aims to explore the economic causes of capital flight, specifically investigating whether corruption contributes to it in Pakistan. It examines the direct relationship between corruption and capital flight using empirical analysis while controlling factors like inflation, GDP, and exchange rate returns. By focusing on the correlation between capital flight and the Corruption Perceptions Index, the study seeks to fill a gap in the literature and provide insights for policy reforms. Understanding this link is crucial, especially since Pakistan ranks 117th on Transparency International's Corruption Perceptions Index.

In this paper, as used by the World Bank, corruption is defined as "the misuse of power and abuse of public office for private interest". This definition is used in recent studies on corruption as a cost to

development. Nevertheless, this does not necessarily mean that corruption is only a public sector issue. However, public sector corruption hinders public policy and development more than the private sector in developing economies. As far as the measurement of corruption is concerned, there are many methods such as the Corruption Perceptions Index (CPI) by Transparency International.

Before discussing the causes and capital management techniques, it is important to understand the effects of capital flight on the domestic economy. In other words, why CF is harmful while normal capital outflows are not considered damaging to the economy? It must be discussed in the context of developing countries. Generally, by reducing the amount of capital going out of the domestic economy, it can be used to shrink the level of foreign borrowing and liquidity constraints helping to reduce the import-export gap (Rahman, 2000; Schneider, 2003b). Moreover, there exists the notion that capital flight increases inequality because the elite or wealthy fragment of society evades taxes and channels funds abroad while the poor masses pay higher taxes (Boyce and Ndikumana, 2001). Both the above arguments sound reasonable in the case of Pakistan. As the circular debt is rapidly increasing over time, capital staying within the country would help. Similarly, the tax revenue collection has been maintained or increased slightly by imposing higher taxes instead of increasing the tax net. In addition, capital flight is an indicator of the investment climate for foreign investors explaining the risk involved which might lead to a reduction in private capital flows. (Schneider, 2003b). Moreover, the increasing capital flying out of the country creates speculation in the market. With less developed financial institutions in the market, political or economic uncertainty leads to anticipated major macroeconomic policy changes forcing the capital to move abroad to avoid risk. This causes adjustments in the exchange rate and interest rate. If the central banks attempt to regulate the exchange rate, the consequent effects on foreign exchange reserves are threatening to the domestic economy especially when it is already facing a circular debt over a period.

The larger the volume of CF from small developing economies, the larger the negative impact on the economy would be. In most cases, CF is very large in volume and has a significant effect on the economy. For instance, Yalta (2006) estimates Capital flight by using the residual method and illustrates that CF as a share of the GDP has been between -7 and 12 percent, which is higher than net FDI to Turkey during the same period. In this paper, section 2 presents a review of the literature on both CF and corruption focusing on the linkage between the two. Section 3 describes the main economic causes of CF in detail followed by a brief explanation of data and variables in section 4. The key findings and empirical results are described in section 5.

2. Literature review

In this part, we outline the idea of CF and discuss some relevant studies linking corruption to CF. Capital flight has been defined in different ways and there are various measurement techniques of CF. For this paper, we stick to the notion that CF is an outflow of assets by both residents and non-residents of the said country to avoid taxes and regulations.

Let's look at some of the studies to understand the economic implications of corruption. According to the reports of the World Bank (2005), in many developing economies, the lower or lower-middle income group pays a considerable part of their income as a bribe to get access to public services, so corruption works like a regressive tax. Research by Wei (2002) suggests that kickbacks and official extortion play a role in taxation which reduces FDI in developing economies. Similarly, Wei & Wu (2001) have examined corruption as one of the important reasons for macroeconomic vulnerability reducing economic growth. A few studies advocate that the inefficiency and ineffectiveness of many aid-funded projects in developing countries are because of the enormous scale of corruption (Kaufman, 2003).

There have been many studies on the linkage of corruption and CF in different ways. After the 1998 debt crisis in Russia, it experienced the highest amount of CF among all other transition economies

(Loungani & Mauro, 2000). This transition period in Russia has been associated with exponentially increasing levels of corruption which then resultantly reduced the trend of domestic investment providing incentives to boost CF (Abalkin, 1999; Mulino, 2002; Nikita, 2017).

Another interesting paper is by Quan and Zak (2006) "Political risk and capital flight" in which they present a portfolio model that correlates capital flight to return differentials, risk aversion, and three different types of risk namely economic risk, political instability, and policy variability. Interestingly, political instability (regime change, corruption) is the main factor linked with CF according to their findings.

