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The impact of corruption and financial development on economic growth in Pakistan: Do institutions matter?

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Corruption is considered as one of the major obstacles to the economic development of developing countries including Pakistan. Financial development and better quality of institutions are considered momentous factors to enhance the economic growth of a country. This study investigates the empirical relationship between corruption, financial development, institutions and economic growth in Pakistan covering the period of 1984-2018. To achieve the objectives of the study, the Auto Regressive Distributed Lag (ARDL) technique to co integration has been applied. The VECM Granger causality has also been applied to check the directions amongst the variables. The empirical results show that co-integration exits amid variables. The bidirectional causation is streaming from financial development towards economic growth and unidirectional causation is moving from corruption to economic growth. The empirical findings also confirm that corruption is the prime cause of the slower rate of economic growth in Pakistan. Consequently, there is a need to reduce corruption, improve the quality of institutions, and other creditors through which they efficiently observe the borrowers and encourage them to improve the efficiency, so that they can allocate resources and this aid flows to condense the corruption.

Keywords: Economic growth, Corruption, Financial development

INTRODUCTION

Corruption is now recognized to be a broad phenomenon in many developing countries of the world and its effects are not measurable (Svensson, 2003; Aidis & Van Praag, 2007; Lawal, 2007). Corruption affects economic growth both directly and indirectly (Lawal, 2007; Aliyu & Elijah, 2008). The indirect effect is more problematic in the long run in terms of economic distortion and inefficiencies due to corrupt practices. The direct effect of corruption might be increased and diverted through the cost of revenue or fund (Lawal, 2007). It is broadly examined that economic growth decelerates due to corruption. There are numerous ways to existence of corruption, but the major cause of the corruption is the flaw of watchdog agencies. These agencies cannot be effective where every key institution is compromised in (Meagher & Voland, 2006).

Economic growth generates supplementary resources which permit the state to fight against corruption successfully. The economy where economic growth is high represents a wealthier economy and it encourages corrupt activities (Bhattacharyya & Jha, 2009). "A common definition of corruption is the abuse of public office for private gain" (World Bank, 1997: Treisman, 2000; Svensson, 2005; Mathur & Singh, 2013; Ertimi et al., 2016). Corruption affects open economies inadequately and as a result, for the development of better institutions incentives are increased in those economies (Wei, 2000). Higher political and non-military personnel experts abuse people offices for gathering national income which has been occurring in the world to the detriment of welfare (Oni & Awe, 2012).

Corruption raises economic growth by allowing investors to evade the bureaucratic hindrance using "speed money" (Egger & Winner, 2005). Corruption is not effective to increase the productivity in those countries where institutions are efficient. Conversely, corruption is effective to increase the productivity in those countries where institutions are not efficient (Me´on & Weill, 2010). In contrast, corruption harms economic growth by reducing investment (Reinikka & Svensson, 2005). The connection amongst economic growth and corruption is a vague, according to researchers (Lawal, 2007; Aliyu & Elijah, 2008, Reinikka & Svensson, 2005).

The institutions recognized that corruption is one of the biggest hindrances to economic progress. It fades foundations of the institutions and the twists rule of law through which economic growth is constructed (Freckleton et al., 2014). It has been identified that factors of institutions like corruption's manifestation, increases the cost of firms doing business also decrease the output (World Bank report, 2005). Institutions significantly affect economic growth in the long term (Acemoglu et al. 2001, 2002, 2005). Factors of institutions are sturdily related to the over-all factors of output. The efficiency of growing is high-rise in that economies where quality of institutions and governance is better (Méon & Weill, 2006). The healthier institutions lead to high income which further cause to higher economic growth (Rodrik et al., 2004; Kauffman et al., 2005). The government institutions were established due to the behavior of the people who is appointed or elect to run the government institutions and then corruption itself visible (Idomeh, 2006).

