

The Nexus Between Financial Liberalization and Private Investment: An Econometric Analysis from Pakistan

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Abstract

The current study investigates the association between financial liberalization and private investment from 1980-2018 in Pakistan using Auto-Regressive Distributed Lag (ARDL) model. The real interest rate has been employed as a proxy of financial liberalization. Moreover, FDI, economic growth and inflation have been taken as other determinants of private investment. The bond test indicates a significant co-integrated link in the variables. The long length outcomes divulge that real interest rate has a negative and statistically significant effect on the Private investment. It explains if interest rate decreases, and the private investment increases, then ultimately, growth rate increases. The econometric analysis also illustrates that both variables are interdependent. The study, however, explains that due to the rise in private investment, saving also increases which in response, accelerates the development process, especially in Pakistan. So, it is endorsing that the government and other stakeholders should focus on taking careful steps to increase financial liberalization in the finance sector. As it will have an unbendable impression on the private investment, and there is indirectly linked progressive relation with economic growth.

Keywords: Econometric analysis, Growth rate increases, Development process, Economic growth.

JEL Classification: 0160

1. Introduction

Financial liberalization is a ponderous and multidimensional procedure. It may concern with the regulations of finance institutes of any economy. The financial liberalization philosophy states the macroeconomic strength and economic growth of a country can be

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developed by deregulating the domestic financial market and delineating the interest rate, through governing the capital. It comprises government policies that contemplate deregulating credit and interest rate controls, eradicating access barriers or foreign financial transactions such as Bogdan, Ghosh, and Doerge (2004); Lall (2001); Obstfeld (2009). Henceforth, financial liberalization includes both dimensions; local and foreign. Financial liberalization initiates and strengthens the price mechanism in the market, besides it also develops a competitive environment in the market.

Financial liberalization stated as the strategy portions, which are developed to deregulate specific financial system operations, and transfigures. The emergence as a source to achieve the market based liberalize system through suitable standard edifice. Significant reforms in the finance system will chaperon to magnify money for a loan through enticing more domestic savings to bank credits ensuring a high rate of interest. The result will be a huge investment and enormous growth.

Schumpeter (1911) stated economic development needs services of financial mediators. Financial markets has been strengthened by financial liberalization and as a result, endorses economic growth (Huang & Wang, 2011). A number of developing economies have instigated financially liberalized policies aiming to advance the efficiency of monetary policy relying much on market forces. Significant policies of liberalization envisioned for liberalizing interest rates, reducing credit control, refining contention and productivity within financial system, solidification of administrative framework and upholding the growth by excavating of financial markets.

Like many other countries, Pakistan has also taken many initiatives towards financial liberalization for gaining a high growth level. There is a dire need to conduct an experimental study to check the efficiency of financially liberalized strategies to study the development structure of Pakistan. Financially liberalized structure was restricted in the 1990's and minimum savings, low rate of investment, slow economic growth were the results of this restriction (Khan, Qayyum & Ahmed, 2007). Pakistan is indeed a developing country and it faces various snags including political instability, truncated literacy ratio, no employment, less effective bank system, lack of modernized technology and rural industries. To attain a higher level of economic growth, Pakistan can apply many social and economic policies and one of these policies is financial liberalization.

Many researchers studied finance-related issues and reforms with private set up investment and gave its results. Some of those have been found in recent experimental studies as Eigbiremolen and Igberaese (2013), Faridi and Baloch (2018) and Khalid and Nadeem (2017). The researches of McKinnon and Shaw in 1973 initiated that the modern era economists examine financial liberalization and financial policy in developing economies (Hermes

& Lensink, 2008). These analyses are found till today. It has discussed by many researchers such as Abderzag and Hasnaoui (2015), Williams and Nguyen (2005), Lee (2003), and de Castro (2018) that financial repression states a background in which financial system is pressed or downgrade through government arbitration that has affected the interest rates of domestic banks which offer low-interest rates to the customers or sometimes ratio goes to negative.

Low-interest rate discourages the savors, investments become unachievable and hence economic growth becomes obscure. Financial control is mostly associated with the government fixing of interest rates (Bascom, 2016) and its adverse outcomes on the financial sector and economy and financial liberalization is commonly associated with an independent interest rate system. This is the older view of financial liberalization.