Phillip Frederick (2017) found that a unit increase in corruption control lowers the illicit financial outflow by an average of US$ 44.3 million. Their results also establish that the exchange rate decreases illicit financial outflows while a rise in net FDI and inflation increases illicit financial outflows. These relations are also important as we discuss the next section later.

As de Boyrie et al., (2007) and Mulino, (2002) examined CF is the result of many socio-economic policies along with a high number of unofficial activities due to a high level of corruption. Other factors discussed in the paper are trade misinvoicing, a complex banking system, financial instability, and unevenly high taxes.

Furthermore, Domfeh (2015) has done an extensive study on sub-Saharan African (SSA) countries' "Capital flight and institutional governance in sub-Saharan Africa: the role of corruption". The paper used panel data and fixed effect regression for 32 countries and found that corruption has a positive and statistically significant impact across all the estimations. It implies that a higher tendency of corruption among public office holders such as inducement, kickbacks, and misuse of public funds, among others enable an upsurge in capital outflow from SSA.

3. Data and Methodology

Theoretical Background

Capital flight from developing countries is influenced by various economic and political factors. Understanding illicit financial flows (IIFs) helps illuminate these connections (Moore, 2012). Key drivers include the effectiveness of financial regulations, where weak controls can facilitate outflows while strong regulations encourage local investment. The IMF (2012) highlights that while liberalizing capital accounts can enhance efficiency, it poses risks in nations with weak institutions. Historical examples, such as Turkey in the 1990s, show that rapid liberalization often leads to increased capital flight. Additionally, external borrowing creates a bidirectional relationship with capital flight; negative economic conditions can drive citizens to transfer assets abroad, while capital flight may prompt nations to seek external debt to address capital gaps.

Other important factors include exchange rates, taxation, and structural issues. In fixed exchange rate regimes, devaluation can trigger capital flight as investors anticipate losses, while currency instability in floating systems may lead to further outflows. High taxes and fears of expropriation motivate investors to seek safer environments, often in tax havens. Furthermore, resource-rich countries tend to experience higher rates of capital flight due to corruption and weak governance. Mismanagement of natural resources, combined with tax evasion by multinational corporations, exacerbates the issue, making nations with abundant resources and poor institutions particularly vulnerable to capital flight.

Study Design

The time series data consists of economic and financial indicators of the Pakistan economy. The period of the study is from 1990 to 2017. Data for Capital flight (dependent variable) and other control economic variables (independent) are collected from the World Development Indicator (WDI) whereas the proxy for corruption is the Corruption Perceptions Index (CPI), taken from Transparency

International. The index ranks 180 countries using a scale of 0 to 100 where 0 indicates highly corrupt and 100 indicates very clean. The scare of Pakistan is 33 on this scale and overall ranks 117 the least corrupt country in the ranking. We have used CPI as a proxy of corruption to find its linkage to return on investment. For clarification, CPI is the most validated indicator of corruption and has been used in all recent studies.

Capital flight has been measured through the residual method which is the most applied method in the literature even recently. For instance, (A. Yalta 2006) uses the residual method to estimate CF for Turkey for the period between 1970-2001. According to the World Bank, the residual method uses the sources of finance and uses of finance to find out the difference as missing capital that flew out of the country. The sources of finance are changes in external debt and net foreign direct investment whereas the uses of finance are the current account deficit and changes in foreign reserves. The data used for these four variables to estimate CF has the following interpretations in the paper as described by the data source as well.

$CF = ED + nFDI - CAS - FR$

a) The net change in total international reserve holdings of a country in their capital, current, and financial accounts are reserved and related items also known as a change in foreign reserves (FR). These reserves are external assets available for the central bank to handle any BoP crisis. It includes borrowings from the IMF, reserve position in the IMF, monetary gold, and other reserve assets. The data is in U.S. dollars.

b) The current account balance (CAB) is the sum of net primary and secondary income and net exports of goods and services. Data is in current U.S. dollars.

c) FDI is the net inflow of assets including both short-term and long-term. It also includes reinvestment in earnings and the sum of equity capital. The net FDI is calculated by assets (outflows) minus liabilities (inflows) shown in current U.S. dollars.

d) The net change in external debt contains the change in the stock of short-term debt. When the stock is disbursed, the change in the stock is positive and when the change is negative, it assumes a repayment.