The financial system is the influential part of an economy. Fundamentally, the economic agents who have fruitful investment forecasts, the funds are led to them (Schumpeter, 1911). The progress of the financial sector has extensive and encouraging influence on economic growth through providing financial resources to different sectors of the economy (Shahbaz & Rehman, 2012). The progress in sector of finance enhances economic growth through advance technology and capital accumulation (Anwar & Nguyen, 2011). Financial development means a financial system which is more developed. It promotes the investment through recognizing and financing the

opportunities for better business, to make use of reserves, observes the execution of executives, hedging, permits merchandising, to diversify of risk, and facilitates interchange of goods and services (Khan et al., 2005). These functions are considered as more efficient allocation of resources which further increase the economic growth (Creane et al., 2004; Khan et al., 2005).

Pakistani Context

The Pakistan's economy practiced exceptionally slow economic growth rate and still futile to attain the targeted growth rate, which is 6.2 percent (Pakistan Economic Survey, 2018-19). Pakistan's economic growth rate was improved 4.71 percent in 2015 and the growth rate in 2014 was 4.04 percent (Pakistan Economic Survey, 2015-16). The economy of Pakistan decelerated rapidly and hit the nine-year low economic growth rate, which is 3.3 percent in 2019 (Pakistan Economic Survey, 2018-19). The reason behind this poor performance might be a rising corruption or weak institutions. As corruption occurs due to the institutional weakness (Shera et al., 2014). Hence, corruption is harmful for growth. Corruption is extended at all levels, such as, federal, local and provincial governments. The Corruption Perception Index (CPI) has 2.00 scores in 1996. Government of Pakistan made various attempts to eliminate the corruption from the economy.

These attempts regarding Corruption Perception Index (CPI) indicate little upgrading in 1998 when its score was 3.00. Then again Corruption Perception Index (CPI) decreased by 1.50 scores in 2002 than it improved a little bit in 2012 to 2015 when it was 2.00 scores. There is slightly improvement in the Corruption perception index, which is 2.2 scores (International Country Risk Guide, 2017).

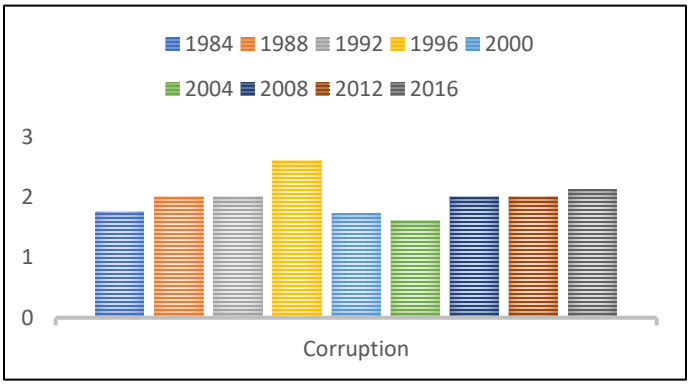

Fig 1: Corruption Perception Index

Sustained economic growth and financial system is contemplated as one of the most important cornerstones. There is a substantial upsurge in the demand for credit, particularly, comes from the increasing economic activities. Credit to private sector improved to 775.5 Billion Rupees in 2018 equated with 747.9 Billion Rupees in 2017. The credit to the private sector has been expanded of 580.9 Billion Rupees in 2019 and it was observed 498.5 Billion Rupees preceding years in the same period. The average growth is observed 9.7 percent throughout the period, and it was noticed 9.6 percent in the previous year (Pakistan Economic Survey, 2018-19).

