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Research Article **Open Access**

CORRUPTION AND CAPITAL FLIGHT: EVIDENCE FROM PAKISTAN

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Abstract

The objective of this research paper is to analyze the impact of corruption and capital flight on Pakistan economy. The author used cross sectional data from 1995 to 2018 for this purpose. The dependent variable of this study was capital flight while independent variables include corruption perception index (CPI) gross domestic product (GDP) capital flight (CF), inflation (INF), exchange rate (EXR) and interest rate. Different econometric techniques such as descriptive statistics, correlation analysis, Augmented Dickey Fuller (ADF) test and Autoregressive Distributional Lag (ARDL) and ECM were applied to analyze data. The findings of this study show that there is positive and significant positive relationship between corruption and capital flight. Thus, corruption must be eradicated to control capital flight.

Keyword: Corruption; Capital flight; Inflation; Exchange rate; Interest rate.
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1. Introduction

The capital is very difficult phenomenon to understand and the measurement of the capital flight is the most difficult task. The capital flight is defined as the transfer of the money or other assets to others countries due to the economic crisis such as the corruption and poor governance. Due to these events there is an increase in the taxes on the capital which disturbs the investors and pressurizes them to decrease the valuation of their assets in the host country. This can also cause to relocate of assets from one nation to another nation, causing depreciation of exchange rate and devaluation of currency. This financial crisis is spilled over all-around the world and causing fear of world economic crisis in the presence of high level of the capital flight. This decrease in the tax revenue as well as it also declines in per capita income. (Collier, Hoeffel and Pattilo (2001). Pakistan is also facing problem of capital flight due to corruption, poor governance, tax evasion, black economy, bribery, and hidden contracts with the foreign investors. Due to these reasons a large inflows and outflows of the capital are occurred in Pakistan. During the military government in years 1977 to 1988 Pakistan received the large amount of foreign Aid for winning the war against USSR. The Aids were received in a bulk amount from the United States to support Pakistan. In 1988 when the power of democratic government was in action then it was believed that Pakistan was enjoying the status of high economic growth. But again due to political conditions such as the corruption, Pakistan suffered financial crisis. This political condition of the economy was in favor of the growth of the economy and the investment. The environment of the investment and the country reserves to touch the level of the $500 million and the reasons behind

this was only the low level of the confidence of the domestic investors to invest in the country. In 2000, there was again high capital flight from the Pakistan to the London, European Union UAE and other countries due to the poor governance, political instability and the corruption.

1.1 Main research problem

The main research problem of this study is to find out the link between corruption and capital flight in Pakistan and to explore their causes as well as their effect on the economy and society. Corruption and capital flight are two vital issues confronting Pakistan's economy for a long time and they need in-depth research on these issues. All anti-corruption institutions have failed to control them and appear helpless. This prompts the author to probe into these issues and suggest their possible solution in order to eradicate these evils from the society.

1.2 Objectives of Study

The objectives of the study are stated in the following: -

- To study the causes of corruption on capital flight in Pakistan.
- To analyze the impact of corruption and capital flight on exchange rate in Pakistan.
- To investigate the impact of corruption and capital flight on Pakistan's Economic growth.
- To determine relationship between corruption, capital flight, inflation and interest rate.

1.3 Scope of study

As the title of the paper itself reveals the importance of this study for policy makers, new researchers and general readers. Corruption and capital

flight are the two key issues of developing countries due to which their economies have been facing instability and fragility since long. This creates rationale of this study to investigate into the causes and possible solutions of these chronicle issues to create insight for policy makers of all developing countries. Thus, the findings of this study will be more valuable for all stakeholders.