Financial liberalization is a procedure which comprises a wider range of actions or trials to tackle the purging or removal of certain boundaries on the finance sector. Also, It is stated by Ductor and Grechyna (2015), it is the removing portfolio limitations for the banking sector, reforming of different industries, and fluctuations in the organizational structure of monetary policy (Abderzag & Hasnaoui, 2015; Steinherr, Tukul, & Ucer, 2004).

The term financial liberalization is also shown as a set of processes the independence of central bank from government, an absolute independent investment moving inside and outside any country, total conversion of the currency; relinquishment of entirely leading sectors offering goals; abolishment of government levied interest rate policies; acquittal of interest rates, no restriction on the bank ownerships; denationalization and complete freedom for foreign ownership (Patnaik, 2011). So it can be said that financial liberalization fetches cost and benefits for running economies.

Besides, financial liberalization means to remove or loosen the governmental restrictions on the domestic financial market (Precious, Bahle, & Praise, 2014). It includes the policies to free financially suppressed countries from the growth retarding financial schemes that may be a ceiling on interest rates directed credit to the priority sector and government-owned banks which are few and ineffective. During the start of the century 1970s, the economies which are in the initial stage of development focused on infrastructure and organizational progress, presumptuous that it would start industrialization and economic growth. So, they stressed building roads, bridges, communication networks industrialization and other investment projects etc. So some other economists as Panayiotou and Medda (2014) and Wade (2004) also presumed that better infrastructure would attract the private sector to show investment in new ventures to enhance or endorse economic revolution. On other hand, private investment mentions entire classes of investments except the investment furnished by the government.

This study has highlighted the literature and practical gap, and contributed to reduce this gap. The indepth literature review has enabled to understand the financial liberization and private investment in different aspets. Moreover, the literature has highlighted the other factors effecting the financial liberziation and private investment, Most of studies has highlighted only banking crises , price discrimination , trade openness , export import etcfactors. But, in previous literature freedom to the investors , Forieign direct investment,e-citizenship for foreigners and some more factors has been ignored, which was focused in this study, which was ignored in previous literature.

The financial liberalization has the ability to boost the private investment, inside and outside the country, which will increase the overall economic growth. After 1990's, China has give the financial liberatiliziation and freedom to the investors, which will bring more foreign direct investment in to China. So, the overall number of business increased and the economic got boosted rapidly. On the other hand, in Europe, Estonia has introduced the e-citizenship and company registration facility for foreigners, provide them virtual offices, local addresses, local contact number and local contact person, low tax rates, and other facilities and freedom to do businesses. So, this financial liberization has also incraseed the private direct and indirect investment in Estonia.

In Pakistan, the poor infrastructure, lack of awareness, and polical instability has create thousands of problems for investors. The foreigner investors do not feel financial liberalization. So, they have avoided to invest in Pakistan, which will ultimately result in the low economic growth. The current government is trying to provide more financial liberatization and freedom to investors but still investors are hesitating to invest in in Pakistan. So, this study has highlighted the practical issue of financial liberatization and its effect on private investment in Pakistan, which was not conisered a crucial factor for economic growth.

This stuay has been divided into five sections. In the first section, the background, introcuton, gap identification and significane of the study has been metioned. In the second section, literature review has been elaborated. Moreover, the third section is based on methodology used to contact the study. While, in the fourth section, results and their interpretations have been written. At the end, in the fith section, conclusion and discussion, and limitations of the study has been mentioned.

2. Literature Review

Numerous empirical literature was found to observe the relationship between financial liberalization and private investment. The results of most of the studies have depicted that financial liberalization has a positive impact on private investment. Most of these studies were conducted internationally and only a few were done in Pakistan. Some of the studies have been discussed here briefly.

Echavarría and Zodrow (2003) examined the degree of credit restriction in Colombian firms, which changed the results of the investment choices. The research analyzed if the 1990s with the development of the financial department, which was pigeonholed by concentrated financial liberalization, increment in area, magnitude and depth of the action which decreased the constraints of the corporations and encouraged investment or not. Similarly, it expressed that financial liberalization and availability of more credit condensed the restrictions, and financial issues impacted negatively on investment.

Fowowe (2011) presented a study about the link between financial sector modifications and private investment. The researcher used the area of some Sub-Saharan African economies for his research. The study established an index to trail the plodding advancement resulted in the implication in different stages of reforms. The econometric estimates revealed that financial reforms that positively impacted on private investment in the chosen economies; hence presented backing to the financial liberalization theories.

