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Financial Risk and Foreign Direct Investment: Evidence from Pakistan Economy

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Abstract

The purpose of this paper is to inspect whether Financial risk influence FDI in Pakistan economy. In order to achieve the study objective and to answer the question, the Unit root test, Co integration test, OLS methodology and Granger causality test has been used. Time series data for the year 1982 to 2011 is used and this study measures the financial risk by considering foreign debt services, exchange rate, foreign debt and current account. The study results signify that efficient use of foreign debt can attract more foreign direct investment in the country. The paper shows that financial risk has significant impact on foreign direct investment.

Keywords: Foreign direct investment, foreign debt, exchange rate, current account, financial risk.

1.1 Introduction

The world has become global village and successful business do not stay in one place to limit its profit portfolio. Moreover, it is intended by business to invest and start operations in any other country to increase their market share and for the sake of taking benefits out of it. Therefore, the type of investment which is made by home country in the host country is referred to as foreign direct investment (Ioneci & Mindrect, 2010). Over the last couple of years, Pakistan is considered to be a viable region for foreign investment but certain factors limits the foreign investment in Pakistan. However, FDI plays a vital role in Pakistan's economy and it is considered to be an ideal region in Asia (Khan & Nawaz, 2010). The rate of return on FDI is comparatively high in Pakistan among the other important Asian host countries. Looking at the facts, developing countries have average rate of return as follows: China \$5.8M, Indonesia \$5.4M and Pakistan \$7.0M (UNCTAD 2003). Despite of these facts, Pakistan has been able to attract more FDI by contesting countries like china, India, Korea and Hong Kong (Jafri et al., 2012).

According to State Bank of Pakistan (SBP), the data on international Investment position reflecting total stock of FDI in Pakistan at the end of year 2011 was US\$ 21.88 million. Figure 1 illustrated that annual FDI inflow in Pakistan remained less than US \$ 1 million up to year 2003. But in crisis period, annual FDI inflow in year 2007 and 2008 were recorded US\$ 5590 million and US\$ 5438 million respectively.

TABLE 1
International Investment Position of Pakistan (Million US\$)

| International Investment Position Components | Stock as on 31 December | | | | |
|--|-------------------------|----------|----------|----------|----------|
| | 2007 (R) | 2008 (R) | 2009 (R) | 2010 (R) | 2011 (P) |
| International Investment Position – net | (50,754) | (52,298) | (54,822) | (59,164) | (61,366) |
| A. Assets | 22,769 | 17,993 | 23,374 | 26,158 | 26,564 |
| 1. Direct investment abroad | 1,249 | 1,960 | 1,851 | 1,362 | 1,432 |
| 2. Portfolio investment | 330 | 142 | 153 | 178 | 192 |
| 3. Financial derivatives | – | – | 27 | 21 | 11 |
| 4. Other investment | 5,654 | 6,258 | 6,203 | 6,649 | 7,309 |
| 5. Reserve assets | 15,536 | 9,633 | 15,140 | 17,949 | 17,620 |
| B. Liabilities | 73,523 | 70,291 | 78,196 | 85,322 | 87,930 |
| 1. Direct investment in Pakistan | 25,621 | 16,473 | 17,674 | 19,828 | 21,876 |
| 2. Portfolio investment | 6,767 | 4,723 | 3,548 | 4,488 | 4,014 |
| 3. Financial derivatives | – | – | 57 | 51 | 41 |
| 4. Other investment | 41,135 | 49,095 | 56,917 | 60,955 | 61,999 |
| of which Loans | 39,038 | 46,602 | 51,605 | 55,194 | 56,231 |

Source: State Bank of Pakistan



It is a well-known fact that FDI is advantageous factor for economic growth and development. Furthermore, it has been given much attention at both international and national level. In addition, foreign investment is viewed positively by any state and considered as a growth engine for economy. FDI has its own importance for economy and has the ability to provide employment opportunities, goods and services, access to foreign markets for sale, information, financial capital, management skills, managerial experience and transfer of leading technology. Due to such benefits, developing nations like Pakistan have encouraged to attract FDI inflow. The declining trend of FDI in Pakistan after 2008 was mainly due to weak law and order situation, political instability, energy crises and weak economic activity along with global recession. Subsequently, it is cleared that in Pakistan there are some risks associated with FDI inflows.