2. Literature Review

Mwangi et al (2019) analyzed the association between corruption and capital flight in Kenyaduring the period of 1998-2018.The corruption was calculated through corruption perception index. The findings of study showed that there was negative impact of capital flight on economy and distribution of income. The variables included in the study were GDP growth rate, real exchange rate, capital flight, corruption index and GDP growth rate. The statistical techniques used in the study were ADF, ARDL, co integration test, Multi-collinearity, Heteroscedasticity and the bound tests. Shabir Jan et al (2019) explored the effect of the corruption on foreign direct investment in the East Asian countries. Foreign Direct Investment was increased after globalization as the restriction of the movement of capital was lifted. The study used panel data of 39 countries of the Asia on for the period from 1995 to 2014. The results of study showed that the inflation had negative but significant relationship with the FDI. The real interest rate had also negative effect on FDI inflows. It was also found that the corruption is not good for the country like Pakistan was ranked 23rd in the list of 39 Asian countries. Ajaji (1995) examined the capital flight and the external debt in Nigeria. This study investigated the magnitude of the capital flight and its crash on the society. In this paper the relationship of the capital flight with the external debt and the other factors have been examined using the different mechanism. The

variables in the research were the external debt, capital flight, growth in GNP, gross investment of the GDP, current account balance and change in the external debt. This research paper used the time series data ranging from the 1972 to 1989. The methodologies in this research were the correlation, bound test and the VAR specification. Ahmad and Sahto (2015) analyzed the determinants of capital flight from Pakistan. The study explained that there were basically the five determinants of the capital flight which were: foreign direct investment, external debt, inflation, exchange rate, foreign exchange reserves and gross domestic product. This study used time series data for the period from1997 to 2011. The findings reveled that capital flight had negative effect on foreign direct investment, external debt, inflation, exchange rate, foreign exchange reserves and GDP. Javorcik and Jin Wei (2009) investigated corruption and cross boarder investment in emerging markets. Basic purpose of the research was to investigate level of the foreign direct investment both inward and outward. This inward foreign direct investment was calculated with the data set based on the firm's level. The results revealed that corruption has negative impact on economy and reduces the level of the foreign direct investment. This research explained the nature of corruption and its impact on the economy. Corruption decreased the protection of valuable assets of investors and also decreased the probability in which domestic and foreign investors adjusted themselves in proper manners. The conclusion of the study was that the corruption reduced foreign direct investment inward and moved the structural ownerships towards the joint ventures. Jeanne and Gourinchass (2007) analyzed capital flows to the Emergent states. The focus of this study was total productivity of different countries and impact of the capital flight on economic growth of different countries. The study explained the conditions

which attracted foreign capital inflow. The findings of the study disclosed that foreign capital was misappropriated in the emerging economies that resulted in the outflow of capital to developing countries. It had negative effect on emerging economies. Herkenrath (2014) examined the illicit movement of the financial assets which were explained as movement of the capital across boarders for the purpose of the earning illegal money with the illegal economic activities. To stop illegal movements of the financial assets including the money and the capital were the major challenge to the developing countries.

This study used the case study of the different countries by using panel data ranging from the 2002 to 2011. The variables included in this study were capital inflows, tax evasion, corruption, and investment. The results show that there was a negative relationship between capital flows and the investment, as the capital outflows increases which caused decrease in the domestic and foreign investment. Carlos and Abdullah (2015) measured the impact of the illicit flows of capital on the domestic resources mobilization in African countries. The underlying motive of the study was to investigate the misappropriation of mineral resources. The results of the study revealed that economic growth was reduced due to illegal inflow of financial assets to African countries. The study found that illicit flow of assets also decreased the level of mineral resources available for domestic consumption. It was concluded that illegal economic activity or misused of resources caused financial constraints, economic crisis and political instability.