Pakistan still suffers from the problem of corruption. Corruption in Pakistan has different forms such as financial and political corruption, favoritism and the bribery. Corruption hinders the economic growth and weakens institutions. If institutions' quality is improved, corruption will be condensed. This study has augmented the model of Musa et al. (2016) by adding financial development, inflation and quality of institution to inspect their impacts on economic growth of Pakistan. We hardly observed any study which has scrutinized the impact of corruption, financial development, trade openness, inflation, quality of institutions and foreign direct investment on economic growth in Pakistan. So, there is the need to bridge this gap. The foremost hurdle in the progress of economic growth of Pakistan is corruption and more than US$1 trillion is paid in bribery annually. According to an estimate, every year, the cross-border flow of corruption, tax evasion criminal activities are US$3. 61 trillion, which is corresponding to 3 to 5 % of the World's GDP (World Bank, 2017). The financial development has been increasing continuously for the last few years. There might be a reason of rising corruption is to enhance in domestic credit to the private sector. A survey has been conducted by Free and Fair Election Network (FAFEN) in February 2016. They have issued a report describing responses it received from the public gauging the public's perception of government departments. FAFEN surveyed 6,030 people from 603 locations and all national or provincial constituencies at random. Out of those who had interacted with the government departments, a massive 64 percent believed that corruption prevailed there. Due to corruption, the credit goes to those who bribe, and others remain unable to access this credit. It can be concluded that credit is not easily available to a common man as compared to those who are in power or can bribe. As a result, the process of circulation of money is very slow. This important issue needs to be studied so that policies can be made to reduce corruption for the wellbeing of the country and may help to achieve the targeted rate of economic growth.

LITERATURE REVIEW

Corruption is contemplated as a major impediment to economic growth of an economy. The state needs a sturdy institution to curb corruption and enhance economic growth. Additionally, financial development is vital to boost the economic growth in occurrence of strong quality of institutions. More than a few countries have tried to reduce the corruption, but these countries cannot decrease this more than two- or three-points, including Maldives, Timor-Leste, Vietnam and Bangladesh since 2017. There is a deficiency of strong and democratic institutions in these countries. Hence, the corruption rankles and nurtures due to the weaken performance of the democratic institutions (Transparency International, 2018). The World Bank (2018) recorded that dipping corruption is the core of Sustainable Development Goals and to achieve determined targets which is set to finance for the development. Some studies scrutinized that poor people pay the utmost part of their earnings in bribery. For instance, the households who earn high pay 6.4 %, whereas poor people pay 12.6 % of their earnings for bribery in Paraguay. Many researchers had explored the effects of

corruption along with financial development on economic growth for different nations differently. Corruption might have some positive outcome through "greasing the wheels of economy", as corruption might minimize costs via postponement through quicken activities of bureaucracy (Lui, 1985). Rock and Bonnett (2004) examined linkage amongst growth, investment and corruption. They found that corruption encourages economic growth significantly in Japan, Korea, Indonesia, China and Thailand.

The other study of Hackelman and Powell (2010) also explored effect of growth and corruption by taking 82 states. They found that corruption was enhancing the growth while economic freedom was limited. Also, favorable influence of corruption decreased when economic freedom increased. Huang (2016) suspected the interesting relationship among economic growth and corruption by taking 13 "Asia-Pacific" nations. He found that causality is moving from economic growth towards corruption positively in China. Hence, a rise in economic growth led to upsurge in corruption in case of China. Moreover, the causality has also been existed in South Korea positively which is moving from corruption towards economic growth. But there is no causation exists amongst economic growth and corruption for enduring states. This study has not been supported the communal perception about corruption that it is harmful for the growth in all these 13 countries. In contrast, the hypothesis "grease the wheels" has been supported for the South Korea according to the findings of this study. This study also suggested that the "Asia-Pacific" states who has been adopted the policies to eradicate corruption for the sake of the development of economy might be ineffective.