Econometric equation:

$$CFt = \beta 0 + \beta 1\ ERt + \beta 2\ INFt + \beta 3\ GDPt + \beta 4\ (Rm\text{-}Rf) + \beta 5\ CPIt + \mu$$

As far as the econometric model is concerned, there are four control variables discussed in the study which are inflation, GDP, real exchange rate, and return differential.

The return differential (R2 - Rf), is estimated as the domestic real interest rate minus the average US government bond rate. This is the risk premium on loans which is the interest rate charged by banks to private sector borrowers minus the "risk-free" treasury bill interest rate at which short-term government securities are issued or traded in the market. The terms and conditions attached to lending rates differ by country. The inflation rate at which prices increase over time results in a fall in the purchasing value of money. Inflation and real interest rates are positively related to each other.

4. Results and Findings

Data Analysis

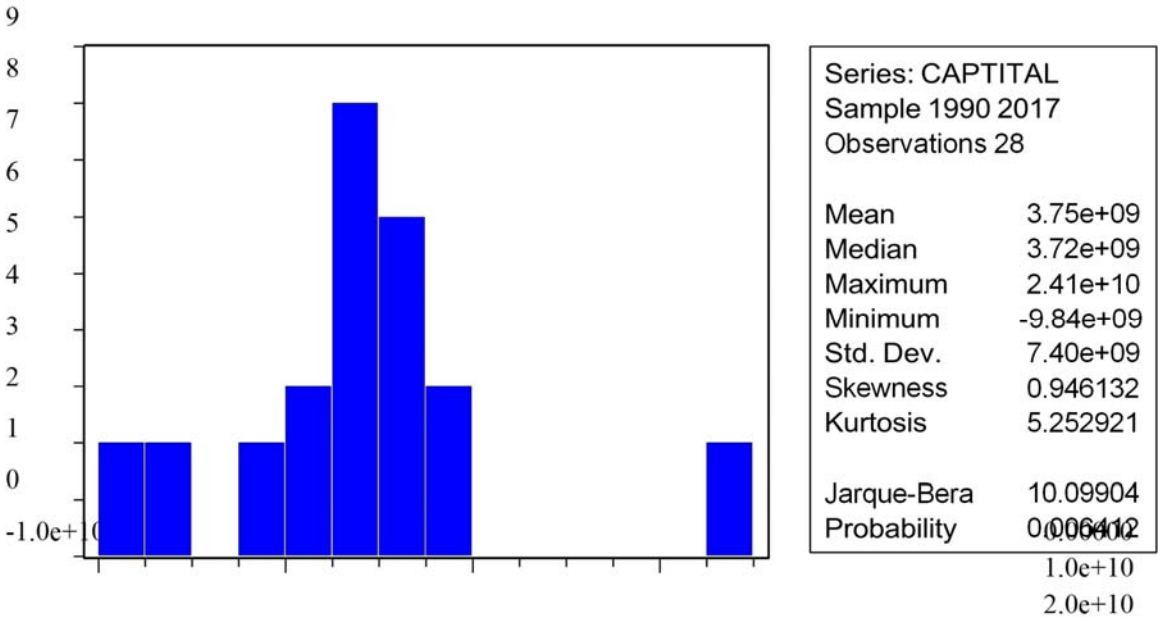
For the performance of our analysis, descriptive analysis and regression analysis were used[4]. Then diagnostic checking of residuals has been used to analyses the best model fitting i.e. Autocorrelation, heteroskedasticity, and serial correlation.

Normality of Capital Flight

In the time series, the initial step of data analysis is to check the normality of our dependent variable.

ie. Capital Flight. Normality is checked by using a Histogram performing the Jarque Bera probability test in EVIEWS.

Figure 4.1: Normality Test of Capital Flight



This figure represents the descriptive statistics of the dependent variable i.e. Capital flight. To determine whether our dependent variable follows normal distribution or not, we can see through the shape of the histogram and Jarque-Bera probability test. Jarque-Bera test is a type of goodness of fit test whether our data have skewness or kurtosis[5] follows a distribution. This test also gives its probability of significance value.

H_o: The data follows a normal distribution.