In many other empirical evidences it has been argued that inflow and outflow of FDI is a major factor in developing countries in order to reduce the deficiency of capital and technology. In contrast, the challenges faced by developing countries are now creating business friendly environment. Taking the view point of foreign investor, financial and economic risks factors can influence investment decision as these determine business friendly or conducive environment to invest. On the other side, financial risk influence FDI decision as foreign investors are encouraged by the economy that has low or acceptable financial risk. Economies with stronger currency show eagerness to invest in the countries which containing weaker currency in order to get maximum advantage (Ho & Rashid, 1993). However, financial risk in terms of high foreign debt can be a big hurdle in attracting FDI. But when considering economic risk, past studies confirm that high inflation rate discourage the foreign investors to invest (Wadhwa and Reddy, 2011) while low gross domestic growth discourage foreign direct investment (Lin & Man, 2009). Previously, many studies have been argued the impact of economic and financial risk on FDI. It can be concluded that decrease in political risk lead to an increase in inflows of FDI and encourage business. Some of the studies indicated that financial risk is not associated with FDI whereas level of political change has effect on FDI. (Khrawish and Siam, 2012) indicated that FDI should promoted through incentives to attract new investment. Globally, Jordan economy showed strong association between financial and economic factors. (Catherine and



Rashid, 2012) draws our attention towards economic and financial risk factors on FDI. Evidence presented in their study suggested that, financial risk have significant relationship with FDI while economic risk can be a contributing factor for FDI. To the best of author's knowledge, no such study have been conducted on the perspective of Pakistan regarding financial risk effect on FDI inflows. Thus, there is a need of conducting such study on effect of financial risk on FDI inflow in Pakistan which can be a contributing factor in the economy. In addition, most of the developing countries consider foreign direct investment as an important source of development. So this study can be helpful for those who want to find out the financial risk association with FDI in Pakistan.

2.1 Theoretical Background

Theoretically, foreign debt can be consider in the form of additional resources, financial, technical and managerial requirements. Foreign debt can be taken to support the development process and to enhance more conducive environment as well as infrastructure to attract foreign investors(Ajisafe et al., 2006).Therefore, increase in infrastructural growth may attract foreign investor to invest and eventually foreign investment increases.

Many theories explain that when country take more debt, then its repayment becomes a problem especially for developing countries. Excessive burden on foreign debt increases foreign debt services which results in decrease of growth and increase of country risk. This fact makes country less attractive for foreign investors to invest and FDI pattern deceases(Bengoa & Robles, 2003).

Furthermore, increase in exchange rate depreciates the currency value of host country which some attracts the foreign investors to invest because it benefits them in terms of profit relative to their own country(Froot & Stein, 1991). However, volatile exchange rate can increase the risk and uncertainty to invest for foreign investor which decreases the FDI inflow pattern (Kiyota & Urata, 2004)

Looking at the current account deficit, it shows the country import goods and services are more than its exports. (Gosh & Ramakrishan, 2012) argued that, countries that have current account deficit have more fast economic development and growth. But when countries have better



economic growth, they are more likely to get attracted by foreign investor which allows foreign capital to increase.

2.2 Literature Reviews

Ajisafeet al. (2006) analyze the relationship between foreign private investment and foreign debt in Nigeria by using vector autoregressive model. They have considered time series data over the period from 1970-2003. Results of the study implies that, foreign debt and foreign private investment have significant association while granger causality results suggest a bi directional cause between them. It can be concluded that foreign debt can be beneficial for economy as it brings foreign investment but over use of foreign debt can discourage foreign investment.

One study by Furceri & Borelli (2008) examine the effect of volatility of exchange rate on FDI inflow in EMU neighborhood countries. They have used panel data over the period from 1995-2004 and applied Hausman test. Their investigation reported that impact of volatility of exchange rate on FDI inflow is significant and positive at low level of openness while negative impact at high level of openness in EMU neighborhood countries is observed. Study concluded that FDI inflow in emerging and transition economies is viewed more valuable because of limited domestic resources. In addition, FDI inflow is also characterized by higher stability in exchange rate.