3. Research Methodology

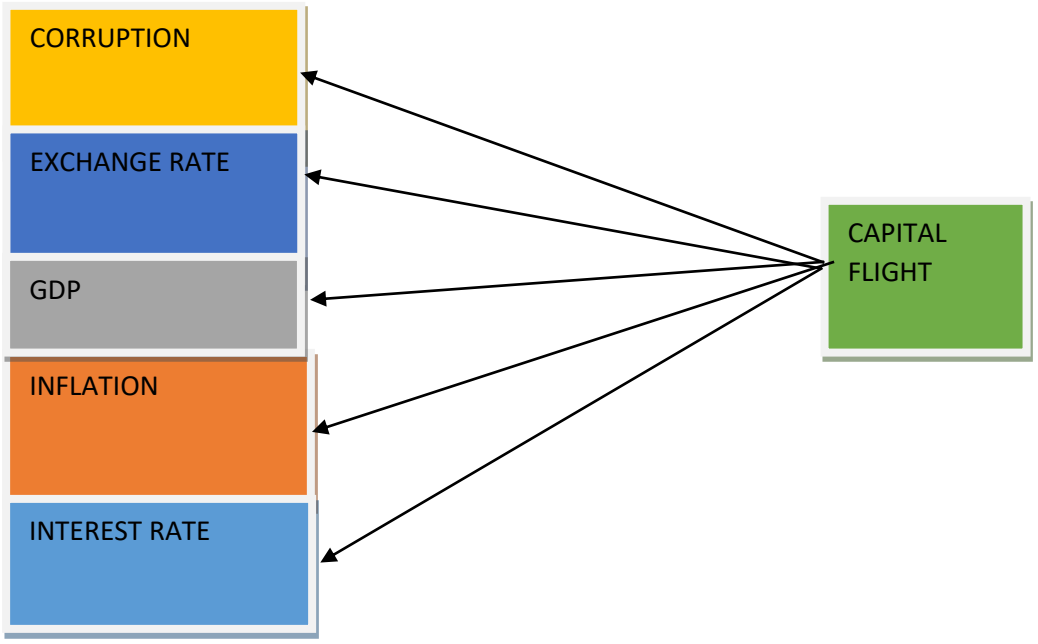
3.1 Research Design

The nature of the study is quantitative. We used annual time series data for the period from 1995 to 2018 to find the impact of corruption. Time series data is used to find out association between dependent and independent variables in long run. The dependent variable of the study was capital flight (CF) while independent variables included GDP, CPI (corruption perception index), CF (capital flight), Exchange rate, Inflation rate and Interest rate.

3.2 Conceptual Model

The conceptual model illustrates relationship between dependent and independent variables. The dependent variable is the capital flight and the other variables such as the corruption, GDP, EXR, INF, and IR are the independent variables. The model is shown in Figure 1.

Fig 1: Conceptual Model



3.3 Econometric Model

The econometric model of the study is shown in the following equation

$CF=\alpha_0+ \beta_1 (COR) +\beta_2 (IR) +\beta_3 (INF) +\beta_4(GDP) +\beta^5 (EXR) + \epsilon$

3.4 Analytical techniques

The authors used following statistical techniques to analyze data: -

- Descriptive statistics
- Correlation Analysis.
- ADF Test.
- ARDL Approach

4. Empirical analysis

4.1 Descriptive analysis

The descriptive statistics is used to check the nature of the normality of the data and examine the value of mean, median, maximum value, minimum value, JB value and the probability of the variables. The results of descriptive statistics are given in Table 1.

Table 1: Results of Descriptive analysis

Variables	Mean	Median	maxi	Mini	S.D	Skewness	kurtosis	J.B	P
CF	0.75392	0.628945	2.6618	-0.60263	0.98455	0.318788	1.985532	1.435	0.487
EXR	71.7395	61.3328	111.126	31.6426	24.7512	0.18563	1.76827	1.65499	0.4371
GDP	3.88521	4.48619	7.03509	-3.95 09	2.6884	-1.8062	5.87769	21.33	0.0000
INF	0.2088	7.82020	24.891	2.46309	5.7487	1.11104	3.33113	5.035	0.08

