

The influence of selected Economic Variables on the Growth of Islamic banking in Pakistan: an econometric approach

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Abstract: The study investigates the influence of selected macroeconomic variables on the growth of Islamic banking sector in Pakistan. The Islamic banking is one of the mounting industry in the Islamic world particularly in Pakistan now a days. To see whether there is an influence of macroeconomic variables on Islamic banking growth or not we use two macroeconomic variables that are, foreign direct investment rate and Remittances. We use quarterly data for all of the variables ranging from Q4/2003 to Q3/2019 by using autoregressive distributed lag model (ARDL). The examined results of long run ARDL indicates that FDI, is negative and have insignificant effect on the growth of Islamic banking in short run while Remittances have positive and insignificant impact on the Islamic banking growth. Also in long run both FDI and remittances have positive effect while remittances received have significant and FDI have insignificant effect on growth of Islamic banking in Pakistan. Given the growth trajectory of Islamic banking in Pakistan, it is pertinent for policy makers to discover the effects of Islamic banking across the overall banking development in the country. Given the fact that both Islamic and non-Islamic banks are in competition with each other yet, the existence of Islamic banks provides an acceptable solution to the religious-minded people in the country as well as it plays an importance role in the development of banking sector of Pakistan.

Keywords: FDI, Remittances received, Islamic Banking growth, Islamic banks. ARDL

JEL Codes: G10, G15, Z12

1. Introduction

Financial institutions and financial assistance to the general public are driven by finance, the key factor that enables them to run effectively and to run efficiently. In the Muslim world, rise of capital that takes place in accordance with the shariah law is referred to as Islamic finance, and the institutions that mainly provide this financing are Islamic banks as well as other lending institutions. Traditionally, Islamic finance is a type of financial product that is designed by financial institutions in accordance with the rules of Shariah. (Azwar, 2010); (A. Gait & Worthington, 2008); (A. H. Gait & Worthington, 2007)). Those financial institutions whose basis are on the aims and goals and the operations are on Quran's principles

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are Islamic institutions ((Warde, 2000); (Aman, Sharif, & Arif, 2015; Aman, Sharif, & Arif, 2016)). The purpose of financial institutions is to provide finance by providing money and thus to generate funds. Besides offering a range of deposit and loan services to their clients, Islamic financial institutions also provide a range of commercial services to individual and business customers. This industry of finance is one of the fastest growing industries of the world, making it suitable for investors from both Islamic and other countries. The Islamic finance sector has emerged in recent times as one of the stars of the financial industry. The growing interest of investors in Islamic finance is one of the leading factors for its escalating popularity from east to west and from north to south. For those Muslim people who live in countries with a large Muslim population, it is a growing field of importance, especially in the Middle East and South East Asia. Especially Muslim investors are looking for non-interest-paying assets that are regarded as appropriate by their religions, so they can invest their money in a manner that fits their values. In order to meet these financial needs, market forces are responding by adjusting their behavior's to meet a wide range of Islamic banking needs. There is a global alternative to conventional finance in Islamic countries, as well as other parts of the developing world. Over the last few decades it has been growing at a yearly rate of 10-22% over the previous few decades. It is a \$2.2 trillion industry that has been expanding for decades. It was predicted by analysts last year that Islamic assets worldwide will exceed \$3.5 trillion by 2021.(Mansoor, Siddiqui, Siddiqui, & Co-Movement, 2019). Historically, the current path of development of Islamic finance can be traced back to the establishment of the Barclay bank in Cairo, Egypt, more than one hundred years ago, which executed a number of financial transactions associated with the construction of the Suez Canal. In the 1930s, modern Islamic Finance and Economic theory developed in India, Pakistan, and other countries that have become part of the Indo-Pak Muslim world. Ahmed-el-Naga, a bank founded in Egypt in 1963, has been serving customers worldwide for over 50 years. In 1973, the Philippine government established a bank for Islamic sharia transactions. There were many countries in the Middle East which started Islamic banking in the early 1970s. Pakistan was one of the many countries that started Islamic banking during that period of time. In accordance with Shariah, one of the goals of human rights is to provide all people with the necessities of life, including housing (Maqasid Al-Shariah). The vast majority of people still end up having to finance their home purchase, however, because of the cost of purchasing a home. The Islamic belief of Riba prohibits it from being used in composing a traditional house loan. As we know, conventional house loans, issued by traditional banks in terms of Riba, are regarded as Haram (prohibited) in Islam. A wide range of Islamic banking products and services are offered by Islamic banks, including Islamic mortgages and Islamic loan plans available to individuals, corporations, and large investment firms. Murabaha, Bay Bithaman Ajil (BBA), Ijarah, Istisna are examples of debt-based financing. In respect to equity based financing, one example is a Musharakah Mutanaqisah (MM), also known as a Diminishing Partnership. In order to compete with conventional banks for investors, Islamic banks launched their products so as to attract more investors for Islamic banks and also for competing with their respective products launched by conventional banks. Based on Islamic law, these products provide protection for international money transfers in accordance with the Sharia. During periods of large increases in interest rates, it is hypothesized (Rosly, 1999), that the financiers increase their demand for Islamic financing, which reduces their interest payments on conventional loans. BBA is one of the most popular ways to raise money for the investor since it is the one that offers the best value for the investor. It has also been empirically evaluated (Rosly, 1999): theoretically, conventional interest rate

