Information and Knowledge Management
ISSN 2224-5758 (Paper) ISSN 2224-896X (Online)
Vol.4, No.7, 2014

The Impact of Interest Rates on Government and Private Investments in Pakistan Economy: An Analysis of Three Decades

Syed Usman Qadri
Mohammad Ali Jinnah University, Islamabad, Pakistan
usmangillani79@gmail.com

Syed Ibn_Ul_Hassan
Government College University, Faisalabad, Pakistan
ibnulhassan_bukhari@yahoo.com

Muzammal Ilyas Sindhu
Mohammad Ali Jinnah University, Islamabad, Pakistan
muzammal496@gmail.com

Abstract
One of the primary plans of economic policies is to increase investment that is important for better economic performance. This study is conducted to test the effect of private investment, government investment, government expenditure, labor force and, foreign direct investment on the GDP of Pakistan. Further to test the economic performance over the last three decades with the help of dummy variable. Over all 30 years data is used for the study. Result found that there is positive relationship private investment, FDI and, government expenditure. And decade performance negatively correlated to the each previous decade.
Keywords: Interest rate, Government and private Investments, Pakistan Economy

Introduction

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 from1980 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 cointegration 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, Saddaqat (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. This research study is cooperative for other researchers to conduct same sort of methodology for cross country effect.

Research questions

1. Is there any relationship between interest rate, government and private investments and Pakistan economy?
2. Whether the relationship between interest rate, Government and private investments and Pakistan economy has changed over time/during last three decades?

Research 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.
4. To inspect the short and long run relationship between interest rates, Investments (public and private investment) and GDP.

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 direction.

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.

Hypothesis

On the basis of above literature we can develop the following hypothesis;

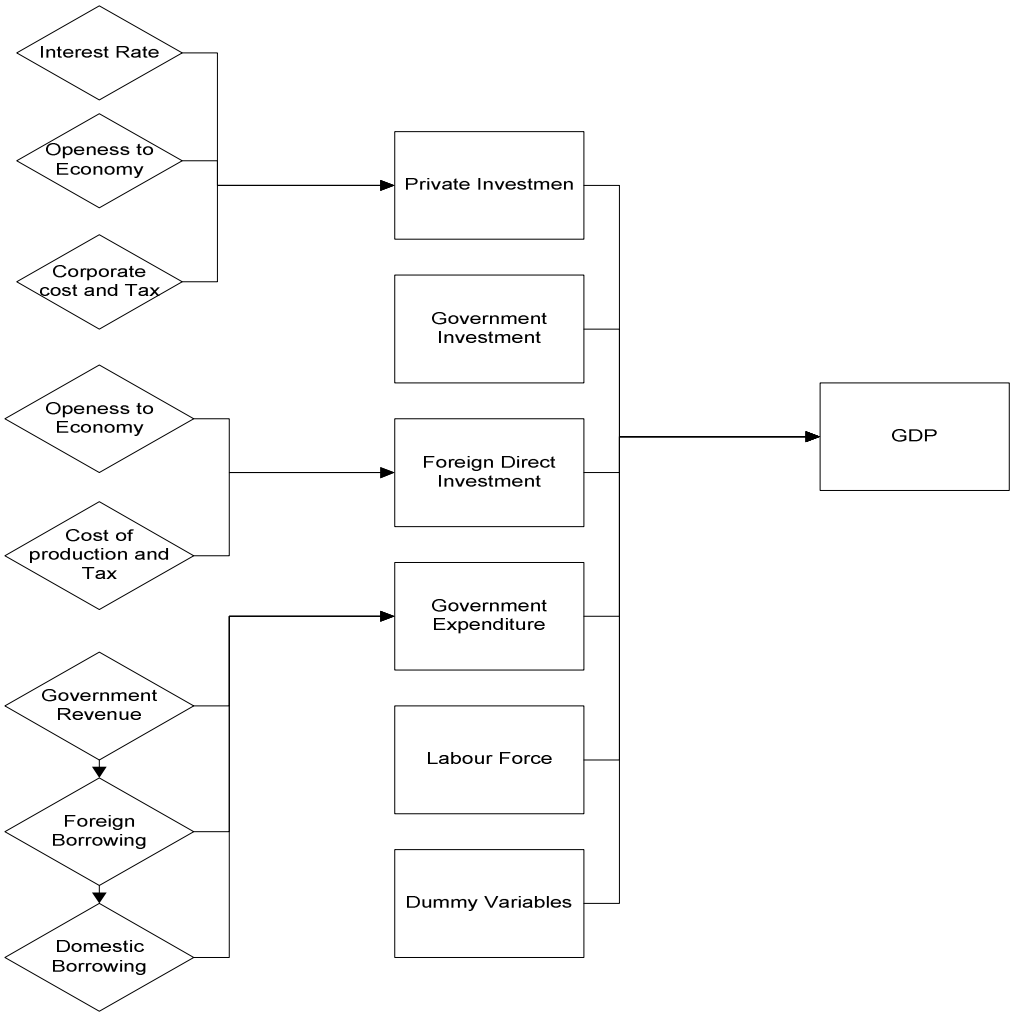
Hypothesis 1: Interest rate, government and private investments have positive relation with Pakistan economy.