IR	12.4539	13.0777	15.4200	6.99000	2.3826	-1.2199	3.4024	6.11504	0.04

Table 1 explains the normality distribution of variables. The average value of the CF is 0.753924, median is 0.628945, maximum value is 2.661873, minimum value is -0.602634 and the S.D is 0.9984550. The CF is positively skewed and the value of the Skewness is 0.31878. The kurtosis value of the CF explains that the CF is leptokurtosis with the value of 1.985532. The J.B value of the CF explains that the CF is normally distributed. The probability value of the CF explains that the CF is insignificant with the p value is 0.4878. The means value of the CPI is 26, median 25.500, maximum 33, minimum 22 and the SD is 3.589260. The skewness vales of the CPI show that the CPI is positively skewed. The kurtosis value of the CPI shows that the CPI is LAPTOKURTOSIS. The J.B value of the CPI explains that the CPI is normally distributed with the p value is 0.33 that shows the CPI is insignificant. The means value of the EXR is 71.73957, median is 61.3324, maximum value is 111.126, minimum value is 31.64268 and the SD are 24.45127. The EXR is positively skewed and the kurtosis value of EXR is 1.768273. This value shows that the EXR is Plato kurtosis. The J.B value of the EXR shows that EXR is normally distributed. The mean value of the GDP is 3.885211, median is 4.486194, maxi is 7.035917, mini is -3.950917 and SD is 2.688494. The GDP is negatively skewed and the kurtosis value of the GDP shows that the GDP is Lap-to kurtosis. The p value of the GDP IS 0.0002 shows that the GDP is significant and the normally distributed according to the J.B value of the GDP.

4. 2. Correlation Analysis

The correlation is used to check the degree of the association among the relative actions of the two variables. The range of correlation lies between -1 and +1. There was error in the measurement in correlation when the calculated value is greater than 1. There are the two type of the correlation: Negative and positive correlation. The results of correlation analysis are shown in Table 2.

Table 2: Results of Correlation Analysis

Variables	CF	CPI	EXR	GDP	INF	IR
CF	1.000000					
EXR	0.75497	0.63245	1.000000			
GDP	-0.10284	-0.24840	-0.23659	1.000000		
INF	-0.10891	-0.515117	-0.14311	-0.03500	1.000000	
IR	0.15914	-0.58781	0.058781	0.15238	0.412121	1.000000

Table 2 shows the correlation among the variables. It shows the correlation between the CF and Exchange rate is positive and the value of the correlation is 0.754076 that shows positive correlation. The correlation value between capital flight and GDP is -0.102828 that shows the negative correlation between the capital flight and the GDP. This value of the correlation shows the negative correlation between two variables. The correlation between the capital flight and INF is negative with the value of -0.108911 and this value explains negative correlation between two variables. The correlation between the capital flight and interest rate (IR) is positive. The

value of the correlation between the capital flight and IR is 0.159143. There is the positive correlation between inflation (INF) and exchange rate (EXR). The value of the correlation between the INF and exchange rate is 0.632459 and this value explains the positive correlation between two variables. The correlation between the GDP and INF is negative with the value of the correlation-0.248400. This value of the correlation shows that there is negative correlation between GDP and INF. The value of the correlation between GDP and EXR is negative with the value of the correlation is -0.236600. From the value of the correlation, it is clear that there is negative correlation between the GDP and EXR. The correlation between the INF and CPI is negative. The correlation between the INF and EXR is negative with the value of the correlation value -0143115.

4.3 Augmented Dickey Fuller (ADF) Test

The ADF is used to check the stationarity between selected variables. If the coefficient of the variable has the "spurious regression" problem than the assumptions of the BLUE are not satisfied. To remove this problem of the spurious regression the dickey and fuller developed ADF test.

The augmented dickey fuller test is based on the following equation

$$\Delta Y_t = \gamma Y_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Y_{t-i} + \varepsilon_t$$

Where Δ= operator of the first difference

^{p} = Operator of the lag

^{t} =time

€= The error term

There are three possibilities of the ADF test which are given below

- Without trend and intercept

- With trend and intercept
- With intercept.

The results of ADF Test are shown in Table 3.