In the same vein, Colemanand &Agyire (2008) analyze the effect on foreign direct investment of exchange rate volatility in Sub-Saharan Africa. They have appliedARCH and GARCH models along withECM. Their study considered time series data from 1970-2002. Evidence suggested that real exchange rateand exchange rate volatility has significant negative impact on FDI while trade openness has insignificant positive impact on FDI. In addition, GDP per capita has insignificant and negative association with FDI whereas political stability and lag of FDI has significant positive relationship with FDI. However, globally exchange rate is considered as an essential factor to determine FDI inflows.

Similarly, Osinubi & Amaghionyeodiwe (2009) inspect the impact of exchange rate volatility on foreign direct investment in Nigeria. They have performed unit root test, correlation matrix, granger causality and co-integration test by using time series data over the period from 1970-2004. Findings indicate that exchange rate has significant positive impact on FDI while exchange



rate volatility have insignificant negative impact. Furthermore, interest rate has significant positive impact in parsimonious model while real GDP has insignificant positive impact on FDI in Nigeria. Hence, if exchange rate is more volatile than foreign investor would be reluctant to invest because they are concern with future profit.

To better understand the mechanism of financial risk on FDI, Khrawish & Saim(2010) conducted a study to analyze the economic and financial risk at macro level on FDI in Jordan. Their estimations was based on multiple regression models over the sample period from 1997 to 2007. The results of economic model indicate that real GDP growth, GDP per head, budget balance, current account balance and inflation rate have significant positive impact on FDI. On the other side, results of financial model suggested that exchange rate stability, foreign debt services, foreign debt and current account have significant positive impact on FDI in Jordon. However, the foreign investment inflow in Jordon has been affected by instability of economy.

More specifically, Omankhanlen(2011) analyze the impact of inflation and exchange rate on foreign direct investment and its link with economic growth in Nigeria. Study considered a time series data from 1980-2009 and applied OLS method. The results of model one indicate that foreign direct investment, government expenditure and gross fixed capital formation has positive impact on GDP whereas results of model 2 indicate that inflation rate has negative insignificant impact. In addition, foreign exchange rate has positive impact on FDI in Nigeria. Study conclude that, government has been involved in attracting FDI in the sample period but this FDI inflow has been affected by some political and economic issues in the country.

Anagnostis (2011) highlighted the factors affecting FDI by performing analysis in emerging economies. The results show that factors like state bureaucracy, weak economy, social and political corruption have negative impact on inflow of foreign direct investment in Balkans and Black sea countries. Furthermore, most of the economies have been facilitated by capital flows as they have attracted foreign investment by developing friendly environment for investment while other economies could not attract foreign investors due to their economic and political issues.

In addition, Amadou (2011) find out that how domestic investment in Togo is affected by foreign capital by using Error correction models over the time period of 1970-2008. The results in his



investigation indicate that FDI and loans have significant positive impact on domestic investment while portfolio investment is the factor that has insignificant negative impact on domestic investment in Togo. It can be concluded that, foreign capital inflow can be beneficial for country's domestic investment because it can cause interest rates to decrease as well as in order to attract foreign investors for foreign capital inflow.

Anilet al. (2011) draws our attention towards the factors of out flow of foreign direct investment in Turkish firms over the period from 1989-2005. The results show that personnel quality, training programs quality, foreign market experience, brand image & trade mark, and company's international experience are the factors that have insignificant negative impact on FDI outflow. In addition, managerial and technological know-how and ability of developing different products are the factors having significant negative impact on FDI outflow of Turkish firms. Consequently, approach for internationalization is linked with resources, knowledge sharing and cost reduction purpose to operate in the low competitive markets.

Iliescuand Dinu (2011) examine the relation between FDI inflows and country risk by using linear regression model and t-test over the sample period of 2000 and 2010 in Romania. The results indicate that country risk is the determinant which has significant negative impact on foreign direct investment in Romania. However, to attain profitable foreign investment it is essential to determine and minimize the risk that can affect the FDI because expansion.

By drawing an extensive range of knowledge, Catherine & Rashid (2012) examined the importance of economic, financial and market risks on making decisions for FDI. They have performed cross-tabulation analysis, chi-square test and stratified random sampling method in Malaysia. Evidence presented in their study revealed that market risk factors including, transportation and technological services availability have significant impact on FDI. On the other side, economic risk factors like access to market and ease of doing business are also significantly associated with FDI. In addition, financial risk factors including, access to capital, exchange rate stability and interest rate stability showed contribution towards FDI in Malaysia. Consequently, foreign investor now prioritized the region that offers low cost, availability of labor and resources. Study recommended that Malaysia should improve its services, quality of labor and facilities to attract more FDI in the country.