Orji, Egbiremolen, and Ogbuabor (2013) presented a study on the relationship of financial liberalization and private investment in the Nigerian economy under the period from 1970-2012. The study used real interest rates as a proxy of financial liberalization and concluded that it linked positively with private investment. The study used different econometric techniques such as Chow test, Granger causality test and cointegration test for analysis. The study also used the ordinary least square model and recommended that private saving boosted private investment in Nigeria. The study further proposed that financial liberalization and other basic variables were essential for growing and developing the economy. The research presented some recommendations such as policymakers should increase price stability and minimize the inflation rate which enhances the private investment. Thus, the researcher advised that the administration should produce opportunities for private investment for prosperity.

Akinsola and Odhiambo (2017) explained the relation of financial liberalization and economic growth by using the data of 30 countries of Subcontinent of Africa from the period of 1980-2015. The study used the panel data analysis technique and used the Generalized Method of Momentum (GMM) for estimation and concluding the result. The study found that there is a negative relationship between a banking crisis and economic growth, showing that the period of a banking crisis can drastically affect economic growth in Sub-Saharan Africa. The study also considered the unique character showed by financial liberalization in developing economies, analysis has suggested that financial liberalization procedure should be executed with attentiveness to avoid jeopardizing financial stability.

Hye and Lau (2018) presented that in developing countries, economic growth was enhanced by private investment. The researcher used Pakistan as an area of research and explained the effect of financial liberalization and trade on private investment. The study used a data set of the period from 1971 to 2014. Autoregressive Distributed Lag (ARDL) model for estimating the data. The study resulted that financial liberalization and trade liberalization a positive relation with private investment in the long run. At the same time, Trade Openness (TO) and Real Interest Rate (RIR) linked negatively in the long term. The study also concluded that Financial Openness (FO) and Financial liberalization (FL) linked positively with private savings.

Zeeshan, Naeem, and Malik (2019) explained the relationship of Economic Growth (EG) and Financial Liberalization (FL) in the area of Pakistan during the time span of 1973-2017. They used the Augmented Dickey-Fuller test and also used Bound test techniques in their analysis. For estimation, the researcher also used ARDL techniques. Trade liberalization was measured as export to GDP ratio and the ratio of exports plus imports to GDP while financial liberalization measured as net Foreign Direct Investment as a percentage of GDP and foreign assets of the central bank. The results showed that both measures of trade liberalization found significant while net FDI found insignificant and foreign assets with central bank was found statistically significant. The study recommended that there are so many other procedures for analyzing growth in Pakistan and the area is open for future research.

Comprehensive study is scarce on this topic or there is no significant study on this topic which explain entirely the said issue. So this study is an input to examine the relation of financial liberalization and private investment in the current scenario.

The theoretical and experimental opinions on this linkage are not decided yet. Henceforth, the current research is an exertion to identifying the connection of financial liberalization and private investment in the developing economies like Pakistan.

3. Methodology

In this study the impact of financial liberalization on the private investment, the investigation uses the autoregressive distributed lag (ARDL) approach of co-integration. Real Interest Rate employed as a proxy for financial liberalization as various other studies such as Ahmed (2013), Orji et al. (2013) and Udoh and Ogbuagu (2012) etc have been previously used. Further, financial repression is mostly linked with fixing of interest rates by the government and adversarial results on the financial sector and economy; financial liberalization is connected with independent interest rates. To acquire vigorous approximations, the study will include Foreign Direct Investment (FDI) and inflation as a related controlled variable. We can explain all the variables in the below-given form of the regression equation:

$$P_{inv} = f(rir, fdi, gr, ifl) \dots\dots\dots(1)$$

P_{inv} = Private Investment

fdi = Foreign Direct Investment

gr = Growth Rate

ifl = Inflation

rir = The nominal deposit rate minus the inflation rate is called the real interest rate.

$$RIR = \gamma t - \pi t \dots\dots\dots(2)$$

The researcher has taken it as a proxy of financial liberalization. The Regression Equation is:

$$P_{inv} = \beta_0 + \beta_1 rir + \beta_2 fdi + \beta_3 gr + \beta_4 ifl + \mu t \dots\dots\dots(3)$$

In the model, β_0 is the intercept of the relationship; $\beta_1, \beta_2,$ and β_3 are the coefficients of each exogenous variable. μt is the error term.

Data has been collected from 1980-2016 from World Development Indicator, different Economic Surveys, and the website of State Bank of Pakistan.