fluctuations have a positive impact on the volume of Islamic banking finance. It is due to the flexibility of their Islamic ideologies that have accelerated the popularity of Islamic banks, which was witnessed during global financial crises, with it growing at an annual growth rate of 10 to 15% during 1995-2005. , (M. S. N. Khan, Hassan, Shahid, & Finance, 2007). In banking, Islamic banking is defined as a structured, systematic and inconspicuous banking system that is run according to Islamic rules and regulations. Essentially, Islamic banking consists of two central risk-sharing tools and return-sharing tools. (Shahinpoor, 2009) said that These Islamic banking rules stipulate that the currency must only be used to carry out transactions between individuals and businesses. There are certain practices within Islamic banking which make it strictly forbidden to use the money available for any kinds of illegal activity including interest payments (riba), gambling (maisir) and gharar trading. Profitability is a fundamental goal of any business entity whose objective is to establish income, so the purpose of a company is to gain income. The present study aims to ensure that macroeconomic factors influence the growth of Islamic banks in Pakistan and identify, evaluate and assess their influence on the growth of Islamic banks in Pakistan. As a result, the objective of this research is to identify the most significant macroeconomic variables for Islamic banks which affect the growth of Islamic banks, as well as working as an aid to managers and policy makers by helping them minimize the impact of macroeconomic variables on the performance of Islamic banks.

2. Literature review

Islamic finance's (interest-free) financing modes and techniques are diametrically opposed to conventional finance's (interest-based) financing modes and approaches. The Islamic financial system is built on the principle of collaboration. ((Chapra, 2000);(Oudat, Ahmad, Yazis, & Finance, 2015; Wilson, 1995)). The presence of Islamic banks as financial institutions will have a significant impact, particularly in nations with considerable Muslim populations. They discovered evidence in favour of poverty reduction, particularly in rural regions, and predicted a considerable positive association between population increase and Islamic financial development. ((Abedifar, Molyneux, & Tarazi, 2013); (Cizakca, 2009); (Honohan & Finance, 2008)). An important and interesting study was drawn from the work of Johnson (2013), which found that the majority of Muslims in any given society is a crucial factor for the success of Islamic Finance. This implies that some of the benefits of convergence can be achieved through the appropriate deployment of Islamic Finance. The most relevant and stimulating variables in these studies were the variables of the monetary policy (M2, IR, and GDP) and Islamic bank deposits. In the other study monetary policy rate, inflation rate, Treasury bill rate, and saving deposit rate have also impacted on M2 in Islamic financing (Olawande, Emoh, & Ijasa, 2012). (Kassim, Majid, Yusof, & Development, 2009); the study examined the similar impact of shockwaves of monetary policy shocks on Islamic financing and conventional loaning in Malaysia, as well as the impact by the government of monetary policy shockwaves in a dual banking system. As a result of studies carried out in the past few years, it is clear that Islamic banks, if there is a change in monetary policy, it would definitely affect them more in part due to the type of products available on the balance sheet that are more vulnerable to changes in policy. Based on the study done by Kasri, (2010), it would be logical to assume that the deposits of Islamic banks are affected by the real income, rate of return, real rate of interest of conventional banks as well as the number of branches of Islamic banks. Similarly, the analysis of Adebola, Yusoff, Dahalan, & Accounting (2011) demonstrated that the IR of conventional banks influences the levels of financing of Islamic banks in Malaysia. As a result of the results he came to the conclusion that as opposed to conventional banks, Islamic banks provide an alternative to its financing.

