

Interest Rates, Government and Private Investments and Pakistan Economy: An Analysis of Three Decades

NAVEED IQBAL MUHAMAD FAROOQ JAMIL
Muhammad Ali Jinnah University Islamabad Pakistan

Abstract

The paper investigates the relationship between interest rates and private investment with the economic growth in Pakistan. One of the primary plans of economic policies is to increase investment that is important for better economic performance using time series analysis and annual data from 1980 - 2010. The structural equation model is used to find out the relations of the variables in the model with help of the regression equations. The empirical results indicate that private investment, government expenditures and labor force have significant positive effect on gross domestic product but foreign direct investment has negative and statistically significant relation with gross domestic product. There also exists a unique long-run relationship between economic growth and its determinants, including interest rate. The results imply that the behavior of interest rate is important for economic growth in view of the relationships between interest rates and investment and investment and growth. Private investment, government expenditure and foreign direct investment first individually estimated than used the estimated values in main equation of the study.

Keywords: Gross domestic product, interest rate, private investment.

INTRODUCTION

The part that the interest rate should play in the economic policies of developing countries is still a hotly debated issue, from both a theoretical and an empirical point of view. Among the reasons for disagreement between the researchers is the fact that the government only controls, if at all, the rate of interest in the formal market. Many economists argue that this official rate does not matter, because it is the informal market that determines the relevant (marginal) rate of interest. Investment plays an incredibly significant and optimistic function for the development and success of every country. A lot of countries depends on investment policies to answer their economic problems such as poverty, unemployment etc. Useful investment within country is openly positive link to the GDP of that particular country. It is anticipated that interest rate is also play some role in investment decision and then GDP, so therefore in some developing countries economic policy maker advise to keep the interest rate low to promote private investment, Mehrara, Karsalari (2011). This study glances at the case of Pakistan, examining particular aspects of its private investment (PI), government investment (GI), Foreign direct Investment (FDI) and, labor force (LBF) relationship to GDP. For this study we are focusing on Pakistan's development economy from 1980 to 2010.

Since Pakistan is experiencing a very challenging investment environment not only for the foreign investor but also for domestic investor due to political instability and terrorism activities within the country. If we analyze the last three decades economic performance of the country and its link to the political instability and terrorism we can capture the effect of this on the economy of Pakistan. As we know that investment policy has a very important role in country economic development however if there is no political stability and risk for life then even with sound investment policy the economic development cannot be achieved efficiently. Furthermore, positive improvements regarding investment recover the economic performance and can cause for less imports than exports. On the other hand Pakistan is attractive place for investment due to some reasons like expanding infrastructure, cheap labor, rich natural resources, and climate.

Fatima, Ahmed, and Rehman (2011) explained that in 1999 IMF and World Bank planed reform agenda for Pakistan with efforts to maintain stable prices of the commodities and decreasing the balance of deficit balance of payment however prior to there was no positive change in private investment change and that cause for low GDP. Further they explained in their study that since lender interest rate in Pakistan is extremely high because of this a small number of investor typically invested and not many employment opportunities created to boost GDP of Pakistan

In this study we focus on some variable which are indirectly affecting GDP while some other variable used which are directly affecting GDP. Mostly used technique to test the relationship of GDP with Investment, FDI and, labor force are OLS techniques in this study we used the predictive value techniques of sub equations. That is why this study is unique in nature for example private investment is the function of openness to economy and some other factor and GDP is the function of private investment which make sense to test the relationship in same logic and that is implemented in this paper. As in this study the three decades data will be used so to check change among three decades, dummy variable is used to explain each decade individually. **Bukhari, Ali, Saddaqt** (2007) found that in pair-wise analysis results there is bidirectional causality between government investment and economic growth. Further they explain that effect of crowding out discourage the

private investor.

RESEARCH QUESTIONS:

1. Is there any relationship between interest rate, government and private investments and Pakistan economy?
2. Whether they are no relationship between interest rate, Government and private investments and Pakistan economy?