Furthermore, Chaudhary et al. (2012) investigated the effect of exchange rate on foreign direct investment in Asian economies. They have applied Autoregressive Distributed Lag (ARDL), GARCH and Error Correction model by using annual time series data for the sample period of 1980 to 2010. Empirical findings suggested that in long run, exchange rate volatility has significant positive impact on FDI in Pakistan, Sri Lanka, South Korea, Turkey and Israel. In addition, it is significant negative in India while insignificant negative in Bangladesh, China, Japan, Indonesia, Thailand, Singapore, and Iran. But insignificant positive in Malaysia. On the other hand, in short run exchange rate volatility has significant negative impact on FDI in Pakistan, India, Sri Lanka Japan, South Korea, Singapore, Turkey and Israel while insignificant positive impact in Bangladesh, China and Iran along with insignificant negative impact in Malaysia, Indonesia and Thailand. It can be concluded that, inflow of FDI in Asian countries is more because many multinational firms operate their business in this region due to the availability of resources and huge markets are available for business.

In the same line, Samiullah et al. (2012) also examined the correlation of FDI with exchange rate volatility in Pakistan. Their estimations considered ARCH/GARCH technique, granger causality, volatility analysis, vector error correction mechanism by using time series data from 1980-2010. The results indicated that inflation, exchange rate volatility, trade openness and exchange rate are the main factors for FDI. It is further concluded that exchange rate and trade openness have positive significant impact on FDI while exchange rate volatility has negative significant association with FDI. In addition, inflation rate has positive insignificant impact on FDI in Pakistan. Hence, it is necessary to minimize volatility in exchange rate to keep exchange rate in control while it has to encourage with economic liberalization for development of financial markets and FDI inflow.

In another study of Jankovic & Yatrakis (2013), financial policies for inflow of FDI in Slovakia and The Czech Republic have been analyzed. They have used Co-integration analysis and Vector Autoregressive model. The results of the study shows that consumer price, trade, exchange rate, current account, lending rate, stock market index and Fitch index of country risk are the main factors to determine FDI in the country. Furthermore, current account and consumer price has positive significant impact on FDI while exchange rate and lending rate has negative significant



impact on FDI. On the other side, stock market has negative insignificant impact on FDI in Czech Republic while current account, exchange rate and stock market have positive significant impact on FDI. In addition, lending rate has negative significant impact on FDI and consumer price has negative insignificant impact on FDI in Slovakia. Consequently, to improve financial environment in Slovakia and The Czech Republic, it is required to improve quality of life and standard of living in these countries.

More recently, Payaslioglu & Polat (2013) investigated the exchange rate instability effect on FDI inflow in context of Turkey. They have performed two models; GARCH and Markow Regime over the sample period of 2004-2012. The results indicated that real exchange rate uncertainty, real exchange rate, inflation, dummy variable, conditional volatility, Lag value of inward FDI, confidence index, transportation and communication index, policy interest rate ratio are the major factors to estimate FDI. Furthermore, conditional volatility has insignificant positive impact on FDI while dummy variable, interest rate and confidence index have significant positive impact on FDI. In addition, real exchange rate, transportation and communication index and inflation have insignificant negative impact on FDI. It can be concluded that if Turkish economy can move from protectionism to trade liberalization then foreign investment is likely to be increases.

3.1 Methodology

In this study, we have used a time series data for the sample period of 1982 to 2011. The data is gathered from State bank of Pakistan (BP) and World Bank official database. Traditionally, the results of standard unit root test i.e. Augmented Dickey Fuller (ADF) test statistics have been used to check the data stationarity. This test has a null hypothesis of data is non stationary against the alternative hypothesis of data is stationary and is calculated at constant (C) and constant with time trend (C & T) by using ADF and Phillip Perron (PP) methodology. After examining the stationarity of data, Co-integration (Johansen and Juselius methodology) have been applied to find out the long run or short relationship. The OLS methodology is widely available in previous studies along with Granger causality test to check the relationship between the variables. Therefore, this study have adopted OLS regression model which suggest the most impacting factor to the dependent variable also the significance of independent variables with

dependent variable. Furthermore, Granger causality test is used to check the causal direction of the variables.