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Furthermore it was determined that financing and IR have adverse effects on Islamic banking financing. According to the study conducted by (Abduh & Finance, 2011); for Malaysia (Al-Fawwaz, Alawneh, & Shawaqfeh, 2015); for Jordan (Nahar et al., 2016); a negative correlation was noticed between the Inflation rate and Islamic finance. Based on their research, they determined that Islamic finance is responsible for the increase in production as well as the decline in general prices of goods and services in the economy. As built into the table above is the argument that remittances provide an important contribution to the national savings in countries like Pakistan. Studies have determined that remittances contribute positively to national savings, and national savings in a country like Pakistan are not greatly affected by the government deficit and government investments. Zahid, Basit, & Research, 2018); investigated that GDP growth, M2 and REM play a positive and significant role while inflation rate, interest rate and savings are inversely related.

3. Methodology

3.1 Data and data collection

All the data is collected from the state bank of Pakistan website and also used WDI for certain variable. To capture the role of Islamic banks in development of the banking sector in the country, we will use the following model

$$GIB_t = \beta_0 + \beta_1 \text{REM Received}_t + \beta_2 \text{FDI}_t + \varepsilon_{it} \quad (1)$$

3.2 Overview of the chapter

The present chapter deals with the effects of FDI and Remittances received on the development of Islamic banking in Pakistan. The following model is selected for the analysis. GIB is the growth of Islamic banks. "FDI" is foreign direct investment. REM Received is given by "REM Received". The error term is denoted by " ε_{it} ". It is assumed that error term contains the effects of missing variables which are not included in the model but affect growth of Islamic banking in Pakistan. It also assumed that error term is normally distributed with zero mean and constant variance. It further assumed that error term is not serially correlated over time. One of the major assumptions about the below equation is related to the specification of the model. It is assumed that there is no specification bias in the model. The autoregressive distributed lag model (ARDL) is assumed to be the correct specification of the model. The ARDL version of the equation, with appropriate lag structure selected by the lag length criteria, is estimated by the Ordinary Least Square (OLS) method. Moreover, a test of co-integration based on the bound test is conducted. Short run and long run coefficients are estimated. It is because of the fact that macroeconomic variables may have different effects in the short run as well as in the long run. The estimated results are tested for basic assumptions of the classical linear regression. Most appropriate and robust results are reported for discussion and analysis.

4. Empirical Results and discussion:

4.1 Discussion and analysis

Introduction

The present chapter is developed to understand the relationship between inflows of remittance, foreign direct invest (FDI) and growth of the Islamic banking in Pakistan. Theoretically, inflows of remittances and FDI can result increasing the total assets of the Islamic banking in Pakistan especially Muslim families would prefer to keep received remittances in the Islamic banks of the countries in a number of investment

and savings products. However, FDI can also increase liquidity position of banking system of the country. Like preceding chapter, the analysis of the present chapter also starts with the descriptive statistics. Table No. 4.1 contains the correlation coefficients. The correlation coefficient between log of the total assets of the Islamic banking and FDI is negative, whereas, correlation coefficient is positive for remittance and log of the total assets. This table does not show the direction of causation. It means that it does not show that whether FDI negatively affect log of total asset or log of total asset negatively affect FDI. The same is the case with correlation coefficient of remittances and log of total assets.

