Does corruption impede economic growth in pakistan economics essay

The present study investigates the impact of corruption on economic growth by incorporating financial development and trade openness in growth model in case of Pakistan. We have used time series data over the period of 1987-2009. We have applied structural break unit root test to test the integrating order of the variables. The structural break cointegration has also been applied to examine the long run relationship between the variables.

The long run relationship between the variables is validated in case of Pakistan. We find that corruption impedes economic growth. Financial development adds in economic growth. Trade openness stimulates economic growth. The causality analysis has exposed the feedback effect between corruption and economic growth and same inference is drawn between trade openness and corruption. Trade openness and economic growth are interdependent. Financial development Granger causes economic growth implying supply-side hypothesis in case of Pakistan.

Keywords: Corruption, growth, Pakistan

Introduction

In recent years, there is a wide spread of corruption in many countries of the world and especially in developing economies where its consequences has serious implications. The role of institutions in fostering economic growth has been recognized widely by the economists in these days. Existence of corruption in any country indicates the weaknesses of the institutions, thus, corruption is the output of weak institutions. A common definition of corruption is the abuse of public office for private gain (World Bank, 1997). Corruption is accepted in various ways such as bribery, the sale of public

property by government officials, kickbacks in public procurement, and misuse of government funds (Reinikka and Svensson, 2005).

Corruption is not an issue of one country or region but also it is a worldwide issue. Corruption retards economic growth and minimizes the chances of economic development in the developing countries. The misuse of the public office by the higher political as well as civilian authorities for acquiring national wealth has been taking place in the world at the expense of public welfare (Oni and Awe, 2012). According to World Bank, corruption is " the single greatest obstacle to economic and social development. It undermines development by distorting the role of law and weakening the institutional foundation on which economic growth depends". Corruption as a topic of research has attracted the attention of the economist of global financial institutions like World Bank and IMF in recent years due to its detrimental impacts on economic growth.

Economists have described five reasons behind the corrupt society or political set up, illegal accumulation of wealth and corruption in an economy. Firstly, corrupt government is the product of corrupt society and corrupt president cares corrupt government (Aburime, 2009). Secondly, the office of the political corrupt government collects national wealth illegally and become a major source of corruption in the country. Thirdly, the existence of a set of imperatives and incentives in the developing countries encourage the corruption transactions. These imperatives and incentives are such as widespread societal craze with materialism, high income inequality and poverty, exaltation and esteem of ill-gotten wealth by the general public and low and irregular salary packages for government employees with large

families to bring up (Frisch, 1996 and Aburime, 2009). Fourthly, accumulation of illegal wealth through corruption by the corrupt government encourages the other individuals of the society to have access and control over the means of corruption. In this way these corrupt individuals take the controls of the administrative process to have access to offshore accounts and practices of money laundering (Aburime, 2009). Finally, when there is no fear of punishment in a society corruption spreads very rapidly. Taxation systems in the developing countries have many flaws and unable to track down individuals' financial activities which further promote corruption in the society.

I. I Pakistani Context

The economy of Pakistan experienced a very sluggish rate of economic growth and a high level of volatility in its growth rate for the last five years. Moreover, Pakistan fail to achieve the set target of 5. 3 percent growth rate in the last eight years, average 2. 6 percent economic growth rate was registered in these eight years. There is a variety of reasons for this poor economic performance; increasing corruption is the dominating determinant that affected the economic growth in Pakistan. Corruption is the result of institutional weaknesses which discourages the economic growth of a country. Historical background of Pakistan flourishes that the most governance indicators have remained unchanged and corruption apparently spread to all gross root levels of federal, provincial and local governments. In 1995, Corruption Perception Index (CPI) was 2. 25 and Pakistan was considered among the most corrupt countries of the globe. Some routine efforts were made by the government of Pakistan to eradicate the corruption

from the country. Due to these efforts Corruption Perception Index showed some improvement in 1998, then it improved further to 2. 7 from 2. 53 in 1997 (International Transparency Report, 2007). Today, Pakistan on the basis of Corruption Perception Index is ranked at 139th out of 174 countries of the world, which means that 35th corrupt country of the world (International Transparency Report, 2012).