RESERCH OBJECTIVES:

1. Investigate the relationship between the investment (public and private investment), interest rate and, economy of Pakistan.
2. Examine aspects which effects public and private investment and interest rate.
3. To initiate a step toward identifying increasing/decreasing interest rates trends in Pakistan and increasing/decreasing investments (public and private investment), factors contributing toward development of economy.

Significance of the study:

This research found the relationship of private investment, private investment, foreign direct investment, government expenditure with GDP with the help of simultaneous equation technique (SEM) where more than one main equation the check the relationship between dependent and explanatory variable are used which shows more less bias result then only single equation model. And additionally this study captured the effect of the each decade performance with the help of dummy variable for three decades. So this study is really helpful for economic policy of the country and as base for future research in this particular area.

In coming section of the study includes of relevant literature review, Theoretical framework is just after the literature reviews followed by methodology. Data is analyzed after this and in last section about the conclusion and future recommendation.

Literature review

In theory both kinds of investments (Private and government) are certainly linked to the GDP but empirically it depends on the competence and efficiency of investment. Raise in the real interest rate increases the cost of borrowing and thus discourages new investment and growth of GDP, Ajaz & Ellahi, (2008). On the other hand Mehrara, Karsalari (2011) findings supports the above argument that interest rate have positive effect only in beginning on investment and negative effect on investment in long run. Ucan, Ozturk (2011) found that there is positive relationship between the investments with GDP.

Munir, Awan & Hussain (2008) found that private investment is increased by saving, interest rate on deposits further they argued that financial liberalization increased interest rates and investment which lead to decision that reinvestment in bank deposits is more profitable than investing in low productive sector. Due to this the supply of credit is available for more productive sector and in result GDP will increase.

Theory also tells us that due to Foreign direct investment (FDI) more employment opportunities and unemployment ratio reduce and it effect positively on GDP. Theory further tells us that Government investments or development programs also positively contribute to the GDP. Ray, Siddheswari (2012) argued that FDI is not the only solution for all economic problem however it has fabulous potential for economic development because it increases the productivity and employment opportunities. Ahmad Ghazali (2010) found in their study that there is high level of positive correlation FDI, domestic investment with economic growth in long term their result also tells us that there is positive effect on GDP of Pakistan with FDI inflow. Further they argued that FDI inflows also positively related level of competitiveness, decrease unemployment, technological change, improvement in local labor force skills and overall environment. However Ozturk, Kalyoncu, Huseyin (2007) found that GDP effect FDI in case of Pakistan and in opposite direction for Turkey. Asghar, Nasreen, Rehman (2011) also found positive relation between economic growth and FDI in case of Pakistan and bi-directional trend in case of Malaysia.

Until the 1970s interest rate policy was primarily guided by the Keynesian view that interest rates should be kept low in order to promote investment. According to this analysis, the relationship between savings and interest rates could be ambiguous, in light of the opposing influences of the income and substitution effects. Low interest rates would promote investment spending and economic growth in developed and developing countries alike, in accordance with the Keynesian and neoclassical theories.

But in 1973, McKinnon & Shaw (1973) argued that there is the positive relationship between interest rate bank deposits and private investment. Financial and other liberalization policies were under taken by many developing countries including Pakistan to achieve and promote higher level of growth. The costs of restrictive policies were huge and reflected in the form of low financial savings, investment and economic growth. (Khan & Qayyum, 2006).

John Maynard Keynes's most influential work, the General Theory of Employment, Interest, and Money,

was published in 1936. He argues that there is a negative relationship between Interest rate and private investment. As the interest rate increases, the cost of capital for credit also increases so the creditor will not prefer credit from banking due to high cost. The policy of deregulation of the interest rate promotes the savings and investment and attains the efficient allocation of financial resources (Shrestha & Chowdhury, 2007). Wali ur Rehman (2011) one of the reasons behind slow economic growth is interest rate ceiling, requirement of high reserves and restrictions in the credit allocation. Financial reforms (1990) have a significant impact on the banking sector and economic growth. But after the financial reforms the Results showed positive relationship between economic growth with deposits, lending and savings, and negative relationship with inflation and interest rate. T. M. Obamuyi (2006) The results imply that the behavior of interest rate is important for economic growth in view of the relationships between interest rates and investment and investment and growth. The financial system operated under financial regulation and interest rates were said to be repressed. However, the deregulation of interest rates may not optimally achieve its goals, if those other factors which negatively effects investment in the country, as suggested by Guseh and Oritsejafor (2007), are not tackled. This implies that the link between interest rate, investment and economic growth is not automatic. The important condition for promoting economic growth, therefore, is for the government to formulate and implement financial policies that enhance investment-friendly rate of interest and take into consideration those other factors which negatively affect investment in the country.