Table No. 4.1: Correlation Coefficients

	LN_OF_TOTAL_ASSET	FDI	REM_RECEIVED
LN_OF_TOTAL_ASSET	1	-0.62838094078258	0.92781297591940
FDI	-0.6283809407825854	1	-0.80020503596550
REM_RECEIVED	0.9278129759194069	-0.80020503596550	1

The descriptive statistics of the selected variables are reported in the Table No. 4.2. FDI is the net flow as percentage of GDP. The average value of FDI is 1.33; with minimum value in the last 69 quarters from 2003Q4 to 2019Q3 is 0.38. The maximum value is 3.66. The average inflow of remittance is 5.709227, with its maximum value is 7.66 and its minimum value is 3.73. The time series of FDI is positively skewed and remittance series is negatively skewed. The coefficient of the kurtosis is 3.22 for FDI, and 1.54 for remittance series. Values of the Jargue-Bera test show that both FDI and remittances are not normally distributed. The value of test statistic for FDI is 19.45 with probability value of 0.00060. It means that the probability value of the test statistic is lower than the one percent significance, which means that null hypothesis cannot be accepted which states that series is normally distributed.

Table No. 4.2: Descriptive Statistics

	LN_OF_TOTAL_ASSET	FDI	REM_RECEIVED
Mean	8.653718	1.332752	5.709227
Median	8.869258	0.891278	6.242434
Maximum	10.61766	3.668323	7.665410
Minimum	5.893024	0.382827	3.730765
Std. Dev.	1.334245	0.964407	1.313063

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Skewness	-0.369775	1.295549	-0.270245
Kurtosis	1.976952	3.227492	1.544530
Jarque-Bera	4.581487	19.45093	6.930250
Probability	0.101191	0.000060	0.031269
Sum	597.1066	91.95988	393.9367
Sum Sq. Dev.	121.0543	63.24548	117.2412
Observations	69	69	69

Time series data may and may not be stationary. If time series data is stationary, a simple single equation model can be estimated using Ordinary Least Square method (OLS). However, if time series is not stationary, that is, there is a unit root processes in the time series then application of OLS to estimate simple linear regression model can results in the spurious correlation coefficients. In other words, estimating a linear regression model with help of non-stationary time series data will report coefficients which are not statistically valid. On one side, there will be higher R-Square of the model suggesting better fit and on the other side individual coefficients may also be statistically significant but still results will be misleading. It is in this context that table no 4.3 is reported to know about the issue of unit root in the time series in the data. In the same table, it can be seen that FDI is non-stationary at level when only intercept is included in the regression equation. But if trend and intercept is inserted in the regression equation, the same FDI series become stationary at level. It means that results are mixed.

Table No 4.3: Unit Root Test (Results of ADF Test)

Level		
Variables	Intercept	Trend & Intercept
LN_OF_TOTAL_ASSET	-3.565694 (0.0093)***	-1.566708 (0.7950)
FDI	-2.388704 (0.1488)	-3.357953 (0.0661)
REMETANCES	-0.353805 (0.9102)	-1.806344 (0.6905)
First Difference		
Variables	Intercept	Trend & Intercept

LN_OF_TOTAL_ASSET	-4.188658 (0.0014)***	-4.687744 (0.0019)***
FDI	-2.789910 (0.0656)**	-3.432457 (0.0575)**
REMETANCES	-5.203918 (0.0000)***	-5.148210 (0.0004)***

In case of time series of remittance, it non stationary at level in both the cases whether intercept or trend plus intercept is placed in the regression. When time series is non-stationary at level, it can be seen whether it becomes stationary when first difference is taken or not. In the present case, all the series are stationary at the first difference, that is, FDI and remittances are integrated of order one. When time series are integrated of the same order, they may likely have co-integrated. In this context, the test reported in the table no 4.4 contains output of Bound test. The value of the bound test is 6.19. This value can be compared with the lower and upper bound critical values. It can be observed that value of the statistics lies between the two bounds when compared with one percent critical values. However, if critical value is 2.5 percent or higher, the value of the test statistic is higher than the upper bound. It means that there are evidence of co-integration relationship at 2.5 critical values of the bound test.

Table No 4.4: ARDL Bounds Test.