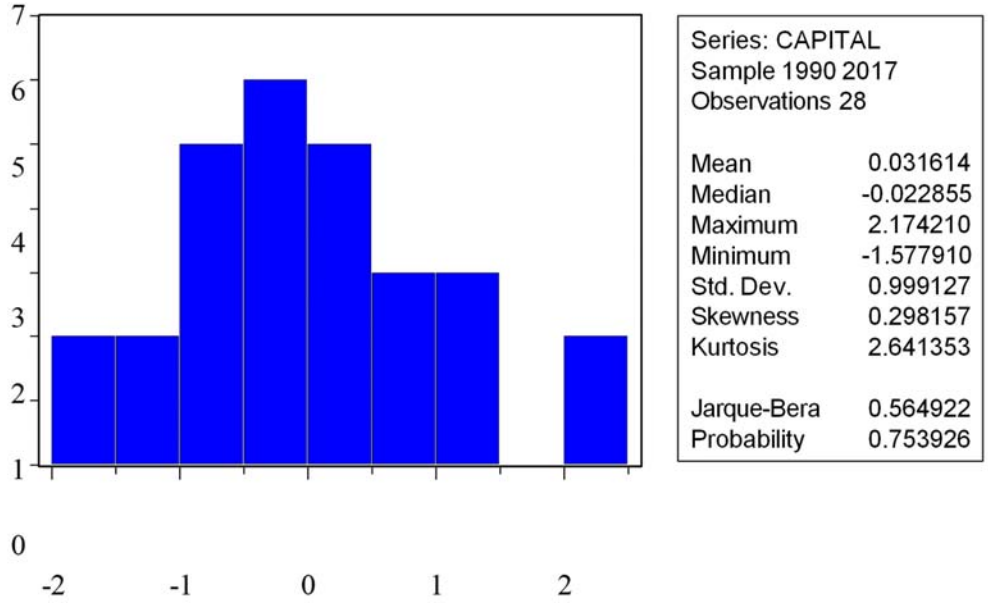
H_1: The data does not follow the normal distribution.

From the shape of the distribution, we have seen that it is not symmetrical, it is positively skewed (the mean is greater than the median). All the values lie to the right (towards the lower value on the scale) of the distribution. As our p-value of the Jarque-Bera test i.e. 0.006412 is less than the fixed level of significance (0.05), so we reject our null hypothesis and conclude that it is not normal. As our dependent variable is not normal, the significance of our different tests will be affected and may give misleading results. Therefore, our dependent variable, i.e. Capital Flight, must be normal to get efficient results.

Normality of Transformed Capital Flight

Now we must transform our dependent variable so that the dependent variable follows normal distribution. We transformed our dependent variable by using Minitab software. Now, we test the normality of transformed dependent variables again by using the Histogram and Jarque-Bera probability test.

Figure 4.2: Normality checking of transformed dependent variable i.e. Capital Flight



This figure represents the descriptive statistics of the transformed dependent variable i.e. Capital flight. From the shape of the distribution of our data, we have seen that the dependent variable i.e. Capital Flight is symmetrical. All the values lie equally to the left and right of the mean value. Its Null hypothesis is that the distribution of data follows a normal distribution. As our p value of Jarque Bera test i.e. 0.753926 is not less than the fixed level of significance (0.05), so we do not reject our null hypothesis and conclude that it is normal. It is now clear that Capital Flight follows a normal distribution as per requirements and it will provide consistent results.

Descriptive Statistics

We find the descriptive statistics of dependent and independent variables.

Table 4.1: **Descriptive Statistics**

Variables	**Mean**	**Median**	**Maximum**	**Minimum**	**Std. Dev.**	**Skewness**	**Kurtosis**	**Observation**
CF	0.032	-0.023	2.174	-1.578	0.999	0.32	-0.18	28
GDP	1.29690E+11	90611283645	3.04952E+11	40010424929	8344820621 4	0.73	-0.86	28
INF	8.485	8.487	20.286	2.529	4.190	0.61	0.70	28
EXR	1.86	3.45	8.32	-6.77	4.64	-0.64	-0.59	23
Rm-Rf	2.379	2.329	4.768	1.304	0.870	1.54	3.71	23
CPI	2.364	2.500	3.200	0.000	0.685	-2.18	6.34	20

Table 4.1 represents the information of descriptive statistics of all independent and dependent variables. The skewness value shows the probability of distribution of data and kurtosis measures its tallness. The mean value of capital flight is (0.032) which describes the average value having capital outflow reduced

by 0.039% with a 0.999% standard deviation. The minimum and maximum values of Capital Flight are -1.578 and 2.174 respectively. Except for return differential and CPI, the data of other variables fall within a range of -1 to +1, hence not highly skewed.

Correlation Analysis

Correlation analysis was shown to determine the relationship between the corruption perception index (CPI) and capital flight with the controlling effect of other macroeconomic variables. It is also important to consider the problem of multi-collinearity among independent variables. Multi-collinearity problem is checked by variance inflation factor with the formula (VIF=1/1- Adjusted R-squared). So according to the standard value of VIF, the capital flight value is less than 10.