Alternatively, Mauro (1995) explored detrimental association among corruption and economic growth. He found that there will be one standard deviation decay in corruption index upsurges economic growth by 0.8 percent by keep other things constant. According to "sand the wheel" theory, if resources have been transferred to fruitless activities then corruption can be harmful for the economy (Myrdal, 1989; Shleifer & Vishny, 1993; Rose-Ackerman, 1997; Tanzi & Davoodi, 1997; Mauro, 1998). The study of Hillman and Krausz (2004) had explored the relation among failure of development, corruption and financial system by taking lower income nations. They found that their governance is not good and that's why these states suffer from the disease like corruption. Moreover, these states have breakable and unproductive domestic financial system because of the underprivileged governance. Corruption is also a big cause of a fruitless and brittle financial system via adversative selection in project financing. Hence, bad institutions led to failure of growth. The other study of Drury et al. (2006) had suspected the relation among corruption, democracy and growth via taking more than 100 hundred countries. They observed that corruption has not substantial influence on growth in democracies. In contrast, if there were no democracies involved than economic growth would be harm from corruption. The study of Paul (2010) scrutinized link amid growth also corruption in Bangladesh. He concludes that corruption had a bad influence on economic growth in escalation of Bangladesh's market economy. Also, Shera et al. (2014) explored relation amongst corruption and economic growth by taking 22 developing nations. Results revealed, there was negative association amongst the economic growth and corruption. Likewise, (Farooq et al., 2013; Odi, 2014; Musa et al., 2016) has also explored that corruption leaves damaging impression on economic growth. There are inconclusive consequences among corruption and economic growth.

Some economists have observed, the countries tend to grow faster that have developed financial systems. Former scholars have observed that financial development leaves encouraging impression on growth of economy (Goldsmith, 1969; Mckinnon, 1973; Shaw, 1973). After that, the work of King and Levine (1993) analyzed the "Schumpeter's view" that financial scheme helps to increase the growth. Results revealed, financial development has encouraging and significant relation with physical capital accumulation, improvement in efficiency of economy and growth. 'Schumpeter's view' of progress leads to innovation, via incorporating vital roles of financial mediators. As the tangible and intangible investments had also been financed by entrepreneurial selection. Moreover, Same consequences attained by (King and Levine, 1993; Levine, 1998; Rajan & Zingales, 1998). In the same way, Bhattacharya and Sivasubramanian (2003) scrutinized the relation with growth and finance in India. They recognized that co-integration existed amongst financial development and economic growth. (Waqabaca, 2004; Khan et al., 2005; Jalil & Ma, 2008; Chee-Keong & Chan, 2011; Rehman & Cheema, 2013) also examined positive association among economic growth and financial development. While, study of Adu et al. (2013) had explored very engrossing linkage of financial development also its measures on economic growth for Ghana. They found that it depended on the proxy of the financial development whether it was bad or good for economic growth. In contrast, other researcher, Hassan and Barua (2015) examined the relation with finance and growth for five emerging South Asian states. The empirical results explained that the growth of domestic savings and total debt services had momentous influence on economic growth while broad money, domestic credit and trade balance had no considerable impression on fostering economic growth in these states. Ruiz (2018) has analyzed the relation amongst institutional investors and financial development by taking the data of 116 developing and industrialized states. The findings suggested that both states have been used a 'dynamic panel threshold' method. The economies that overhead the finance threshold nurture rapidly whereas, underneath the threshold states grew slowly. Furthermore, institutional investors have been affected positively in the industrialized countries. So, there are also inconclusive outcomes amongst economic growth and financial development.

The existing literature advocates that there are various studies which investigated the negative relation and some studies examined positive relationship among corruption and economic growth. Some studies found that financial development had positive relation with economic growth. However, there is no clear evidence which linked corruption and the financial

development along with quality of institutions, trade openness, inflation and foreign direct investment on the economic growth in Pakistan. So far, there has been hardly found any study that investigates effect of corruption, institutions and financial development on economic growth of Pakistan in presence of control variables like trade openness, inflation and foreign direct investment. Mostly, studies had used panel data and some studies had used cross sectional data of different countries, but it is very important to work on each country separately for better results. Hence there is a need to bridge this research gap.

Econometric Model

This study has augmented the model of Musa et al. (2016) which is based on the model of Everhart et al. (2005) by adding new variables in the present study which are financial development, institutions, and inflation. Financial development promotes economic growth by strengthening competition and stimulating innovation activities that raise dynamic efficiency (Estrada et al., 2010). Institutions are considered as the engine of economic growth (Acemoglu et al., 2005), furthermore, one percent improvement in the quality of institutions brings three percent increase in economic growth (Tariq et al., 2016).