Pakistan is a country with weak institutions which is the biggest alone cause of corruption. Other reasons of corruption are; insufficient political will to eradicate corruption from the society, bureaucracy is the principal authority for the administration of institutes, salaries in the public sector are very low as compared to the other sectors of the economy and higher rate of inflation. The government bodies are held responsible for spreading the corruption in Pakistan because these bodies control and allocate public resources of the country. The department of police is supposed to maintain the law & order situation in a country but known as the most corrupt institution of Pakistan. In Pakistan police officers are appointed on the basis of political and bureaucratic connections. Thus, the police officers often have divergences of significance due to special loyalties[1].

Figure-1: Corrupion Index in Pakistan

The above graph is constructed to display the trend of corruption in Pakistan. It depicts that from 1987 to 1998 the corruption was gradually reduced. In 1999, the corruption again increased during the era of Musharraf’s coup, situation of corruption was slightly controlled due to slight improvements in governance. The country had performed better to reduce corruption by improving the rule of law and government effectiveness in 2002 and 2003. In

2005, corruption was worsened due to poor quality of governance in the country. It was indicated in Global Competitiveness Report (2007-08) that bureaucratic culture in the public sector as well as the poor quality of infrastructure and corruption, are the major hurdles for foreign companies to settle their business in Pakistan. Although corruption is a major problem in Pakistan but still it is a better place for new and existing businesses as compared to other countries of the region like India, Bangladesh, Sri Lanka etc (International Transparency Report, 2007). The corruption perception index ranked Pakistan at 47th corrupt country out of 180 countries of the globe. The survey of Transparency International (various reports) indicates the corruption factors and their results in terms of percentage are as follows; lack of accountability is 31. 68 percent, low salaries is 16. 54 percent, monopoly of power is 16. 43 percent, discretionary powers is 12. 61 percent, lack of transparency is 9. 97 percent, power of influential people is 4. 59 percent, red- tapism is 4. 28 percent, and others is 4. 9 percent (GoP, 2009-10). In 2009, the Corruption Perception Index score of Pakistan was 2. 4 which slipped the country to 42nd that declared high corruption in Pakistan.

II. Literature Review

The link between corruption and economic growth is not a new concept in the field of Economics. More than a few economists have tried to explore the impact of corruption on economic growth for the last many years, but there is hardly any consensus amongst economists on the role of corruption. The World Bank (2009) reported that the average annual economic growth rate of East Asian countries including Malaysia, Singapore, South Korea, Thailand, Hong Kong, Indonesia and Philippines was around 7 percent from 1986 to

1996, whereas it was very poor 2. 5 percent in the rest of the world. These countries excluding Singapore also experienced a high level of corruption during this period. Most of the earlier empirical studies before this period have discovered that corruption impedes economic growth but the coexistence experience of high economic growth and corruption in these countries questions the generality of these studies. Lack of identical yardstick to measure the corruption has given the inconclusive empirical results. The pioneering theoretical work of Leff, (1964) discovered a very interesting link between corruption and economic growth; corruption works like the engine of economic growth in the situation when bureaucratic delays and strict regulations imposed by the government enables the private agents to buy their way out of politically imposed inefficiencies. Thus, corruption enhances efficiency in an economy and leaves positive impacts on economic growth [Huntington, (1968); Summers and Heston, (1988); Acemoglu and Verdier, (1998)]. Similarly or contrary, few economists applied different models, in which the corruption speeds up the working process that enhances the efficiency of economic growth. Lui, (1985) used “ queue model” by suggesting that bureaucrats allocate business licenses to those firms that gives high amounts as bribe. The “ auction models” guided that biding method can enhance competence because most well-organized firms are frequently those who can give the maximum bribe (Beck and Maher, 1986 and Lien, 1986). Rock and Bonnett, (2004) investigated the relationship between corruption, economic growth and investment. They noted that corruption significantly promotes economic growth in case of China, Indonesia, Korea, Thailand and Japan.