There is no multi-collinearity problem in our model. The below table 5.2 shows the strength and direction of all the variables in a matrix.

The findings of the correlation analysis are as follows:

Table 4.2: Correlation Analysis

				Exchange		
CF	1.000	0.323	0.427	-0.032	-0.247	-0.001
GDP	0.323	1.000	-0.116	0.562	-0.186	0.583
Inflation	0.427	-0.116	1.000	-0.472	-0.517	-0.066
Exchange rate	-0.032	0.562	-0.472	1.000	0.189	0.635
Rm- Rf	-0.247	-0.186	-0.517	0.189	1.000	-0.053
CPI	-0.001	0.583	-0.066	0.635	-0.053	1.000

Table 4.2 represents the correlation analysis of all independent and dependent variables. Most control variables significantly influence capital flight with a 1% significance level. The real exchange rate, return differential, and Corruption Perceptions Index (CPI) are negatively correlated with capital flight while GDP and inflation rate are positively correlated with capital flight at a 1% level of significance. The relation among other independent variables is consistent.

Stationary of dependent and all independent variables

Another important feature in time series modeling is that the series should be stationary. If the characteristics of the time series do not change with time i.e. (time-invariant) then the time series is stationary, otherwise, it is non-stationary. For stationary time series, both mean and variance are time-invariant. Unit root test is used to check whether the series is stationary or not. The findings are reported as follows.

Table 4.3: Unit root test

Series: CAPITAL, EX, GDP, INFLATION, REALEXP, RM, CPI				
Method			Statistic	Prob.
ADF - Fisher Chi-square			22.5107	0.0687
ADF - Choi Z-stat			1.33233	0.9086
Intermediate ADF test results				
CAPITAL	0.0898	0	6	27
GDP	1.0000	0	6	27
INF	0.2283	0	6	27

EXR	0.8860	2	2	11
Rm-Rf	0.0008	0	2	13
CPI	0.9532	3	4	19

Table 4.3 shows the results of the unit root test of stationery by using EVIEWS. The type of test used in unit root is Augmented Dickey Fuller[6]. In our case, the P value of Augmented Dickey-Fuller is greater than the significance level so we do not reject our null hypothesis. We have also seen that the probability values of all the independent variables individually and dependent variables i.e. Capital Flight, exchange rate, GDP, inflation, and CPI are greater than the significance of value (0.05) except for the return differential (Rm - Rf). So, we do not reject our null hypothesis and conclude that series are non-stationary. Because of non-stationary it may provide us with inconsistent results. So, we transform it to make it stationary in our model building.

1st difference series

The next step is to make them stationary by applying a different operator. Now we have taken 1st difference on all the series to get stationary time series. We applied for the unit root test on 1st difference series.

Table 4.4: Unit root test on difference series

Null Hypothesis: Unit root (individual unit root process)				
Series: CAPITAL, EX, GDP, INFLATION, REAL EXP, RM, CPI				
Method			Statistic	Prob.
ADF - Fisher Chi-square			110.671	0.0000
ADF - Choi Z-stat			-8.01298	0.0000
Intermediate ADF test results				
D(CAPITAL)	0.0008	1	5	26
D(GDP)	0.0145	0	5	26
D(INFLATION)	0.0000	0	5	26
D(EXR)	0.0007	1	2	24
D(CPI)	0.0000	4	4	24

Table 4.4 reported the results of the unit root test of the difference series of all variables by using EVIEWS. The p-value of Augmented Dickey-Fuller (ADF) is less than the significance level so we reject our null hypothesis. We have also seen that the p values of the first difference of all the independent and dependent variables i.e. Capital Flight, exchange rate, GDP, inflation, real expenditure, and Corruption Perceptions Index are less than the significance of value (0.05), so we reject our null hypothesis and concluded that series are stationary. Now we proceed further with our analysis.

Regression Analysis

The regression analysis is done to determine the nature of the relationship between the dependent variable and independent variables. To explain why the transformation process is meaningful for both stationary and normality, we have run a series of regressions. We first regressed CF on the original variables before transformation, then regressed the first difference CF on all the first difference independent variables, and then regressed the first difference CF on all the original independent variables. After these three regressions, the diagnostic checking of the residual was done to interpret the behavior. The diagnostic checking includes correlogram, histogram, serial correlation, and heteroskedasticity of the residual. For convenience, all the tables and figures of the residual tests and

secondary regressions are included in the appendix while the crucial tables are included in the main part.