The reduction in inflation might be able to increase the growth rate significantly (Gillman et al., 2004). Where, Z is the set of control variables and the control variables are; trade openness (Imports + Exports / GDP), Consumer Price Index (proxy for Inflation) and net inflows (Foreign direct investments proxy). The data of these control variables is used from World Development Indicators, 2019.

The augmented model for this study is:

$$Y=f(CO, INS, FD, Z) \quad (1)$$

The econometric model is

$$Y_t = \alpha_0 + \alpha_1 CO_t + \alpha_2 FD_t + \alpha_3 INS_t + \alpha_4 FDI_t + \alpha_5 TO_t + \alpha_6 INF_t + \varepsilon_t \quad (2)$$

The natural logarithm of this model is

$$lnY_t = \alpha_0 + \alpha_1 lnCO_t + \alpha_2 lnFD_t + \alpha_3 lnINS_t + \alpha_4 lnFDI_t + \alpha_5 lnTO_t + \alpha_6 lnINF_t + \varepsilon_t \quad (3)$$

where, "lnY_t is the natural log of real GDP per capita, $lnCO_t$ is the natural log of corruption, $lnFD_t$ is the natural log of financial development, $lnINS_t$ is the natural log quality of institutions, the natural log of foreign direct investment is indicated by $lnFDI_t$, lnTO_t is the natural log of trade openness, $lnINF_t$ is the natural log of inflation and εt is the error term".

Methodology and Estimations

The data on GDP per capita (economic growth's proxy) and net domestic credit to private sector (financial development's proxy) has been obtained from World Development Indicators, 2019. The data of corruption perception index (CPI) and Law and order Index has been collected from the International Country Risk Guide. This study covers time of 1984-2018.

The Auto Regressive Distributed Lag (ARDL) model is used to get short term along with long-term co-integration in model separately Pesaran et al. (2001). Economic growth (*ln*Y) was dependent variable and corruption (*ln*CO), financial development (*ln*FD), quality of institutions (*ln*INS), trade openness (*ln*TO), foreign direct investment (*ln*FDI) and inflation (*ln*INF) were independent variables. ARDL technique is used when there is mix order of cointegration exists and wipes the problem of structural break. We applied unit root test and confirmed that ARDL technique should be used for this study. Before applying the ARDL technique, lag length criteria were used to find optimal lags for the model. Further, study used ARDL bound testing to cointegration which suggested that the long-term relation existed between dependent along with independent variables. After that, the study estimated short-term and long-term analysis. CUSUM and CUSUMsq were applied to ensure steadiness of data.

Unit Root Testing

Stationary of data is essential for the estimating. It is difficult to forecast the series if data is not stationary. The stationary level of data has been checked via several ways, like correlogram, graphical method, and unit root tests. Unit root methods for checking the stationary level are relatively latest ones and remaining methods are almost obsolete. Many unit root tests are available in different statistics software packages like ADF, DF, KPS, PP, etc, however, we have used ADF and PP unit root tests because these tests have some advantages over the others.

Augmented Dickey-Fuller and Philips Perron Unit Root Test

Augmented Dickey-Fuller unit root test is one of most used tests and results of these tests are stated in 4.1 table. All variables are stationary at 1st level of difference except corruption and inflation in both tests. PP test has used to confirm findings of augmented dickey-fuller test. This is a non-parametric unit root test. It removes problem of misspecification. After checking stationary level of the data, this study has mix order of cointegrated variables. This leads to the Auto-regressive distributed lag method of cointegration. This method has the capability of finding short-run and long-run co-integration at a time when data is mix order co-integrated. Before applying co-integration test, we must find optimal lag length of model by using lag-length structure criteria. Every criterion has different method and range. AIC is followed and the optimal lag length of model is 1.