On contrary, various studies exposed that corruption plunders economic growth by increasing the cost of business and also uncertainty in the decision making process[2]. Existing literature indicated four channels through which corruption reduces economic growth; first, corruption impedes economic growth by sagging the competence of infrastructure, second, corruption lowers public investment that in turn reduces economic growth through lowering the productivity, third, due to corruption low government revenues lowers the expenditures on health and education, which in turn lowers economic growth (Tanzi and Davoodi, 1997). Gupta et al. (1998) unveiled that corruption enhances and augments gain for rich people at the cost of poor segments of the population.

Following Barro's (1991) pioneering work, there has been a remarkable expansion in the empirical literature on economic growth and investment. Mauro, (1995) by using Business International Index (BI), found a significant negative relationship between corruption and economic growth. He also reported the inference for corruption and investment. Similarly; Mauro, (1995) investigated the impact of corruption on economic growth and found that one standard deviation decrease in corruption index increases economic growth by 0. 8 percent, keeping other things constant. Ehrlich and Lui, (1999) noted that government size and corruption are inversely linked with economic growth using the data of 68 developed and developing countries. Mo, (2001) used the data of 67 countries to analyze the relationship between corruption and economic growth. The empirical evidence indicated that corruption has an inverse impact on economic growth through political instability, flux and volatility. Furthermore, the rise and escalation in

corruption and political instability, wavering and unsteadiness, condenses human capital and share of private investment and ventures[3].

Later on, Shabbir and Anwar, (2007) investigated various reasons for perceived level of corruption in 41 developing countries. They included economic as well as non-economic determinants of corruption. Their empirical findings showed that increase in economic freedom, globalization and average level of income have reduced the level of corruption in these countries. But the level of corruption in developing countries is increased with the increase in the level of education. This implies that economic determinants are more important as compared to non-economic determinants in reducing the perceived level of corruption in developing countries. Asiedu and Freeman, (2009) probed the impact of dishonesty, sleaze and corruption on the firm’s level of investment in case of Latin America, Sub-Saharan Africa, and transition economies. They found that the relationship between corruption and investment varies across the regions, and no relationship was found in case of Latin America and Sub-Saharan Africa. They noted that corruption is a fundamental and crucial determinant of investment as recommended in case of transition countries. Ahmad and Ali, (2010) attempted to examine the impact of corruption on financial development in case of 38 countries by using the GMM estimation method. Their empirical exercise exposed that the augmentation in levels of corruption impedes financial development. Ali et al. (2010) investigated the relationship between corruption and economic growth. They noted that higher corruption in industrialized countries leads to lower economic growth and no relation between economic growth and corruption is found in non-

Asian countries but a positive relation exists between both variables in Asian countries.

In case of Bangladesh, Paul, (2010) unveiled the relationship between economic growth and corruption. He found negative relationship between corruption and economic growth during the rise of market economy in Bangladesh. Ugur and Dasgupta, (2011) reviewed the relationship between corruption and economic growth. They explored a negative link between corruption and economic growth in poor income countries and inverse link in high income countries. The direct effect of corruption on per capita GDP growth in poor income countries is statistically significant and negative (-0. 07 percent). The indirect effects through the public finance and human capital channels are higher (âˆ’0. 23 percent, âˆ’0. 29 percent, respectively). Hence, the total effect that satisfies the precision-effect test is âˆ’0. 59 percent. This should be interpreted as follows; a 1percent increase in perceived corruption index of a low-income country can be expected to decline economic growth by 0. 59 percent. The corresponding effect in ‘ mixed’ countries (including poor income and high income countries) is âˆ’0. 86 percent. Therefore, economic gains from reducing corruption in poor income countries can be increased if anti-corruption interventions are combined with a wider set of policies aimed at improving institutional quality and providing correct incentives for investment in human capital[4]. Recently, Saha and Gounder, (2013) collected data on 100 developed and developing economies to examine the impact of corruption on economic growth using polynomial regression. They reported that corruption has

inverse impact of economic growth. They suggested to designing a comprehensive economic, institutional and social policy to reduce corruption.