Regression of Capital Flight on all the original variables

Now we have regressed the series of Capital Flight on all other original independent variables. Table 4.5 represents the regression analysis of the dependent variable on all original independent variables. The results reported that all the independent variables, i.e. real exchange rate, GDP, inflation, return differential (Rm - Rf), and CPI have a positive impact on Capital flight. For improvement of the hypothesis, regression analysis with ordinary least square testing has been applied. In the table, only inflation is significant as its p-value (0.0247) is less than the significance level of 1% and 5% while all other independent variables are insignificant as their significance p-value is greater than the significance level of 1% and 5% and R^2 is very low. However, the value of R^2 indicates that 62% of the variation in the dependent variable i.e. Capital flight is explained by all control independent variables, and it shows that the model is not good. The value of Durbin Watson is also low, i.e. 1.3446 <2 indicating that there is positive autocorrelation Economically speaking, all variables in the model are insignificant and R^2 is very low which might be a result of the presence of multi-collinearity. Only inflation had a positive and significant influence on capital flight.

Table 4.5 Regression Results

Variable	**Coefficient**	**Std. Error**		**Prob.**
C	2.855157	6.083732		0.6531
GDP	4.03E-11	3.03E-11		0.0247
INFLATION	0.251508	0.088232		0.0247
EXR	0.008288	0.079910		0.09203
Rm-Rf	0.640740	0.480611		0.00242
CPI	1.024006	3.862594		0.7986
R-squared	0.619144	Mean dependent var		0.309458
Adjusted R-squared	0.292696	S.D. dependent var		1.112091
S.E. of regression	0.935284			
Sum squared resid	6.123296			
Log-likelihood	14.07644	F-statistic		1.896608
Durbin-Watson stat	1.344458	Prob (F-statistic)		0.0001

Regression of first difference Capital Flight on all the first difference independent variables

Now, 1st difference Capital Flight is going to be regressed on the first difference control independent variables. Table 4.6 represents the regression analysis of 1st different dependent variables on all.

1st difference independent variables. The results reported that after taking 1st difference in all variables forgot consistent results. We have seen that again all the independent variables, i.e. real exchange rate,

GDP, inflation, return differential (Rm - Rf), and CPI have a positive impact on CF. This table also shows that again only inflation is significant as its p-value (0.0436) is less than the significance level of 1% and 5% while all other 1st difference independent variables are insignificant as their significance p-values are greater than the significance level of 1% and 5% and R^2 is very low indicating model is not good. The value of Durbin Watson is also low i.e. 1.2781<2 indicating that there is positive autocorrelation. Moreover, we concluded that after making 1st difference for achieving a significant impact on CF, there is still no significant change.

Regression of first difference Capital Flight on all the original independent variables

Now, we must build a model on a stationary Capital Flight after applying for a different operator. So, the first difference, Capital Flight, is regressed on all the original independent variables for achieving better results.

Table 4.6: Regression of first difference Capital Flight on all the original independent variables

Dependent Variable: D(CAPITAL) Method: Least Squares

Variable	**Coefficient**	**Std. Error**		**Prob.**
C	2.314459	5.220095		0.6709
GDP	4.53E-11	2.60E-11		0.0014
INFLATION	0.190647	0.075706		0.0399
EXR	-0.032546	0.068566		0.06495
Rm-Rf	-0.976923	0.412384		0.0497
CPI	-0.327736	3.314266		0.0240
R-squared	0.845673	Mean dependent var		0.248295
Adjusted R-squared	0.503651	S.D. dependent var		1.139092
S.E. of regression	0.802513			
SSR	4.508188			
Log-likelihood	11.93301	F-statistic		3.198546
Durbin-Watson stat	2.297286	Prob (F-statistic)		0.076910

Table 4.6 above represents the regression analysis of 1st difference dependent variable on all original independent variables for checking the significant effect on CF. The results report that GDP and inflation have positive and significant effects on CF. Higher return differential, which means higher returns at home or less return in foreign has a negative significant effect on CF. Likewise, the exchange rate has a negative impact on CF, meaning currency appreciation will reduce CF. Our CPI is negatively correlated with CF which means the higher the CPI score (less corrupt), the lower would be the CF. The p values are less than the significance of 5% for all values. The value of Durbin Watson is not low i.e. 2.29 >2 indicating that there is no autocorrelation. R^2 increases to 0.8456.