Table 1: Augmented Dickey Fuller and Phillips-Perron unit root Test

Variables	ADF Test t-statistics value	Phillips-Perron Test t-statistics value	Stationary
***ln*GDP**	-3.488715 (0.0147) **	-3.495257 (0.0145) **	***I(1)***
***ln*COR**	-2.617368 (0.0997) *	-3.645775 (0.0098) ***	***I(0)***
***ln*FD**	-3.823699 (0.0064) ***	-3.577943 (0.018) **	***I(1)***
***ln*INS**	-4.385839 (0.0015) ***	-4.385839 (0.0015) ***	***I(1)***
***ln*FDI**	-5.261239 (0.0001) ***	-5.277213 (0.0001) ***	***I(1)***
***ln*TO**	-6.046060 (0.0000) ***	-6.046060 (0.0000) ***	***I(1)***
***ln*INF**	-4.999890 (0.0018) ***	-2.170829 (0.0490) **	***I(0)***

Source: Author's Calculations

Auto Regressive Distributed Lag (ARDL) Model

Auto regressive distributed lag model is a suitable approach when the series has mix order of co-integrated variables. ARDL model has two critical bounds. One is upper bound and other is lower critical bound at each level of difference (Narayan, 2005). Table 4.2 shows result of ARDL model. By using the optimal lag length, the calculated value of F-statistics is larger than upper critical bound. This tells that the long-term co-integration exists in model. The diagnostic tests are also applied to check specification of the model. They show that model has not a problem of heteroscedasticity and serial correlation.

Table 2: ARDL Bounds Testing to Co Integration

Source: Author's Calculations

Error Correction Model (ECM)

ARDL Bounds Testing					Diagnostic Tests		
Estimate Model	Optima Lag Length	F-stats	5 Percent LB	5 Percent UB	χ^2 Serial	χ^2 BPG Hetro	χ^2 RESET
F_{GDP} (GDP|COR, FD, INS, FDI, TO, INF)	1,0,0,0,0,0,0	3.752*	2.45	3.61	0.329 (0.724) *	0.816 (0.650) *	0.075 (0.787) *

"*, **, *** significant at 10 percent, 5 percent and 1 percent level respectively and probability in parenthesis ()"

Error correction model displays speed of adjustment of variables towards the equilibrium. The results of error correction estimations are given in 4.3 table. Constant term shows that by taking everything else zero, still the economic growth may rise by 0.11 % due to other macroeconomic factors. The results reveal that corruption has negative association with economic growth. Corruption might encourage or discourage investment by public which is depend on institutional quality of the nation (Hanousek and Kocenda, 2011).

Table 3: Short-run and Long-run Estimates

Source: Author's Calculations

The reason behind reduction in economic growth due to corruption is ineffective investment, misallocation of the factors of production, and rise in the costs of transaction. The 1% rise in corruption will cause the reduction by 0.8 % in economic growth in short term. In addition, One-unit change in corruption decreases economic growth by 0.25 % in long term. As corruption is one of the topmost hitches of an economy, this is really a high value of corruption. These findings are consistent with Murphy et al.,1991; Shleifer and Vishny, 1993; Rose-Ackerman, 1997.

Variables	Coefficient	Std. Error	t-statistics	Probability
C	0.111043	1.133222	0.009799	0.0992*
Δ*ln*COR	-0.084859	0.003005	-2.824299	0.0090***
Δ*ln*FD	0.144488	0.026927	5.365928	0.0000***
Δ*ln*INS	0.071649	0.002272	.0315408	0.0755*
Δ*ln*FDI	0.006334	0.005369	1.179787	0.0249**
Δ*ln*TO	0.061600	0.029566	2.083503	0.0472**
Δ*ln*INF	-0.185332	0.040498	-4.576308	0.0001***
ECT_{t-1}	-0.332540	0.100815	-3.298511	0.0028***
Long Run Analysis				
Dependent Variable = *ln*GDP				
Variables	**Coefficient**	**Std. Error**	**t-statistics**	**Probability**
C	0.111043	1.133222	0.009799	0.0992*
***ln*COR**	-0.255186	0.013942	-1.830375	0.0787*
***ln*FD**	0.434500	0.122010	3.561183	0.0015***
***ln*INS**	0.021546	0.007061	0.305126	0.0763*
***ln*FDI**	0.019048	0.014674	1.298066	0.0206**
***ln*TO**	0.185241	0.115213	1.607815	0.0120**
***ln*INF**	-0.557324	0.209452	-2.660870	0.0132**
R^2		0.883567		
Adjusted R^2	0.780831			
D.W.	2.267646			
F. Stat	8.600408 [0.000033]			