McKinnon and Shaw 1973 argues that there is a positive relationship between Interest rate and private investment he argues that higher interest rate tend to encourage saving while saving determines investments. (They consider the inflation rate and took real interest rate so if the inflation will not include in the interest rate then it is very low in percentage due to which the bank deposits will be low and investment will also be low).

Deposits are the sum of money that the people lend to banks for the purpose of earning interest. Banks are totally depending on deposits, almost whole banking function is with deposits, without deposits banks will not able to lend or invest anywhere. Current deposits, call deposits, saving deposits, fixed deposits are different kinds of deposits. The amount bank gives as loan and releasing in other forms to its clients is called lending. McKinnon and Shaw (1973) that high rate of interest stimulated investment through self financed savings. The growth of any economy depends on capital accumulation, and this requires investment with matching savings (Thirlwall, 2004).

Pradeep Agrawal (2006) examine whether higher real interest rates on bank deposits are associated with higher investment rates. He found that the higher interest rates caused a greater availability of bank credit, which in turn, caused a higher investment rate. The availability of formal sector credit as a fraction of GDP is another important determinant of the investment rate in developing countries [see Blinder and Stiglitz, 1983; Fry, 1995.] The real GDP growth rate (G) over the previous year is an important determinant of investment since higher growth would imply higher capital requirement and hence higher investment rate. Furthermore, the growth rate is also a good proxy for the quality of institutions and policies being pursued in an economy at a given time.

Chien-Hsun Chen (2005) they aim to shed light of the casual relationship between interest rate, saving and income. There exist stable long run relationship between interest rate, savings and income in the economy. Muhammad Arshad Khan, Abdul Qayyum, and Saeed Ahmed Sheikh (2005) . The results show that, in the long run financial depth and real interest exerted positive impact on economic growth. While the share of investment is although positively correlated to real income. Moreover, changes in real interest rate exerted impact on growth. They also argued that low-cost investment is created, long run growth is impossible. Demetriades and Hussein (1996) find the evidence that finance is a leading factor in the process of economic growth. Dr. W. M. Hemachandra (2010) investigates that policies relating to the financial sector should be persuade on a continuous basis rather than responses to short term developments in the monetary sector. It is not only the interest rates that effect the financial deepening but also the other factors that affect financial deepening such as Govt. activities, external factors, bank branch operations and communication problems.

According to McKinnon (1973) & Shaw (1973), financial repression arises mostly when a country imposes ceiling on deposit and lending nominal interest rates at a low level relative to inflation. The resulting low or negative interest rates discourage saving mobilization and channeling of the mobilized savings through the financial system. This has a negative impact on the quantity of investment and hence economic growth. Interest rate is an important determinant of economic growth. W. Jos Jansen and Gunther G. Schulze in the long run there is positive correlation of saving and Investment Ben S. Bernanke and Vincent (Interest Rate Should be low for the development and growth before undertaking the alternative policies).

Hypothesis 1: Interest rate, government and private investments have positive relation with Pakistan economy.

Hypothesis 2: Interest rate, government and private investments negative relation with Pakistan economy.

Methodology

Data gathered from 1991 to 2010. There are total eleven independent variables used in four equations. Data gathered from different sources like State Bank of Pakistan, World Economic Indicator, World Bank, Economic Survey of Pakistan. As per theory and introduction section we can conclude that GDP is expected to depend on

many variables. These variables include foreign direct investment, private investment (PI), government (GI), investment, government expenditure and, labor force. In first try main econometric model is used for the above mentioned variable however there are some other variables which do affect PI, GI, and, FDI. Research is based on structural equation modeling. Before estimating the main equation three further equations were developed and estimated. Because of the assumption of classical regression model first stationarity test (unit root test) apply both for dependent and independent variables. The unit root test is evaluated using the Augmented Dickey-Fuller Test .Data is stationery at 2ndt difference. The problem of autocorrelation so remove the autocorrelation use Breusch-Godfrey Serial Correlation LM Test.