Diagnostic checking of residuals

Now, we check the behaviour of residuals in our model. The first step is a correlogram which checks the autocorrelation within the residuals. Fig 5.3 shows that all spikes are inside the bound so residuals are independent. The next step is to check the normality of residuals by using the Histogram and Jarque-Bera test as before. The shape of the distribution and the values attained by the skewness, kurtosis, and Jarque-Bera test statistics, it clear that error terms follow normal distribution. The probability value of the Jarque-Bera test i.e. 0.947334 is greater than the significance levels 1% and 5%, so it suggests that error terms follow the normal distribution. After normality, we check the serial correlation of residuals which shows that their p-value of F statistics 0.6645 is greater than the significance values 1% and 5% so we conclude that there is no serial correlation. Lastly, the p-value of the ARCH test i.e. 0.2588 is less than the significance level of 1%, so we conclude that there is no heteroskedasticity in the model. So, the residuals of our regression analysis are homoscedastic. The above model is suitable because it fulfills the requirements of diagnostic i.e. residuals are independent, normally distributed, have no autocorrelation, and are homoscedastic. So, a model obtained from the first difference capital flight on all the significant independent variables i.e. real exchange rate, 1st difference GDP, inflation, return differential, and Corruption Perceptions Index (CPI) is suitable.

5. Analyses and Discussion

Capital flight (CF) is influenced by various economic and political factors, making it unreasonable to single out one or two failures in policy. However, certain key factors can significantly impact CF in a specific country. Although there have been numerous estimates of CF in Pakistan over the years, they vary widely depending on the methodology used. For example, Sarmad (1993) found substantial differences in his estimates using three different methods. Yet, unlike studies on other countries, individual economic and political factors influencing CF in Pakistan, such as inflation and political instability, have not been thoroughly analyzed.

Pakistan is rich in natural resources like gold, copper, gas, and coal, but many of these remain untapped due to inadequate infrastructure and poor management. Local gemstones are often smuggled out rather than benefiting the economy. To tackle CF effectively, it's essential to examine the relationship between capital flight and natural resource management. Additionally, the interplay between foreign borrowing and CF is noteworthy as Pakistan's external debt has soared—from $33.2 billion in 2004 to $105.8 billion in early 2019 (State Bank of Pakistan)—this may contribute to corruption and further capital flight. Future research should explore this "revolving door" hypothesis linking debt accumulation to capital flight, as seen in various IMF reports.

Moving on to the dynamics of the exchange rate and CF in Pakistan. In Pakistan, there have been different exchange rate regimes. Between 1971 and 1982 there was a fixed exchange rate regime with partial trade controls leading to devaluation in the early years and inflation over the period. The overvalued currency was fixed by adopting a managed floating exchange rate regime between 1982 and 1998 followed by a multiple exchange rate regime between 1998 to 2000. The country fully opened to trade liberalization while adopting a flexible exchange rate between 2000 to 2013. Interestingly, Mahmood (2013) estimates (unadjusted for trade misinvoicing) capital flight in Pakistan using the World Bank method and shows that it was high during the first three phases of exchange rate regimes. However, in the last phase with flexible exchange rate post-2000, liberalization policies led to the reduction in capital flight pattern due to a fall in the cost of illegal CF. The possible logical argument may also be that because of the capital account regime with financial openness, investors demonstrated confidence over risk and security in the domestic market as they were free to move funds abroad without any restriction after these liberalization policies. Nevertheless, the rupee has devalued against the U.S. dollar significantly between 2000 to 2019[9], especially in the recent few years. Now, contrary to this argument and in accordance with what is discussed in section 3, our analysis suggests that the effect of

currency devaluation on CF in Pakistan from 2000 to 2019 was greater than the effect of financial openness. This is consistent with overall CF estimates and currency devaluation over time. Therefore, currency depreciation has boosted CF in Pakistan after adopting a flexible exchange rate regime.

Furthermore, risk, return, and tax regulations in Pakistan are also important to consider to analyze the effect on the CF as a possible cause. Pakistan is one of the lowest taxpayer countries in the world as a percentage of the total population. As per reports of the Federal Board of Revenue (FBR, 2018), although the corporate tax rate has been between 25 to 35 percent from 2005 to 2019 there are more than 3.5 million non-tax filers in the country. The tax collection is highly unregulated and it is less than 15 percent of GDP. Between 2000 and 2008 it decreased from 15.8.