"*, **, ***, significant at 10 percent, 5 percent and 1 percent respectively"

Financial development boosts economic growth. Financial institutions and markets could produce economic growth through providing the bulk of funds, via lessening hazard and by increase the productivity of transfer of funds into investment projects from savers (Federal Reserve Bank of San Francisco, 2003). The coefficient value tells that 1 % improves in financial development may rises economic growth via 0.14% in short term while upsurge in financial development rises the economic growth with 0.43% in long term. The results are persistent with King and Levine, 1993ab; Rousseau and Wachtel, 2001; Khan et al., 2005; Jalil and Ma, 2008; Chee-Keong and Chan, 2011; Rehman and Cheema, 2013. The enrichment in institutions raises economic growth in short and long terms both. The results are compatible with Clague et al.,1999; Chong and Calderon, 2000; Ulubasoglu and Doucouliagos, 2004; Acemoglu and Robinson, 2010; Hussain and Malik, 2011. Foreign direct investment is positively related with economic growth in short term along with long term. These findings are consistent with Zhang, 2001; Alfaro et al., 2004; Freckleton et al., 2012; Almfraji and Almsafir, 2014. Trade openness is a significant variable in the model. The results are consistent with Balassa and Balassa, 1984; Levine and Renelt, 1992; Andriamananjara and Nash, 1997; Sala-i-Martin, 1997; Edwards, 1998; Rodriguez and Rodrik, 2001. Inflation negatively affects economic growth in short term along with long term. The findings are consistent with Grimes, 1991; Robert and Alexander, 1990; Grier and Tullock, 1989; Bittencourt et al., 2015. Results show that model does not have the problem of autocorrelation. F-stat shows the significance of the model. All diagnostic tests show that model has not any issue of heteroskedasticity and serial correlation. So, model is fully specified.

Stability Test

Two recursive tests have been applied to check the stability of model, CUSUM and CUSUM of Square. Figure 2 "a and b" both are showing the reliability tests at 5 percent level of significance. If the blue line is between these upper and lower bound, then the model is reliable which confirm reliability of the long-run model.

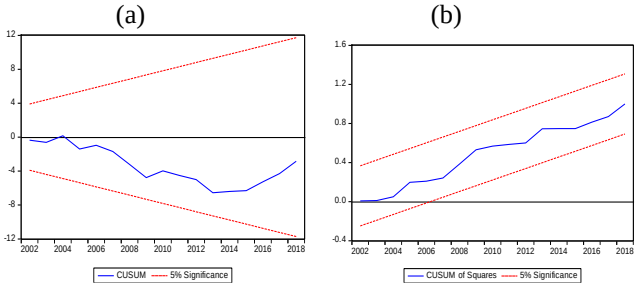

Fig. 2: CUSUM Recursive Test & CUSUM of squares Recursive Test Source: Drawn by the Authors

VECM Granger Causality Test

VECM granger causality test is applied to examine causation's direction in short and long term. Table 4.4 show the results of this test. The bidirectional causality exists and it is moving from domestic credit to economic growth, domestic credit to institution, and domestic credit to inflation. The one-way causality is moving from corruption to economic growth, inflation to economic growth, foreign direct investment to trade openness, trade openness to institution, institution to inflation, trade openness to domestic credit, foreign direct investment to domestic credit, and foreign direct investment to corruption.