Table 3: Results of ADF Test

Variable	Level			1st difference			Conclusion
	Intercept	T&I	NONE	Intercept	T&I	None	
GDP	-3.01821* (0.04)	-3.01045 (0.014)	-1.83384 (0.06)				L(0)
IR	_	_	_	-3.1521*	-3.1141 (0.01)	-3.209 (0.02)	L(1)
CPI	_	_	_	-3.991096** (0.0061)	-3.973728 (0.025)	-3.9695 (0.0004)	L(1)
INF	-4.7491* (0.001)	-4.6724 (0.005)	-1.13051 (0.15)				L(0)
EXR	_	_	_	-3.4671** (0.017)	-3.3782 (0.08)	-2.2447 (0.02)	L(1)
CF		_	_	-4.19002* (0.003)	-4.3084 (0.01)	-4.12273 (0.003)	L(1)

The calculated results show the (*, **, ***) level of the stationary at 1%, 5% and the 10% level. The results show the mixture of the level and first difference of the integration. The GDP and INF are stationary at level and the level such as CF, CPI, EXR, and IR are stationary at first difference. We set the criteria in which the P value is less than 0.05 and the absolute F statistics is larger than critical value having the minus sign. Thus, we can use ARDL Model for analysis.

4.4 ARDL Model

The Auto Regressive Distribution Lag model is used to investigate long run association between variables. The ARDL model was developed by the Pesaran and Shin in year 1999 and was later used by the Pesaran in 2001.The ARDL approach is basically OLS based model which include both non-stationary time series data with mixed order. The first step in the ARDL is to calculate the Bound Test to confirm the long run relationship between variables. There are following steps of the ARDL Model, bound test and Error Correction Model to determine long and short sun association between variables.The general form of the model is given below

$$Z_t = a_0 + \sum_{j=0}^{q} \beta_j L^j X_t + \sum_{j=0}^{p} \gamma_i L^j Z_t + \varepsilon_t$$

Where

L shows the lag operator

L^j=X_{t-1} shows the variable in the model and lags.

$$\begin{aligned}\Delta CP_t = a_0 &+ \sum_{i=1}^{p} \beta_i \Delta CP_{t-i} + \sum_{i=1}^{p} \varphi_i \Delta CPI_{t-i} + \sum_{i=1}^{p} \gamma_i \Delta GDP_{t-i} \\ &+ \sum_{i=1}^{p} \delta_i \Delta EXR_{t-i} + \sum_{i=1}^{p} \sigma_i \Delta INF_{t-i} + \sum_{i=1}^{p} \rho_i \Delta IR_{t-i} \\ &+ \lambda_1 CF_{t-1} + \lambda_2 CF_{t-1} + \lambda_3 GDP_{t-1} \\ &+ \lambda_4 EXR_{t-1} + \lambda_5 INF_{t-1} + \lambda_6 IR_{t-1} + \mu_t\end{aligned}$$

In this equation the symbol β, ϕ, p,γ_i,δ, $\sigma_i$shows the dynamics of the short run of thee model and all λ_s shows the long run association. There are the two steps in the ARDL model. The first step is the bound test to find out the long

run connection between the variables and then the long run relationship between the variables are explained.

4.4.1 Steps of the ARDL Model

There are three steps in the ARDL model which are as follows: -

- Bound test
- Long run association
- Vector error correction model

4.4.2 Bound Test

The bound test is used to check the long run association between variables. We set Akaike information criteria to find out the long run relationship between variables. Persian was the first person who introduced the bound test in 2001 to examine the long run association between variables. The basic objective of the bound test is to check the presence of the co integration. In the bound test the F statistics is used to compare with the tabulated f statistics critical values. There are the two set of critical values which are given below

- Upper value bound (1)
- Lowe bound value (o)

When the significance of F statistics is greater than upper bound test of the tabulated F value it shows the presence of co integration between variables. When the estimated value is less than lower boundary value it will show there is no co integration between the variables.