Level		
Test Statistic	Value	k
F-statistic	6.192825	2
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

Table No 4.5: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	4.954591	Prob. F(2,60)	0.0102
Obs*R-squared	9.496824	Prob. Chi-Square(2)	0.0087

Table No 4.6: Heteroskedasticity Test: Breusch-Pagan-Godfrey

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F-statistic	9.259175	Prob. F(4,62)	0.0000
Obs*R-squared	25.05595	Prob. Chi-Square(4)	0.0000
Scaled explained SS	20.60283	Prob. Chi-Square(4)	0.0004

It is established with the help of the Table No 4.4 that there is evidence of long run equilibrium relationship among the variables. Now it is necessary to test for the serial correlation and heteroskedasticity in the regression equation. Table No 4.5 and 4.6 contains results of both the test. In both the tables, reported probability values are so smaller that null hypothesis cannot be accepted. Null hypothesis of no evidence of serial correlation and Heteroskdasticity, in the model, cannot be accepted. The same is also concluded with help of the table No 4.7.

Table No 4.7: Heteroskedasticity Test: ARCH

F-statistic	58.98393	Prob. F(1,64)	0.0000
Obs*R-squared	31.65405	Prob. Chi-Square(1)	0.0000
Scaled explained SS	20.60283	Prob. Chi-Square(4)	0.0004

Finally, the estimated coefficients of the co-integration relationship are given in the table no 4.8. It can be seen that coefficient of the error correction is negative and -0.027267 and significant at 10 percent level of significance. It means that if there is any disequilibrium in the current quarter, 2.7 percent is corrected in the next quarter. It points towards a slow pace of adjustment of the system back to the equilibrium.

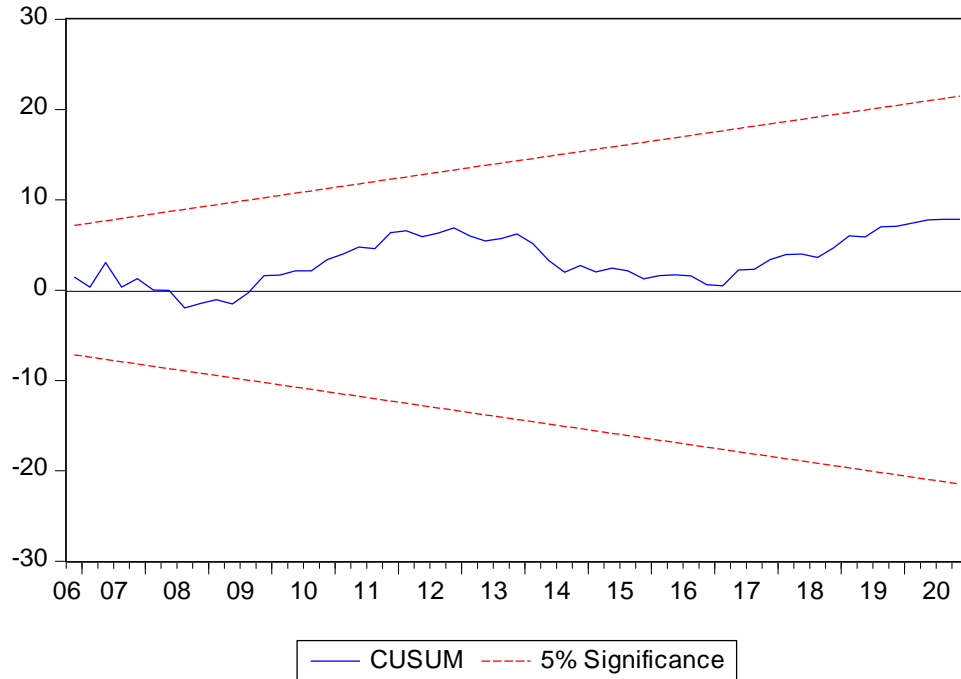
There are three lag values of the total assets as explanatory variables in the model. The first two lags show positive effect, whereas, the last lag shows the negative sign. The first lag is not statistically significant, whereas, the last the two lags are highly statistically significant. It means that the lag structure of the log of the total assets shows mixed results on the current values of the log of total assets. Short run effect of FDI and remittances are not statistically significant. Effect of FDI is negative and effect of remittance is positive. It means that more inflow of FDI results in the lower total assets of the Islamic banks of Pakistan. Similarly, increasing net flow of remittances means greater total assets of the Islamic banks. However, FDI and remittances have positive effect on the total assets of Islamic banks in the long run. Moreover, coefficient of FDI is not significant, whereas, coefficient of remittance is highly significant. It means that one unit increase in the net inflow of remittances increase the growth of Islamic banking by 0.75 units.