All of the above studies are the cross-countries case analysis. The domino effects and consequences of these studies are not unwavering since these studies have used cross-country data with fixed effects. However, in reality economic conditions are not analogous and corruption levels are also poles apart in urbanized and emergent economies. The recently developed econometrics procedures and methods have given significance to the time series analysis in order to ascertain a long and short run relationship between corruption and economic growth for country case study. Hence, the endeavor of this study is to fill the gap in economic literature by exploring the link between corruption and economic growth in case of Pakistan. The current study augments the literature by four ways: firstly, this study is an original and revolutionary effort by means of time series data over the period of 1987-2009. Secondly, the ARDL bounds testing approach to cointegration is applied to investigate the long run relationship between corruption and economic growth, which has never been used in the previous studies in case of Pakistan. Thirdly, Clemente et al. (1998) unit root test is used to test the order of integration of the variables in the presence of structural breaks. Finally, the VECM Granger causality approach is also applied to detect the direction of causal relation between the variables.

III. The Data, Modeling and Estimation Strategy

The data on trade openness (exports + imports) as share of GDP and domestic credit to private sector as share of GDP (proxy for financial development) has been obtained form GoP, (2011). The GoP, (2011) is

further combed to collect data on real GDP. The data on Corruption Perceptions Index (CPI) has collected from Transparency International (various reports). Our study covers time series data over the period of 1987-2009[5]. We have used population data to transform the series into per capita following Bowers and Pierce, (1975) and Ehrlich, (1977) and later on Shahbaz, (2012). The general functional form our modeling is as following:

(1)

We use log-linear specification for our empirical purpose. Log-linear specification provides efficient results[6]. The functional form of our empirical growth model is constructed as following:

(2)

where, is natural log of real GDP per capita, is natural log of corruption, natural log of financial development is indicated by , is natural log of trade openness per capita and is error term having normal distribution with zero mean and finite variance.

III. I ARDL Bounds procedure to Cointegration

This paper applies the ARDL bounds testing approach to cointegration developed by Pesaran and Pesaran (1997), Pesaran et al. (2000) and latter on by Pesaran et al. (2001) to investigate the long run relationship between corruption, financial development, trade openness and economic growth in case of Pakistan. The autoregressive distributive lag model can be applicable with out investigating the stationarity properties of the variables (Pesaran and Pesaran, 1997). Haug, (2002) has argued that the ARDL approach to

cointegration provides better results for small sample data set such as in our case as compared to traditional approaches to cointegration i. e. Engle and Granger, (1987); Johansen and Juselius, (1990) and Phillips and Hansen, (1990).

Another advantage of ARDL bounds testing is that unrestricted model of ECM seems to take satisfactory lags that captures the data generating process in a general-to-specific framework of specification (Laurenceson and Chai, 2003). The equation of unrestricted error correction model (UECM) is modeled as following:

(3)

The decision whether cointegration exists or not depends upon the critical bounds tabulated by Pesaran et al. (2001). The null hypothesis of no cointegration is and alternative hypothesis of cointegration between the variables is. Now turn is to compare the calculated F-statistic with LCB (lower critical bound) and UCB (upper critical bound) by Pesaran et al. (2001). There is cointegration among variables if calculated F-statistic is more than UCB. If LCB is more than computed F-statistic then hypothesis of no cointegration may be accepted. Finally, if calculated F-statistic is between lower and upper critical bounds then decision about cointegration is inconclusive. The stability of ARDL bounds testing approach to cointegration is analyzed by conducting diagnostic tests and the stability analysis. The diagnostic tests are comprised of serial correlation, ARCH test, functional form of model, normality of residual term, and white heteroskedasticity associated with empirical equation. The stability test of long and short run estimates is tested by using

the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares (CUSUMsq) of recursive residuals.