Table 4: Results Bound test

F STATS	**2.47**	
CRITICAL VALUE	**LCB**	**UCB**
10%	2.45	3.52
5%	2.16	4.01

From the above table it is clear the long run association between variables exists as the value of the F stats is greater than lower boundary and less the higher boundary at 10% and the 5% level. As F statistics is greater than the lower boundary and less then upper boundary at the 5% then we will reject null hypothesis and accept alternative hypothesis that there is long run relationship between variables.

4.4.3 Long Run Association

The two variables are said to have long run association when these variables are moving in the same direction over the long time and these relationships are stable during study period. The results of long run analysis are shown in Table 5

Table 5. Results of long run relationship

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
CPI	0.543540	0.184016	2.953767	0.0183
EXR	0.019764	0.016225	1.218097	0.2579
GDP	0.605622	0.251112	2.411754	0.0424
INF	0.255753	0.099748	2.563998	0.0334
IR	-0.113108	0.160375	-0.705268	0.5007
C	-17.952991	5.605284	-3.202869	0.0126

Table 5 shows the long run relationship between variables. In this table, the dependent variable is capital flight. The corruption is positively related to the capital flight with the p vales 0.018 and t statistics is 2.95. The p value shows that the CPI is statistically significant and positive effect of the capital flight (CF). The exchange rate had positive relationship with capital flight in the long run as the p value is 0.25. This p value indicates that the exchange rate is positive but insignificant impact on the capital flight in the long run. The GDP has optimistic and significant association with capital flight in the long run. The p value is 0.04 indicates the significant relationship between the GDP and the CF.

4.4.4 Error Correction Model

The short run co integration between variables can be explained with the Error Correction Model (ECM). The Sagan was the first person who was used this model in 1964. The error correction model is used to check the equilibrium and disequilibrium in the economy from one period to another. The significance level of the ECM is at the 1% with the negative sign. The range of the ECR is from the 0 to 1. When the value of the ECR is greater than 1 it means the economy moves in the disequilibrium condition in the next year. The general form of the ECR is given below

$$\Delta Y_t = a_0 + b_1 \Delta Z_t - \pi \mu_{t-1} + Y_t$$

b_1=short run impact multiplier

π= adjustment effect

The calculated results of ECM are given in Table 6: -

Table 6 Results of ECM

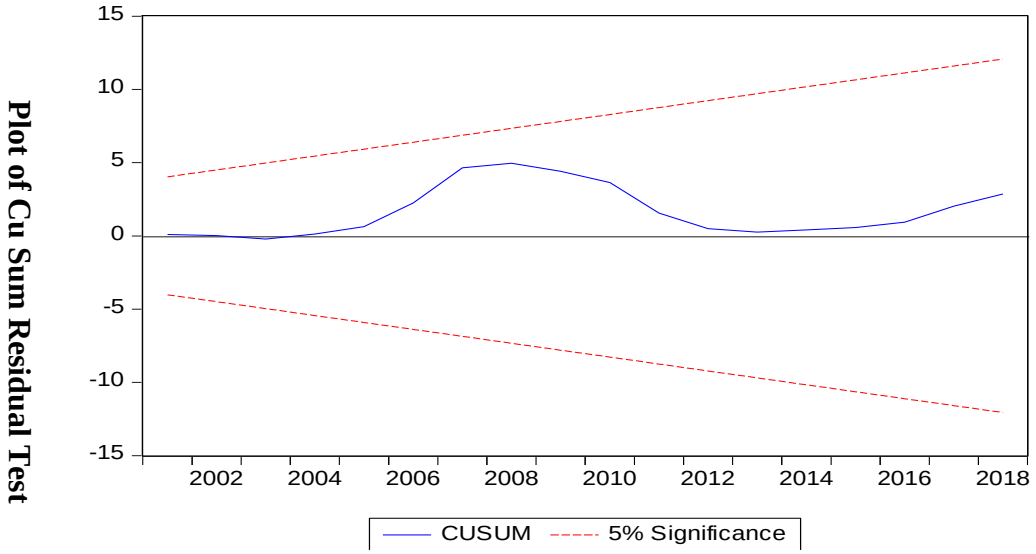
Variables	Coefficients	Std Error	t-Statistics	Prob
D(CPI)	0.020071	0.044574	0.450284	0.6645
D(CPI(-1))	-0.124223	0.018762	-6.620974	0.0002
D(EXR)	-0.021107	0.013167	-1.603098	0.1476
D(GDP)	0.096681	0.015606	6.195221	0.0003
D(GDP(-1))	-0.112756	0.019036	-5.923210	0.0004
D(INF)	0.016466	0.009677	1.701575	0.1272
D(INF)	-0.032354	0.008374	-3.863670	0.0048
D(IR)	-0.029350	0.036416	-0.805975	0.4436
CointEq(-1)	-0.259490	0.083925	-3.091915	0.0148