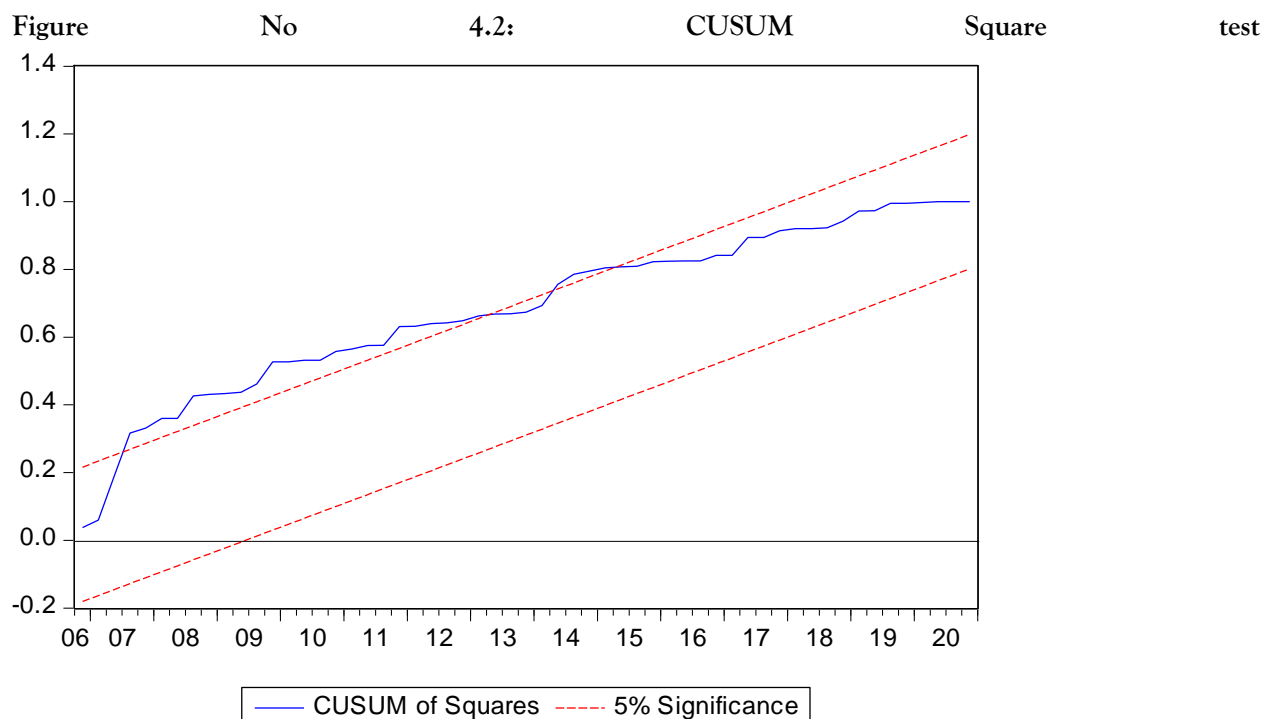
Table No 4.8: Short Run and Long Run Estimates

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LN_OF_TOTAL_ASSET(-1))	0.031747	0.119424	0.265835	0.7913

D(LN_OF_TOTAL_ASSET(-2))	0.406044	0.101889	3.985155	0.0002
D(LN_OF_TOTAL_ASSET(-3))	-0.390741	0.111759	-3.496290	0.0009
D(FDI)	-0.031951	0.031260	-1.022099	0.3111
D(REM_RECEIVED)	0.020331	0.017047	1.192648	0.2379
CointEq(-1)	-0.027267	0.015046	-1.812290	0.0752
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	0.463455	0.320835	1.444530	0.1541
REM_RECEIVED	0.745636	0.294743	2.529780	0.0142
C	6.102681	2.796759	2.182054	0.0332

Figure No 4.1: CUSUM Test





The stability test of the model is given in the figure no 6.1 and figure 6.2. It can be seen the variances of the residuals, represented in the figure no 6.2, are within the critical line which shows that model is stable with the passage of time. However, the test given in the figure 6.2 suggests that variances of the residuals are not stable. These are instable, and changes with the passage of time. It is a weakness of the model.