III. II VECM Granger Causality

From policy perspective it is necessary to know the causal relation between the variables. To do this we apply the standard Granger causality test augmented with a lagged error-correction term. According to the Granger representation theorem if there is cointegrating relationship between the variables, then there must be Granger causality between the variables at least from one direction. Engle-Granger, (1987) cautioned that if the Granger causality test is conducted at first difference through vector auto regression (VAR) method then it may be misleading in the presence of cointegration. Therefore, an inclusion of an additional variable to the VAR method such as the error-correction term would help us to capture the long run causal relationship. Therefore, if financial development, corruption and economic growth are cointegrated then we implement the Granger causality test with the VECM framework as follows:

(4)

where difference operator is and is the lagged error correction term, generated from the long run association. The long run causality is found by significance of coefficient of lagged error correction term using t-test statistic. The existence of a significant relationship in first differences of the variables provides evidence on the direction of short run causality. The joint statistic for the first differenced lagged independent variables is used to test the direction of short-run causality between the variables. For example,

shows that corruption Granger causes economic growth and corruption is Granger of cause of economic growth if . The hypotheses of joint (long-and-short runs) can also be drawn similarly.

IV. Results and their Discussions

Table-1 describes the descriptive statistics and correlation matrices. The analysis of Jarque-Bera normality test shows that all the series are normally distributed. This implies that the series seem to have homoscedastic variance. The correlation analysis points out that a negative and strong correlation is found between economic growth and corruption. Financial development and economic growth are positively and significantly correlated and same inference is about trade openness and economic growth but correlation is weak. Trade openness is positively correlated with corruption and financial development. Finally, correlation between financial development and corruption is negative and insignificant.

Table-1: Descriptive Statistics and Correlation Matric

Variables

Mean

10. 2265

0. 6768

4. 7104

3. 5541

Median

10. 2119

0. 7884

4. 4979

3. 5647

Maximum

10. 5047

0. 9932

5. 5794

3. 6612

Minimum

10. 0007

-0. 1232

4. 2979

3. 3368

Std. Dev.

0. 1318

0. 3058

0. 4171

0. 0918

Skewness

0. 5076

-1. 3176

0. 9066

-0. 7718

Kurtosis

2. 6674

3. 6808

2. 3802

2. 6935

Jarque-Bera

1. 0939

0. 7100

3. 5191

2. 3737

Probability

0. 5787

0. 4870

0. 1721

0. 3051

1. 0000

0. 7090

1. 0000

0. 9469

0. 4975

1. 0000

0. 0830

-0. 1908

0. 0650

1. 0000

We apply the ARDL bounds testing approach to cointegration between the variables for long run relationship. The bounds testing approach is flexible with respect to the unit root properties of the variables as compared to traditional cointegration approaches. These conventional techniques require that variables must be integrated at I(1). The ARDL bounds testing approach to cointegration requires that no variables should be stationary at I(2). The ARDL bounds testing assumes that order of integration of the series is I(0) or I(1) or I(0) / I(1). The procedure of the ARDL bounds testing to compute F-statistic becomes invalid if any series under estimation is stationary at I(2). Various unit root tests such as ADF, DF-GLS, PP, KPSS, Ng-Perron are available to test the unit root properties of the variables. These tests are objectionable once the series suffers with structural break. To resolve this issue, we have applied Clemente et al. (1998) structural break unit root test. The structural break unit root test developed by Clemente et al. (1998) provides information about two unknown structural breaks stemming in the series. This unit root test is superior and uses two models i. e. additive outliers (AO) model and innovational outliers (IO) model. The IO model updates about a sudden change in the mean of a series and an innovational outliers (IO) model specifies about the gradual shift in the mean of the series. The IO model is appropriate for the series which has sudden structural changes comparatively to steady shifts. The results in Table-2 specify that all the series have unit root problem at their level form[7]and corruption, financial development, trade openness and economic growth are found to be stationary at 1st difference. This implies that all the variables are integrated at I(1).