The process of the short run is adjusted with the help of the coint with the value -0.259490. The range of the coint is between the zero and 1. The above table explains the relationship between variables in period t and period t-1. The value of the dependent variable is 0.259490 which shows that there will be 25.94% adjustment towards the equilibrium in the economy. GDP also shows the positive association with the capital flight and this result is confirmed by the findings of the mercy w. mwangi (2018). There is also a positive association between capital flight and corruption in the short run and this relationship is insignificant because its P value is 0.66.

4.6 Stability Test

The stability test is explained with the help of the CUSUM and CUSUM square test. The graph is significant at the 5% of the significance level where the blue line is between two red lines. The Cu sum means the cumulative sum. Pesaran (1997) first used the Cu sum test to check stability in the data during study period.

Fig 2: Results of Cu Sum Residual test



5. Findings of study

The basic objective of this study was to examine the relationship between corruption and capital flight and their impact on the economy of Pakistan. For this purpose, we used secondary data from the 1995 to 2018. We have taken corruption (CPI), capital flight(CF), inflation, exchange rate (EXR), real interest rate (IR) and gross domestic product (GDP) as variables of study. We collected data from the different sources such as World development indicators, International Monetary Fund and the data of corruption was

measured through corruption perception index. The data of capital flight was obtained by using the STATA software through residual method. The correlation analysis was used to check the degree of association between variables. The results of correlation analysis show that capital flight, corruption and interest rate are positively correlated while exchange rate, inflation and GDP growth are negatively correlated. We used ADF test to check stationarity between variables. The result of the ADF test shows the mixture of the variable stationarity at the level and the first difference, so the ARDL technique was used to check the long run and short run relationship between variables. The findings of the ARDL Model show the existence of long run relationship between independent and dependent variables which was also confirmed by the Bound Test. The result of the ADRL model shows there is positive and significant relationship between corruption and capital flight. Thus, it is imperative to eliminate corruption to control capital flight which generate economic fluctuations and business cycle again and again with certain interval.

6. Conclusions

Pakistan has been facing high volume of corruption and capital flight since long tie and due to this reason every new government will have to approach International Monetary Fund and other world financial institutions for seeking loans to meet trade and budgetary deficits. Its currency has been depreciating continuously increasing volume of debt and rising prices of imported goods. Hundreds of Pakistan involved in corruption are living abroad in different countries without any fear. This is a matter of grave concern for the people of Pakistan.

The empirical results of this research study show that there is a positive and significant relationship between corruption and capital flight. Although multiple agencies are working officially to eradicate corruption from the society yet they have so far failed to control it and it is rising day after day, making the lives of poor people more miserable. It is the time not only to take stringent measures to eradicate corruption but also generate hatred among all sections of society against it through media campaign or public awareness initiatives.