Econometric model

As per conceptual model following econometric model is made;

$$GDP = f(\hat{P}\hat{I}, \hat{G}\hat{E}, \hat{F}\hat{D}\hat{I}, LF).....1$$

$$FDI = f(OE, C\&P)2$$

$$GE = f(GR, FB, DB).....3$$

$$PI = f(R, OE, C\&P).....$$

Results:

Table 1

Dependent Variable: GDP

Method: Least Squares

Sample (adjusted): 1 31

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-19.63684	6.171174	-3.182027	0.0038
PI	0.417656	0.081052	5.152907	0.0000
GE	0.295017	0.068345	4.316554	0.0002
LF	1.451697	0.401151	3.618833	0.0013
FDI	-0.057026	0.018413	-3.097126	0.0046

Interpretations of result

R-squared 0.9982 and R adjusted square0.9980 value is high due dependent time series data however the Durbin-Watson value is 1.12 which mean autocorrelation within data. Used the Breusch-Godfrey Serial Correlation LM Test: to remove the autocorrelation and Durbin-waston value is1.92. F-value 3763(P-value0.0000) is highly significant. Coefficient result shows that a explanatory variables are positively correlated to the GDP but FDI is negatively correlated but significant. So our research question is partially answered that there is positively relationship among GDP, PI, and GEX.

Table 2

Dependent Variable: FDI

Method: Least Squares

Sample (adjusted): 1 31

Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-20.05150	3.431221	-5.843837	0.0000
OE	2.675463	0.510255	5.243385	0.0000
CNP	-1.320183	0.425055	-3.105908	0.0043

Interpretations of result

R-squared 0.744 and R adjusted square 0.726 values is high due dependent time series data however the Durbin-Watson value is 0.971 which mean autocorrelation within data. Used the Breusch-Godfrey Serial Correlation LM Test: test to remove the autocorrelation and Durbin-waston value is2.13F-value 40 (P-value0.0000) highly significant is show the model is fit. Coefficient result shows that OE explanatory variables are positively correlated to the FDI but C&P is negatively correlated but significant.

Table 3

Dependent Variable: GEX
 Method: Least Squares
 Sample (adjusted): 1 31
 Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.108402	0.661275	0.163929	0.8710
GRE	0.774283	0.066815	11.58843	0.0000
FRD	0.296468	0.140496	2.110147	0.0443
DOD	0.006717	0.073309	0.091630	0.9277

Interpretations of result

The equation 3 the table R-squared 0.9983 and R adjusted square 0.9981 values is high due dependent time series data however the Durbin-Watson value is 2.08 which mean no autocorrelation within data. F-value 544 (P-value 0.0000) highly significant is show the model is fit. Coefficient result shows that GRE, FRD explanatory variables are positively correlated to the GEX. But DOD is insignificant.

Table 4

Dependent Variable: PI
 Method: Least Squares

Sample (adjusted): 1 31
 Included observations: 31 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-23.83774	1.733717	-13.74950	0.0000
ITR	0.498758	0.149422	3.337903	0.0025
OE	1.319489	0.118272	11.15638	0.0000
CTR	6.345633	0.734791	8.635966	0.0000

R-squared 0.985 and R adjusted square 0.984 values is high due dependent time series data however the Durbin-Watson value is 0.96 which mean autocorrelation within data. F-value 629 (P-value 0.0000) highly significant is show the model is fit. Coefficient result shows that ITR, OE, and CTR explanatory variables are positively correlated to the PI .All the variable is significant.