Table-2: Structural Break Unit Root Test

Variable

Innovative Outliers

Additive Outlier

T-statistic

TB1

TB2

T-statistic

TB1

TB2

-4. 482(2)

2001

2003

-7. 258(3)*

1991

2002

-3. 446(1)

2003

2005

-5. 587(3)**

1997

2006

-2. 081(3)

1998

2002

-10. 684(3)*

1994

2001

-5. 333(2)

1998

2004

-5. 480(1)***

1997

2001

Note: *, ** and *** indicates significant at 1%, 5% and 10% level of significance respectively.

This postulates that all the variables have same order of integration i. e. I(1) which is not against the assumptions of the ARDL bounds testing approach to cointegration. The ARDL bounds testing is a two step procedure to compute F-statistic for cointegration. The appropriate selection of lag length enables us to avoid the problem of biasedness of the ARDL F-statistics. The F-statistic varies with lag order selection. The second column of Table-3 provides information about lag length and we followed AIC criteria to choose suitable lag length of the series[8]. Our results imply that we can not use lag more than 2 in such small data. The ARDL cointegration analysis reveals that our calculated F-statistic is greater than upper critical bounds reported in Table-3. The results are statistically significant at 5 percent, 1 percent, and at 5 percent, once we treated economic growth, corruption and trade openness as dependent variables respectively. This indicates that we have three cointegration vectors in our empirical growth model which confirms the existence of cointegration between economic growth, corruption, financial development and trade openness in case of Pakistan.

Table-3: ARDL Bounds Testing Analysis

Bounds Testing to Cointegration

Diagnostic tests

Estimated Models

Optimal lag length

F-statistics

1, 0, 1, 1

6. 903**

0. 6611

[4]: 0. 8917

[1]: 0. 5707

[1]: 6. 8593

1, 1, 1, 0

10. 937*

3. 7221

[1]: 0. 5316

[1]: 2. 4454

[3]: 0. 1066

1, 1, 1, 1

1. 014

0. 0781

[1]: 0. 0375

[1]: 1. 3850

[2]: 0. 6007

2, 2, 2, 2, 1

8. 749**

0. 9835

[1]: 0. 1426

[1]: 0. 0026

[3]: 3. 8562

Significant level

Critical values (T= 23)

Lower bounds I(0)

Upper bounds I(1)

1 per cent level

7. 397

8. 926

5 per cent level

5. 296

6. 504

10 per cent level

4. 401

5. 462

Note: The asterisks * and ** denote the significant at 1%, 5% and 10% levels, respectively. The optimal lag length is determined by AIC. [ ] is the order of diagnostic tests. We use critical bounds generated by Narayan, (2005).

Table-4: Gregory-Hansen Structural Break Cointegration Test

Estimated Model

ADF-Test

-5. 766*

-4. 935**

-3. 987

-5. 185*

Prob. values

0. 0000

0. 0000

0. 0004

0. 0000

Note: * shows significance at 1% and 5% levels respectively. The ADF statistics show the Gregory-Hansen tests of cointegration with an endogenous break in the intercept. Critical values for the ADF test at 1%, 5% and 10% are -5. 13, -4. 61 and -4. 34 respectively.

We have applied Gregory-Hansen, (1996) to examine cointegration between the variables because the results of ARDL bounds test may be unable to identify the role of structural break stemming in the variables (This is main demerit of the ARDL bounds testing). The Gregory-Hansen, (1996) accommodates the single unknown structural break in series and based on Engle-Granger residual based cointegration test but it is superior to other traditional cointegration techniques. The results are detailed in Table-4. There is no empirical evidence about cointegration provided by Gregory-Hansen, (1996) once we used financial development as predicted variable. We have three cointegrating vector as economic growth, corruption and trade openness are used as dependent variables. This implies that the long run relationship between the variables exists in presence of structural breaks in the series of economic growth, corruption and trade openness over the period of 1987-2009 in case of Pakistan.

The next step is to find the marginal impact of corruption, financial development and trade openness on economic growth. The results are reported in Table-5. We find the negative impact of corruption on economic growth and it is statistically significant at 1% level of significance. This shows that a 1% rise in c