To do the estimation, the researcher will employ the unit root method, cointegration techniques and ARDL model & ECM method for analyzing the data for Pakistan.

1. The long-run association is studied by approximating the subsequent unobstructed Error Correction Model.

$$\Delta \ln P_{inv} \beta_0 + \omega \sum_{i=1}^n \Delta \ln (P_{inv}) t - i + \beta_1 \sum_{i=1}^n \Delta rir t - i + \sum_{i=1}^n \Delta fdi t - i + \beta_3 \sum_{i=1}^n \Delta gr t - i + \beta_4 \sum_{i=1}^n \Delta ifl t - i + \mu t \dots\dots\dots(4)$$

In equation 4 the terms with summation signs exhibit the error correction dynamics, while the second explains the long run associations. F test is used to check the long-run association. Null hypothesis is

$$H_0 = 0$$

The alternative hypothesis is

$$H_0 \neq 0$$

If the long-run relation exists then F-statistics illustrates the normality of variables and also demonstrates the measurement of co-efficient in the short as well as the long run.

4. Outcomes of the Study

The financially liberalized policies practiced in Pakistan were proposed by McKinnon and Shaw for the development of the financial sector. But the study of available literature has revealed financial openness that may boost the economy's helplessness in disaster. investment; the results of the experimental research have been discussed as follows:

4.1 Descriptive Analysis

The table first expresses the descriptive statistics. The high value of standard deviation as related to the mean values of regressive or regressed variables shows considerable change in the variables.

Table 1
Description of Variables

Variables	Mean	Std. Dev	Minimum	Maximum	Median
PI	5432	5983	2157	1631	2311
RIR	11.59	3.0747	7.500	20.00	10.00
GR	5.073	1.879	1.700	9.000	4.550
INF	9.781	5.138	2.463	24.89	8.640
FDI	0.942	0.861	0.102	3.668	0.627

4.2 Pearson Unit Root Test

Pesaran (2007) presented the PP unit root test for analyzing the data. In this paper, the PP unit root tests mentioned in table 2.

Table 2
PP Test Statistics

Variable	t-statistic	p-value	t-statistic	p-value	Order of integration
PI	0.903	0.99	3.448	0.01	I (1)
FDI	-1.721	0.411	-3.700	0.00	I (1)
RIR	-2.049	0.265	-3.705	0.00	I (1)
GR	-4.19	0.00	--	--	I (0)
INF	-5.44	0.00	--	--	I (0)

The results express that all the variables such as $\log(P_{inv}, rir, k, fdi, gr, \& ifl)$ show non-stationarity and are found unit root at level except private investment, foreign direct investment and real interest rate which show non-stationarity at the level. Now after taking their first difference, these variables become stationary.

The results from the table explain that all the variables are found stationary at 5% in the first difference form and have a 1 % level of significance.

Table 3

Augmented Dicky Fuller Test Statistics (ADF)

Series	t-statistic	Probability value	E(t)	E(Var)	Lag	Max Lag	Observations
<i>PI</i>	0.496	0.983	-1.519	0.825	1	7	32
<i>RIR</i>	-3.400	0.018	-1.462	0.861	2	7	31
<i>FDI</i>	-2.661	0.091	-1.519	0.825	1	7	32
<i>GR</i>	-4.226	0.002	-1.525	0.783	0	7	33
<i>INF</i>	-5.424	0.000	-1.525	0.783	0	7	33

To apply the ARDL method, the researcher acquired variables after taking their logarithm at the 1st difference level and then used the SB criterion as used so many others as Bogdan et al. (2004). The calculated F- statistics were found 4.91 which is higher as compared to the critical value which is 5 % of its level of significance. It is establishing the existence of a long-run association among the variables.

Table 4

ARDL and Critical Bound Test

I(0)	I(1)	Significant
3.03	4.06	10%
3.46	4.57	5%
3.89	5.07	2.5%
4.40	5.72	1%
Test Statistics	Value	K Value
F-statistics	4.9182	4

The random walk is an example of nonstationary succession. For the random walk, if the one-unit root is I (1). On the contrary, a stationary series is I (0). Standard inference procedures are not applied to regressions, which include assimilated regressions. Hence, it is urgent for checking the level of the stationary unit; it can be achieved through using a unit root test.