Discussion

As theory says that there is positive relationship between private investment interest rate and GDP our result support this theory and accept the hypothesis H1. As Meckinon Shaw has discussed in 1974. The results show that there exist a unique long-run relationship between interest rates and economic growth. Thus, interest rate is an important determinant of economic growth. It shows that investment in private sector should be promoted within the country. This study will investigate that what is the impact of the interest rates on the bank deposits and private investments. Low interest would promote investment and economic growth in the country. Economic Policy makers in developing countries frequently adopted policies of low interest rate as a way of promoting economic growth. Until the 1970s interest rate policy was primarily guided by the Keynesian view that interest rates should be kept low in order to promote investment. According to this analysis, the relationship between savings and interest rates could be ambiguous, in light of the opposing influences of the income and substitution effects. Low interest rates would promote investment spending and economic growth in developed and developing countries alike, in accordance with the Keynesian and neoclassical theories.

Limitations/ direction for future research .In this paper, we studied the impact of interest rate, private investment on GDP. However, for the future study concern, the political and environment (events) should also consider and its impact on GDP.

Recommendation

The study makes the following recommendations:

1. The government should establish through the National Economic Planning Commission sustainable monetary policy that enhances money supply that encourage private investment.
2. To uphold and emphasize the significant role of GDP and others monetary policy in the growth of

private investment.

3. That GDP and others measures of monetary have always cause significant increase in the growth of private investment to economic growth.

References

- Fatima, G., Ahmed, A. M., & Rehman, W. U. Fiscal Deficit and Economic Growth: An Analysis of Pakistan's Economy.
- Munir, R., Awan, R. U., & Hussain, Z. (2010). Investment, Savings, Interest Rate and Bank Credit to the Private Sector Nexus in Pakistan. *International Journal of Marketing Studies*, 2(1), P140.
- UÇAN, O., & ÖZTÜRK, Ö. (2011). Financial Determinants of Investment for Turkey. *Journal of Economic and Social Studies*, 1(1), 83-110.
- RAY, D. S. (2012). Impact of Foreign Direct Investment on Economic Growth in India: A Co integration Analysis. *Advances in Information Technology and Management*, 2(1), 187-201.
- Ghazali, A. (2010). Analyzing the Relationship between Foreign Direct Investment Domestic Investment and Economic Growth for Pakistan. *International Research Journal of Finance and Economics*, 47, 123-131.
- Ozturk, I., & Kalyoncu, H. (2007). Foreign direct investment and growth: An empiricial investigation based on cross-country comparison.
- Asghar, N., Nasreen, S., & ur Rehman, H. (2012). Relationship between FDI and economic growth in selected Asian countries: A panel data analysis. *Review of Economics and Finance*, (1), 84-96.
- Bukhari, S. A. H. A. S., Ali, L., & Saddaqt, M. (2007). Public Investment and Economic Growth in the Three Little Dragons: Evidence from Heterogeneous Dynamic Panel Data. *International Journal of Business and Information*, 2(1), 57-79.
- Chen, C. H. (2002). Interest rates, savings and income in the Chinese economy. *Journal of Economic Studies*, 29(1), 59-74.
- Khan, M. A., Qayyum, A., Sheikh, S. A., & Siddique, O. (2005). Financial Development and Economic Growth: The Case of Pakistan [with Comments]. *The Pakistan Development Review*, 819-837.
- Khan, M. S., & Semlali, A. S. (2000). *Financial development and economic growth: An overview* (No. 2000-2209). International Monetary Fund.
- Fatima, G., Namazi, M., Forougozar, H., Namazi, N. R., Ting, C. J., Arjchariyaartong, W., ... & ur Rehman, W. (2011). Testing Relationship of Private Investment and GDP with Fiscal Deficit. In *International Conference on Financial Management and Economics. IPEDR* (Vol. 11, pp. 367-372).
- Gamal, A. A. M., & MALAYSIA, U. U. (2012). *Estimating the Volume of the Hidden Economy in Yemen, 1995-2009: Evidence from ARDL Approach of Cointegration* (Doctoral dissertation, Universiti Utara Malaysia).
- Obamuyi, T. M. (2009). An investigation of the relationship between interest rates and economic growth in Nigeria, 1970-2006. *Journal of Economics and International Finance*, 1(4), 093-098.