Consequently, on the basis of theoretical and empirical studies, the model for the foreign direct investment in the form of mathematical function is as follows:

$$FDI_t = \beta_0 + \beta_1 FDS_t + \beta_2 FD_t + \beta_3 EXR_t + \beta_4 CA_t + \varepsilon_t \quad (3.1)$$

Where, FDI is the foreign direct investment, FDS is the foreign debt and services, FD is the foreign debt, EXR denotes exchange rate and CA represents current account balance.

4.1 Estimations and results

4.1.1 Unit root test

To check the long run association of the given time series, it is mandatory to estimate their stationary properties first. A conventional unit root test with Augmented Dickey fuller (ADF, 1979) and Phillip Perron (PP, 1988) methodology is used. The test results are reported in Table-4.1.

< Insert table 4.1 here >

Table 4.1 illustrates that all variables were tested their stationary properties at level and first difference, which implies that all variables are stationary at first difference and the given time series can exhibit a long run relationship.

4.1.2 Co-integration test

The Co-integration method of Johansen and Juselius (1990) is applied to estimate the long run relationship. The results of this test are reported in Table-4.2.

< Insert table 4.2 here >

It is apparent from table 4.2 that null hypothesis of no Co-integration has been rejected in favor of alternative that there is Co-integration vectors at trace statistics and maximum Eigen value of 5% level of significance. Therefore, it can be concluded that there exists a long run relationship between the study variables.



4.1.3 OLS Test results

Regression analysis was used to estimate the long run determinants of FDI in Pakistan. The results obtained from this method is presented in Table-4.3

< Insert table 4.3 here >

Table 4.3 revealing in different ways, First foreign debt and services exhibits negative and significant relationship with foreign direct investment. This result is consistent with Kok & Ersoy (2009). When a country like Pakistan payback their service charges on its foreign debt, the foreign direct investment depreciates. Secondly as expected, the exchange rate has negative and significant impact on foreign direct investment. This output is also confirmed with Khan & Nawaz (2010).It is suggested that FDI activities have direct influence with exchange rate as it has ability to change the amount of FDI. When local currency depreciates, negative and positive impact on FDI can be expected. But in our case production cost and wages are contracted for the investor which implies the decrease in return on investment of FDI. Thirdly, foreign debt has also significant but positive relationship with FDI which is obvious in a country like Pakistan. As foreign debt is taken to invest in the advancement of infrastructure and other activities to gain the confidence of foreign investor which further allows FDI pattern to increase. Fourthly, study also reveals a negative and significant impact of current account on FDI which is in agreement with Saidi et. al (2013). This finding implies that, negative impact indicated the deficit in current account balance. Many countries tried to wrap this deficit generally by applying high tax rate on foreign and domestic companies. Therefore, investment cost increase and it decrease FD in the country.

4.1.4 Causality analysis

The causal direction between the independent and dependent variables is tested by using Granger (1969) causality test. This test of causality is performed on our model at lag two. Jones (1989) supports the ad hoc selection method in Granger causality test for lag length prior to the other methods that determine optimal lag length.

< Insert table 4.4 here >



From the data in table 4.4 it is apparent that there exists uni-directional causality running from FDS to FDI and FD to FDI while ER to FDI showed no causality. On the other side, FDI showed uni-directional causality running from FDI to ER and bi-directional causality is found running from CA to FDI and FDI to CA.

5.1 Conclusion

In the changing environment, FDI becomes the important factor to analyze and measure the economic performance in a country. This research has focused to investigate the impact of financial risk on FDI in Pakistan. We have collected a time series data from 1982 to 2011. The study applied Unit root test on data to check the stationary properties while Johansen Juselius methodology is then used to check the long run or short run association among the variables. Our estimations further examined the long run determinants of FDI by applying OLS method along with Granger causality test to test the causal direction of variables.