The table 4 exhibits the long-run coefficient while the optimal ARDL econometric technique is considered. The econometric conclusion of the said study is, FDI has a positive and statistically significant effect on private investment. But RIR had a negative and statistically significant effect on the private investment; which reveals if interest rate decreases, and then the private investment increases; then, ultimately growth rate increases.

Table 5
The Long Run Coefficient Results

Variable	Coefficient	Std. error	t-statistic	Probability
RIR	-0.017	0.008	-2.167	0.02
FDI	0.159	0.032	4.970	0.00
GR	-0.582	0.173	-3.357	0.00
INF	0.010	0.0048	2.142	0.04
Constant	13.320	1.015	13.123	0.00

The primary identification that could be concluded from the above-given status is the link between financial development and remortgage with customer credit markets. When the private credit was distorted for households to lend it to the industry, financial liberalization decreased the private investment and shortened the chances of business for the financial sector (Cho ,2002). To check the credibility of this statement, comprehensive data is required to allocate private credit within households and firms.

A broad characterization of the distribution of private credit (by sector of maturity) is immensely valuable, scrutinizes the extent of financial liberalization which resulted in and money flow expansion specified for private investment. This negative sign is unswerving having the hazardous effect of uncertainty of macroeconomic environment on the investor's verdict pronouncement.

People believe that better-conditioned infrastructure will attract the investors from different setup to join new investment ventures or schemes that will enhance the development

of the country. Henceforth the expansion of the agricultural, industrial & services arena will move the nation towards economic goal.

But when the resources are not used efficiently, the private area investment will not lift as per hopes; further problems may include administrative difficulties & tight fiscal policies by the government or authority (Hye & Wizarat, 2013). As the table depicts, INF has a positive and significant effect on private investment in the long run. The result indicates that a particular unit in the private sector can increase the 1.04% inflation rate. GDP presents a measure of the overall economy; GDP and private investment had a negative and significant relationship. The variables of GDP in the logarithmic terms assumed as the real interest rate (RIR) due to negative values presented in the data.

An advantage of logarithmic transformation found as the regression yielded an elastic coefficient of private investment rate specifically to explanatory variables, made it feasible to check the economic germaneness of the link.

Potential non- linearity in relation to dependent and explanatory variable also account for by the logarithm transformation. Mostly the effects of financial liberalization minimum at financial depth and boost with the development of the country's financial system.

Table 6
The Short Run Coefficient Result

Variables	Coefficient	Std. error	t-statistic	Probability
DRIR	-0.012	0.005	-2.127	0.04
DFDI	0.116	0.032	3.542	0.00
DGR	-0.423	0.118	-3.574	0.00
DINF	0.007	0.004	1.700	0.10
ECM(-1)	-0.727	0.208	-3.491	0.00
R square	4.745			
F statistics	1.536			

The coefficient ECM (-1) was found (- 0.72). The found coefficient is negatively linked & important impact, which indicates 72% divergence, which is settled in the running period (short as well as long-run) of each year. Inflation is such a variable that does not show the significance and these fallouts exhibited that financial liberalization, determined by Real Interest Rate, had a substantial negative effect on private investment in Pakistan. If the interest rate by the banks or other financial institutes in Pakistan is increased, the private

investment will disembark. More precisely, if there is an increase in every unit of financial liberalization (RIR) procedure in Pakistan, private investment dwindles up to 0,012 parts on average, while all other variables remain constant.

The negative association in both financial liberalization (RIR) and private investment is not found constant in the current study. The study thus deduces the same results as (Bogdan et al., 2004); Orji et al. (2013). In another way, the results exhibit that a high inflation level does not discourage private investment in Pakistan.

4.3 Diagnostic Test Lm and JB

The authenticity or validity of the above-given results may be checked by applying diagnostic tests, Cumulative Sum (CUSUM) and Cumulative Sum of squares (CUSUMSQ). The graphs of these tests are given below:

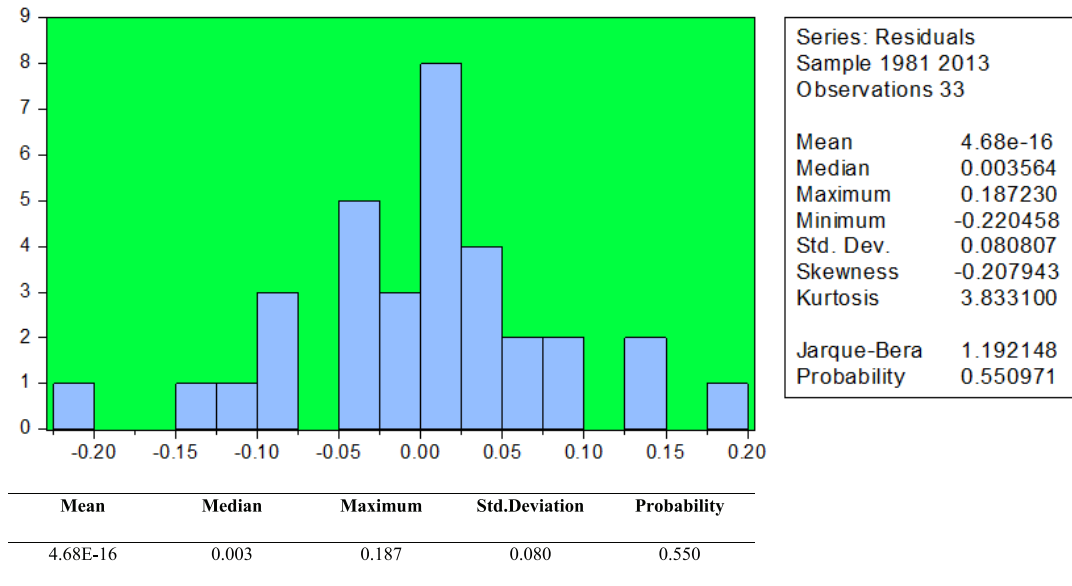


Figure 1 : Cumulative Sum (CUSUM)

Specification: LOG(PI) LOG (PI (-1)) RIR FDI LOG(GDP) INFC

t-statistic	0.642
F-statistic	0.412

LM Test

F-Statistics	1.536	Probability (2, 24)	0.235
R-Square value	4.745	Probability Chi-Square value (2)	0.153

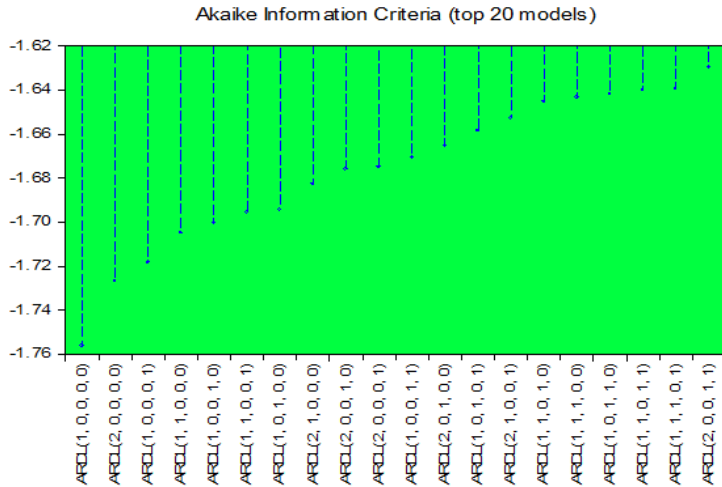


Figure 2 : Akaike Information Criteria

4.4 CUSUM & CUSUM SQR Graphs

Cumulative sum test shows that the coefficient of regression is changing systematically or not and the Cumulative sum of the square test shows that if the coefficient of regression changing suddenly.