7. Practical implications & Contribution of study

As our empirical results have proved that corruption and capital flight has positive relationship we must understand its negative consequences for the economy, society and the people. Corruption causes income inequality in the society and some persons become richer over nightly and create frustration for those whose income remain at the same level for a long time. The corrupt persons spend and live lavishly vis-à-vis those who opt honest practices and spend simple life. Income inequality is very dangerous because it divides the society into two classes: rich and poor and weaken the foundation of national unity and uniformity in the living standard. Moreover, the capital flight creates scarcity of resources in the country and the government will have to borrow money from foreign donors to meet its budgetary expenditures. Similar, the bank raises interest rates for borrowers resulting in the cost of doing business. Corruption mostly develops due to weak governance and fragile legal and judicial system. When corrupt persons are freely moving and law enforcing agencies are reluctant to bring into legal net or put behind the prison it create frustration and resentment against anti-corruption agencies as well as against the siting government. The society which is in the grip of corruption lost the importance of moral values and these values are used just as a political slogan

to appease the sentiment of common man. In addition, it generates competition for maximization of wealth through illegal means which ultimately will lead to the society to anarchy and chaos. The economic history of many developing countries proves the fact that all rulers worked for increasing economic growth so that more and more wealth may be created. But the wealth created as a result of economic growth was never used to uplift the living standard of the people but it was syphoned off as was seen in Afghanistan when its president, Abdul Ghani fled the country with reported $300 million after departure of US forces. The end result is that all developing countries including Pakistan and Afghanistan having suffering from absolute poverty since long. Thus, corruption is not a poison for Pakistan but also for the all developing countries and the results of this study are beneficial for the whole developing world. Corruption in developing countries also spoil the images of international financial institutions which finance mega projects in developing countries or finance governments' unproductive activities in which major portion of loans/funds is misappropriated. There is no mechanism of transparency in financial activities of foreign donor agencies and spending of funds on public development projects. This is the reason that general masses dislike borrowing loans from IMF, World Bank, etc, because money borrowed from these institutions do not bring any visible change in the lives of common people.

8.Policy Recommendations

In the light of above discussion, we would like to make following policy recommendations: -

- The International funding institutions like International Monetary Fund, World Bank and Asian Development must ensure the use of their loans in transparent matter, for development project or productive purposes by

borrowing country. It will create good image of these institutions among the people of borrowing country and lift their living standard.

- Corruption as matter of fact also contributes to the illegal capital flight. We have to take radical measures to reduce the level of corruption in the country. Anti-corruption activities should increase to stop the corruption.
- Strict policy measure to control capital flight as it has negative effect on exchange rate.
- Seminars and conferences may be organized in the educational institutions to generate awareness among young students to fight against corruption.
- It is necessary to make the public sector honest, transparent and accountable. The public sector employees must be motivated to work honestly and avoid corrupt practices. Honest employees must be recognized through cash award.
- In order to stop capital flight the interest rate may be increased for creating attraction and motivating the investors to keep money within the country.
- The salaries and wages of employees must be increased so that they may be able to meet their growing expenditures due to rising inflation.
- Amnesty schemes may be launched for those having money abroad to motivate to bring money back to country and invest in local project or financial activities without any fear.

9. Limitations and direction for future research

In this study we used the time series data ranging from 1995 to 2018. Corruption is very difficult to measure so our data set has short time span and is related to Pakistan. Time span may be expanded to get broader results. Another point is that corruption is committed by white color in sophisticated manner and it is very difficult to collect relevant data. So the authors faced a lot of difficulties in collecting data from relevant agencies. We used corruption

perception index to measure level of corruption in Pakistan. The other researchers can use other measurement techniques to draw the results. The agencies responsible for controlling corruption are National Accountability Bureau at Federal Level while Anti-Corruption Department are working at Provincial level. These agencies are very difficult to approach and to get real data from them because they keep their record very secret. The authors would have to rely on published data in the Newspapers released by these agencies. The new researchers may use primary data in their study to study the perception of people about corruption and capital flight and their possible effects on the economy and society.

Data availability statement

The data that supports the findings of this study will be available on request.

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Contribution of Authors

Both authors jointly carried out this research study and collaborated each other. The author 1 collected data, conducted its statistical analysis. She prepared initial draft of manuscript. The Author 2 helped Author 1 in selected of title of research, guided in statistical analysis and formatted final draft of manuscript. Both authors carefully read final draft of manuscript and find it fit for publishing. Both authors fully followed ethical values during the course of this research work.

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