5. Conclusion and recommendations

The study has been used quarterly data for Islamic banks in Pakistan for the period of 2003q3 to 2019q4. The data was extracted from the Annual Banking Statistics, a publication of the State Bank of Pakistan and the World development indicators (WDI) of the World Bank. For relevant literature different database search was carried out by gathering the different data sources from the study, like online journals, written papers, news accounts, and news articles. The information collected from most of these outlets is quantitative and, as a way to highlighted the macroeconomic factors that affecting Islamic banking growth in Pakistan, has given information related to financial technology. The collected data, provided the details on the current situation and established the predicted results on macroeconomic factors that affecting Islamic banking growth begin as an instrument for boosting the economic banking growth in Pakistan. The reputable information presented the real and accurate details on the latest work commence; in this comprehensive research, these are a more effective method of collecting the data. The banking sector progress is provide by taking total assets which serves as the dependent variable. The independent variables include Real and effective exchange rate and inflation. The main theoretical rational behind this hypotheses is the nominal channel of inflation pass through. Economic theory explains that inflation measured by consumer price index means greater cost of living, which can lower savings and thus investment.

The choice of independent variables has been determined through the extant literature and in context of the banking system in Pakistan. A complete description, of the variables used. In order to

verify the relationship between macroeconomic factors and Islamic banking growth in Pakistan analysis has been performed like descriptive analysis for checking the strength of study. In order to make the study more reflective and easy to track, the findings and analysis chapter has been described which provide insights of the macroeconomic factors that affecting Islamic banking growth in Pakistan.

Given the growth trajectory of Islamic banking in Pakistan, it is pertinent for policymakers to discover the effects of Islamic banking across the overall banking development in the country. A reconfirmation on this front also helps to support the increasing popularity of Shariah-compliant products by Islamic banks. The study is the first of its kind to address this issue on empirical grounds in Pakistan. Given the fact that both Islamic and non-Islamic banks are in competition with each other yet, the existence of Islamic banks provides an acceptable solution to the religious-minded people in the country as well as it plays an importance role in the development of banking sector of Pakistan. Results empirical data analysis reveal that Islamic banking supports the development of the banking sector. Coefficients on total assets and Islamic banking penetration reinforce each other to confirm the augmentation of banking in Pakistan by the Islamic banks. The study also recommend policy and managerial implications for policy makers and managers of Islamic banks in Pakistan. On policy front, it can be recommended that the share of Islamic banks needs to be augmented further and those who are financially excluded might be encouraged to make use of Islamic banking products. In terms of managerial considerations, it would be useful for managers of these banks to maintain and intensify resource mobilization drive through deposit generation and credit creation. The study owns certain limitations in terms of a single country analysis and lacks generalization of results. However, it supports the findings made in a multi country study by Gheeraert (2014). Given that the Islamic banking has reached its critical mass, a natural extension of the study might be to examine whether Islamic banking serves as a substitute for or a complement to non-Islamic banks in a Muslim majority country like Pakistan. However, this can be an agenda for the future. Regulatory bodies should take a serious step for encouraging the international investors for investment in Pakistani Islamic Banking industry as well as promoting the foreign reserves. There is great consumer market and human capital and Pakistan increase the growth of economy through foreign investment. Due to these developments Islamic banks grow rapidly. In Pakistani banks maximum family own businesses so many people open account with family name in banks not just as company, To increase the accountability, Islamic banks should adopt the smaller size board of director team because in larger size director team more complex and difficulties in decision making of monetary policy. The best of my knowledge and efforts apply to conduct this research work in which we made a useful contribution for the academia, practitioners, governmental regulatory bodies, policymakers and Islamic banks executives; therefore, some limitation written up regarding to this study. In present study analyze only few macroeconomic factors of Islamic banking. The study model applies only on Pakistani Islamic banks. Finally, the results gathered from banks those are operating in Pakistan from the official online resources of state bank of Pakistan.

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