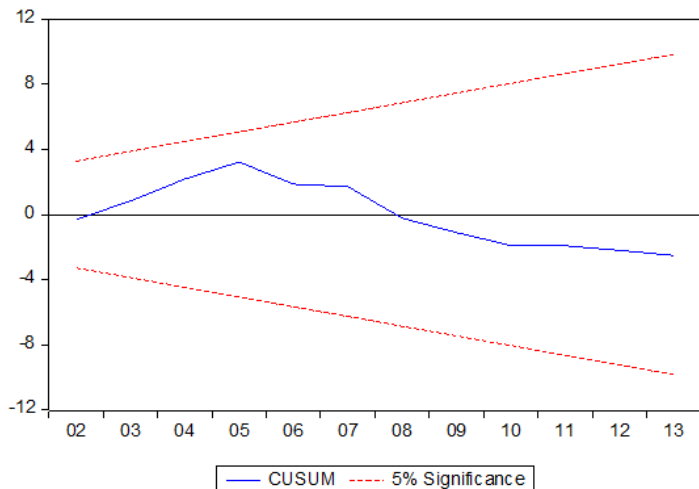


Figure 3 : CUSUM Graph

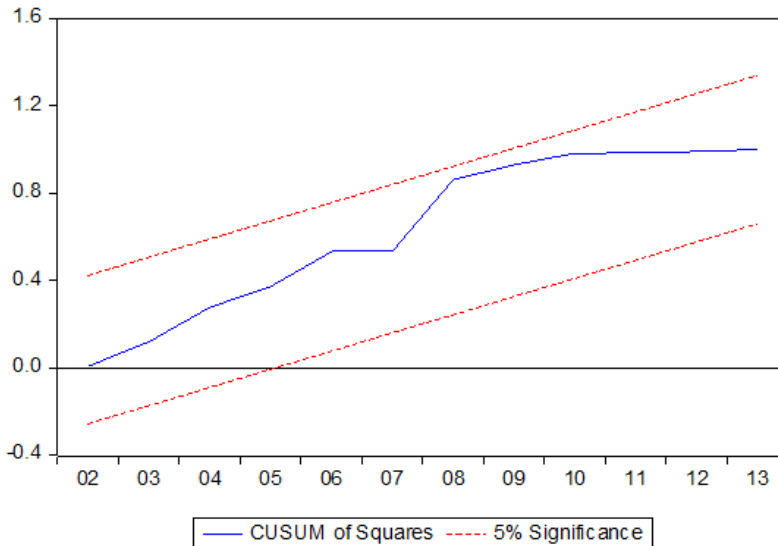


Figure 4: CUSUM SQR Graph

5. Conclusion

The current study has empirically investigated the association in both financial liberalization and private investment in Pakistan during the period 1980-2017. The ARDL analysis revealed that financial liberalization determined by the Real Interest Rate has a substantial negative but mild influence on private investment in Pakistan. The current results have discarded the innovative changes in the coming period in the Pakistan economy. But it has liberalized the economy of Pakistan, while banks raised the rate of saving a deposit to encourage private savings mobilizations. While the interest rate on savings is striking to the investors, the investors will be encouraged to save more. It produces more credit accessible for banks, financial institutes and organizations for the provision of finance to the private stockholders, a higher rate of investment would undertake.

The current study has revealed that Foreign Direct Investment is essential and obligatory for getting private investment, which will ensure sustainable economic growth in Pakistan. The financial system is the backbone of the development of any economic system. So the essential or vital role of the government is to shift finance from the saving sector to the borrower's to spend and invest. This system shuffles finance or credit to the borrowers and in the era of technology, financial novelties and growth rare directly concomitant with private investment. As such matters demand high investment rate that banks or other financial organizations are financed which are working in the private sector. Based on the findings of the study, the researcher suggests the following points:

1. The government and other stakeholders should concentrate on taking careful steps to financial liberalization in the finance sector as it will have an undeviating effect on the private investment and indirect constructive effect in economic growth.
2. Policymakers and the government devise technical strategies, programs, and enticements to assist the adequate mobilized private sector investment in the country aiming to achieve economic growth via vigorous foreign investment.
3. Government of Pakistan should introduce e-citizenships for foreigners (like Estonia) to do business in the country.
4. The Government should also provide registration to foreigner companies so that those companies may be able to make their offices in the country for easy business opportunities.
5. Like China ,the Government of Pakistan should provide low tax rate policy for foreigners.Policy makers should also make policies to provide financial facilities and freedom to foreigners so they come and invest in Pakistan at a large level.
6. The rate of saving deposits should be improved by the banks to inspire the private sector to save armament. If the interest rate on the savings is laudable for the investors, they will be motivated to save more. Hence there will be more credit in the bank and remaining finance sectors lending to the private stockholders (Eigbiremolen & Igberaese, 2013). The decision of this study disclosed or mentioned about inflation that has a positive relationship with private investment. Therefore, the researcher recommends that the government and the policymakers should devise policies to boost price stability. It will increase the private sector investment just as a macroeconomic remedy and finally will enhance the growth.

It is also the need of time that governments should focus on the banking system and other financial institutes to overcome the financial problems and to save from devastation. Stiglitz (2010) also warned about the instability of market structure in the coming period. State Bank of Pakistan (SBP) should also focus on the regularization of the working setup of other commercial banks and the finance relating institutes or companies to achieve premeditated goals. A designed practical approach is required which should identify distinct features of financial liberalization which are damaging the economic growth and ultimately the economic development in Pakistan.

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