On the basis of empirical findings, we find that foreign debt services, exchange rate and current account has negative and significant impact of foreign direct investment in Pakistan. This negative relationship implies that, Pakistan is unable to utilize efficiently its external debt in the study sample which leads to increase currency depreciation and higher financial charges on debt incurred. Furthermore, foreign debt has positive and significant impact on foreign direct investment which implies that Pakistan has more opportunities to invest in infrastructure. In this regard, Pakistan is gaining foreign investor confidence which leads to increase foreign direct investment in the country. Due to mis-management of external debt, factors like exchange rate, current account deficit and service charges on debt is increases in the sample period. There are some other factors like weak economic conditions, political instability and law and order situation that can also affect the foreign direct investment in Pakistan. Moreover, if given importance to some financial risk factors then foreign direct investment can be increased. It plays a significant and vital role in development of country's economy and growth. It is therefore recommended that considerable importance should be given to foreign debt to increase foreign direct investment as it has been observed the most influential factor.



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Appendix

Table 4.1: Stationarity Test Results:

| Variables | ADF test | | | | PP test | | | |
|------------|----------|--------|--------|--------|---------|--------|--------|--------|
| | I(0) | | I(1) | | I(0) | | I(1) | |
| | C | C&T | C | C&T | C | C&T | C | C&T |
| CA | -2.099 | -2.103 | -5.089 | -5.229 | -2.125 | -2.068 | -5.084 | -5.237 |
| EX | 1.221 | -2.848 | -3.398 | -3.496 | 1.023 | -1.909 | -3.126 | -3.456 |
| FD | 2.975 | 0.997 | -4.668 | -6.145 | 3.615 | -0.382 | -4.047 | -4.963 |
| FDI | -2.350 | -3.181 | -4.647 | -5.140 | -1.790 | -2.215 | -3.277 | -3.330 |
| FDS | -0.664 | -2.875 | -6.724 | -6.834 | -0.314 | -2.881 | -6.926 | -7.124 |

Note: The critical values for ADF and PP tests with constant (C) and with constant and trend (C&T) at 1%,5% and 10% level of significance are -3.711, -2.981, -2.629 and -4.394, -3.612, -3.243 respectively.

Source: Authors' estimation

Table 4.2: Cointegration test results

| Null Hypothesis No. of CS(s) | Trace Statistics | 5% critical values | Max. Eigen Value Statistics | 5% critical values |
|---------------------------------|---------------------|--------------------------|--------------------------------------|--------------------------|
| None * | 84.208 | 69.818 | 52.513 | 33.876 |
| At most 1 * | 31.695 | 47.856 | 16.875 | 27.584 |
| At most 2 * | 14.82 | 29.797 | 8.606 | 21.131 |

Source: Author's estimation

Table 4.3: Long Term Determinants of FDI

| Variables | Coefficient | t-stats | Prob. |
|---------------------|-----------------|---------|-------|
| C | -12.948 | -2.639 | 0.014 |
| FDS | -0.4496 | -2.0809 | 0.047 |
| FD | 3.6734 | 7.025 | 0.000 |
| ER | -0.0267 | -2.5465 | 0.017 |
| CA | -0.0001 | -5.6552 | 0.000 |
| Adj. R ² | 0.947 | | |
| D.W stats | 1.83 | | |
| F-stats (prob) | 130.571 (0.000) | | |

Note: at 5% level of significance

Source: Author's estimation

Table 4.4: Results of Granger Causality Test

| Dependent Variables | FDI | FDS | FD | ER | CA |
|---------------------|--------|--------|--------|--------|--------|
| FDI | - | 2.6590 | 3.0530 | 2.0850 | 2.8460 |
| | - | 0.091 | 0.066 | 0.147 | 0.078 |
| FDS | 0.2556 | - | 4.3480 | 3.9940 | 0.7950 |
| | 0.776 | - | 0.025 | 0.032 | 0.463 |
| FD | 0.5100 | 1.0370 | - | 1.8570 | 1.4240 |
| | 0.606 | 0.370 | - | 0.178 | 0.261 |
| ER | 5.9480 | 1.0630 | 2.3630 | - | 7.5970 |
| | 0.008 | 0.361 | 0.116 | - | 0.002 |
| CA | 3.4140 | 0.3000 | 0.7490 | 5.6940 | - |
| | 0.050 | 0.743 | 0.483 | 0.009 | - |

Note: as per Akaike Information Criteria (AIC), Lag length in each case is two
F-statistics Critical values can be found in Gujarati (1995), p. 814.

Source: Author's estimation