Percent to 13.2 percent of the GDP and then increased to 15.3 percent in 2017 (World Bank, 2017)[10]. Keeping in mind that the tax net is not wide, and the regulation is weak, tax evasion is expected to be very common in Pakistan both at the corporate level and individual level. Therefore, from our discussion in section 3, it is understood that the capital should not have flown out of the domestic market rather tax evasion opportunities should have incentivized foreign resident and non-resident investors to bring capital into the country. However, that is not the case for the estimates as well. Along with taxation and return, risk and security of investment are also very important. Without going into the details, the political instability of changing regimes and the lack of institutions in the country have caused fear among foreign investors and local asset holders. Therefore, the risk and security impact seems to be predominant over weak taxation and high return (low cost) opportunities within the country. Hence, capital flew out from 2000 to 2018. Lastly, the empirical assessment of the impact of corruption on capital flight. This raises many important questions which are important for the issue of CF. It is widely believed that corruption is a serious concern in developing countries with weak institutions. For the questions about the measurement of corruption as a governance issue, if the accurate measurement is not possible in developing countries, should the issue of corruption be undermined at all? If not, we must rely on the best possible option. Hence, we have used one of the most trustworthy indices (CPI) among possible options to consider corruption. As mentioned before, CPI is used in many recent important studies on corruption. Moreover, different indices do not show much of a measurement difference interestingly as mentioned in the above sections. Next, the idea of our analysis is to not find any causal relationship between corruption and capital flight but to observe the relationship between the two whether it is large enough in the case of Pakistan. For many developing countries, especially in Africa, corruption estimates over 10 percent of exports and GDP in many cases. Although Pakistan has slightly improved over corruption scale between 2003 and 2018. Likewise, the scale of capital flight is also large enough as a percentage of GDP irrespective of increasing or decreasing trend. Hence, the linkage between the two remained a concern for our analysis. As shown in section 2, there have been various attempts in the literature on the relation between CF and corruption. This paper attempted to do the same in the case of Pakistan. Generally, there is no increasing or decreasing trend in data on capital flight and corruption in Pakistan between 1990 and 2017. The absence of any specific trend between these two is simply the fact that other economic indicators have a strong impact as well and play an active role in capital flying out of the domestic economy. However, there exists a significant positive impact of corruption on CF only when all other variables are held constant. This is important to stress that other variables are controlled in this analysis. It is also consistent with literature which shows a significant and positive relationship between corruption and capital flight.

6. Conclusion and Recommendations

Although it is hard to precisely quantify capital flight from any country, there is broad consensus in economic and political literature that these illicit flows have a profound negative impact and are of great consequence, especially in reducing investment funds which can complement external debt and foreign aid to boost economic growth in developing countries. In addition, even as a response to tax net and investment risks, the illegal financial flows harming the public benefit are not morally justified which

is beyond the discussion of the theoretical framework. This paper aims to examine the correlation between corruption and capital flight in Pakistan. It was inspired by the current socio-economic situation in the country regarding the current account, external circular debt, capital flight, and lack of governance for serious issues like corruption, illicit capital flows money laundering, etc. It discussed the main economic causes of capital flight from a theoretical point of view as well as the empirical evidence from the literature. These various causes are analyzed and discussed in the case of Pakistan in a policy section.

The empirical assessment has the following results. Corruption does have a positive and significant impact on capital flight in Pakistan. However, it is very important to consider that this relationship only holds when all other factors of capital flight are held constant. Otherwise, other economic indicators have also a much stronger impact on capital flight compared to capital flight. This is also clear from our findings.

The analysis and evidence from this paper call for further research on the links between liberalization, exchange regimes, inflation, interest rates, return differentials, and CF in the case of Pakistan. Moreover, the much-needed tax reforms, and regulations, and their widening are important for their impact on current and future capital in the country. Natural resource endowment, dependence on it as a percentage of GDP, and its impact on capital flight should also be a policy.

The concern that needs regulation for potential gains. Moreover, the role of foreign direct investment has not been discussed in our paper, which plays a significant role in capital account, current account, debt repayments, investment climate, etc. It would be interesting for future research to explore its impact and repercussions. Similarly, the discourse on foreign aid and its link with corruption and capital flight is also interesting. Lastly, CF and corruption as a governance issue need strong institutional measures and accountability which need to be taken care of not just by political setup but also supplemented by favorable economic policies to stop cross-border illicit flows. However, capital flight is not just a consequence or symptom of political and economic instability, rather it is an element of cause for instability as well. Therefore, the responsibility lies in the offshore financial sectors in their domain to stop incentivizing such funds using various secrecy tools.

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