Table 4: VECM Granger Causality Test

Source: Author's Calculations

	Type of causality							
	Short-run							Long-run
	$\sum\Delta lnGDP$	$\sum\Delta lnTO$	$\sum\Delta lnINS$	$\sum\Delta lnINF$	$\sum\Delta lnFDI$	$\sum\Delta lnFD$	$\sum\Delta lnCOR$	ECT_{t-1} [p-value]
	Likelihood Ratio (LR) statistics [p-values]							
$\Delta lnGDP$	-	0.127 [0.354]	0.487 [0.237]	-0.0193 [0.4385]	0.7080 [0.3309]	0.646*** [0.000]	0.1584 [0.4064]	-0.045* [0.091]
$\Delta lnTO$	0.097 [0.377]	-	0.129* [0.078]	0.142 [0.433]	0.826 [0.158]	0.885*** [0.000]	0.248 [0.371]	-0.222 [0.139]
$\Delta lnINS$	0.051 [0.267]	0.095 [0.180]	-	0.021** [0.015]	0.622 [0.286]	0.121** [0.020]	0.013 [0.473]	-0.257 [0.263]
$\Delta lnINF$	0.230** [0.010]	0.773 [0.118]	0.336 [0.397]	-	3.787 [0.110]	0.150*** [0.001]	0.325 [0.399]	-0.088 [0.120]
$\Delta lnFDI$	0.0028 [0.4646]	0.057* [0.073]	0.017 [0.410]	0.014 [0.154]	-	0.056*** [0.007]	0.113* [0.073]	-0.152** [0.015]
$\Delta lnFD$	0.323*** [0.087]	0.014 [0.480]	0.811* [0.084]	0.188** [0.042]	0.060 [0.482]	-	0.032 [0.477]	-0.506*** [0.000]
$\Delta lnCOR$	0.121* [0.072]	0.049 [0.316]	0.189 [0.177]	0.010 [0.387]	0.246 [0.306]	0.061 [0.145]	-	-0.328*** [0.007]

Conclusion and Policy Recommendations

This study has scrutinized the influence of corruption, institutions and financial development on economic growth in Pakistan's case. The time period has been taken from 1984-2018. This study has also examined the causal connection among the variables. The Augmented Dickey Fuller (ADF)also Phillips Perron (PP) unit root tests have been used to find stationarity among variables and to find mix order of co-integration in time series data. The ARDL bounds testing have been used for the co-integration of the series. The CUSUM and CUSUM of squares methods have been used for data's stability and VECM Granger Causality test to find direction within variables.

The empirical outcomes reveal that corruption has negative influence on the economic growth. It means that if corruption rises then it decreases the economic growth. This study culminates that corruption retarded economic growth both in short and long run. The association amongst financial development and economic growth indicates that the financial development improves economic growth both in short and long term. Institutions have also encouraging influence on growth. Trade openness and foreign direct investment has positively whereas inflation negatively affect the economic growth.

VECM Granger Causality predicts that causality is moving in single direction from corruption to economic growth, inflation to economic growth, foreign direct investment to trade openness, trade openness to institution, institution to inflation, trade openness to financial development, foreign direct investment to financial development and foreign direct investment to corruption. On the other hand, bidirectional causality is moving from financial development to economic growth, financial development to institution, and financial development to inflation.

The empirical findings suggest that Govt. of Pakistan should focus more on financial development and institutions to boost economic growth. It is also suggested that, Govt. should remove further trade barriers and hearten private sector with dissimilar incentives to have better development of state. Government and State Bank of Pakistan is important for a better financial system cooperation. In consideration of, a better financial system would encourage international trade and economic growth. Through this environment, production of nation will be increased. Also, it would promote global trade, rivalry and efficacy in the economy. Stronger the institutions, higher and stable the economic growth. The major task of Government is to restore confidence of domestic and international investors. The political tensions may hurt the cause of attracting greater foreign investment. It is expected; the growing need for trade openness will put pressure on any regime to take certain bold steps to control corruption.

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