Hypothesis 2: Relationship between interest rate, Government and private investments and Pakistan economy has changed over time/during last three decades.

Methodology and Data Description

GDP is the dependent variable of our study and all the explanatory variables (Appendix table I), consisting from 1980 to 2010 and converted in to natural logs, were found less diverse in terms of standard deviation (SD) and coefficient of variation (COV) comparative to the data in levels; therefore data with natural log was used. The coefficient variation in natural log clearly shows that variation of the standard deviation from its mean is now much lesser and therefore this is ideal sort of form for time series data than with high coefficient of variation data. Data for our study is collected from State Bank of Pakistan, World Economic Indicator, IFS software, 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. That's why the relation of these variables with GDP will be explained by finding their predicted values. These predicated values equation explained in coming conceptual model. Two Dummy variables also used to test and compare among the three decades performance of the country.

Conceptual Model



Econometric model

As per conceptual model following econometric model is made;

GDP = f (PÎ, GÊ, FDÎ, LF)…… 1

PI = f(R, OE, C&P)…… 2

GE = f (GR, FB, DB)…… 3

FDI = f (OE, C&P) …… 4

Natural log is take for all the variables and Lag variable used for GDP and FDI because theory says that period closing information can not affect period beginning information.

Results:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
Dimension	0.999	0.998	0.997	0.064	2.033

ANOVA

Model		Sum of Squares	D.f	Mean Square	F	Sig.
1	Regression	40.324	6	6.721	1642.6	0.000
	Residual	0.094	23	0.004		
	Total	40.418	29			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.444	0.843		5.269	0.000
	PI	0.296	0.106	0.351	2.783	0.011
	LFDI	0.125	0.063	0.196	1.990	0.059
	GEX	0.570	0.094	0.499	6.045	0.000
	GI	-0.178	0.112	-0.138	-1.584	0.127
	D1	-0.282	0.092	-0.112	-3.065	0.005
	D2	-0.190	0.061	-0.077	-3.098	0.005

a. Predictors: (Constant), D2, GI, D1, LFDI, GEX, PI
b. Dependent Variable: LGDP

Interpretations of results

R and R square value is high due dependent time series data however the Durbin-Watson value is almost 2 which mean no autocorrelation within data. F-value is 1642.572 with highly significant p-value. Coefficient result shows that all explanatory variables are positively correlated to the GDP but GI is negatively correlated. So our research question is partially answered that there is positively relationship among GDP, PI, FDI, and Government expenditure but GI investment has not positive relationship to the GDP. The P-value for GI is also no significant which 0.127 greater than 10% is. D1 = 1980 to 1990 and D2 = 1990 to 2000 which are negatively correlated to D3 = 2000 to 2010 decade. Value for D1 is -.282 (P<.01) and value for D2 is -.190 (P<.01). P-value for almost all independent variables significant at P<.01, however for LFDI it is significant P<.1 because LFDI P-value is almost .06. Labor force p-value were not significant that's why remove from the initial model in final results.

Conclusion

As theory says that there is positive relationship between private investment and GDP our result support this theory. It shows that investment in private sector should be promoted within the country.

On the other hand as with the government investment the crowding out effect exist according to the theory our finding also support this. Because our GI is negatively correlated to the GDP that may be due to the theoretical argument that when government get in for taking loan the interest rate become high and very few investor in private investor only invest so the private investment sector is discourage and it might be one reason to lower GDP due to minimum or no investment in private sector.

As theory suggest that FDI promotes employment opportunities and lead to increase GDP our result also accordance to the theory in case of FDI. As for as government expenditure concern that is also positively correlated to the GDP both in theory and results so government should not stop expenditure for the sake of development.

As for as the 3 decades concern we can clearly see the poor performance in each next decade until the recent decade. This shows extremely poor performance of the economy. Governments have to promote the private investment, FDI, openness to economy, spend more in the welfare of the society to get better economic performance.

References

Mohsen Mehrara, Abbas Rezazadeh karsalari (2011). The Nonlinear Relationship between Private Investment and Real Interest Rates Based on Dynamic Threshold Panel: The Case of Developing Countries. *Journal of Money, Investment and Banking ISSN 1450-288X Issue 21.*

Goher Fatima, Ather Maqsood Ahmed, and Wali Ur Rehman (2011). Fiscal Deficit and Economic Growth: An Analysis of Pakistan's Economy. *International Journal of Trade, Economics and Finance, Vol. 2, No. 6.*
Rahila Munir, Rehmat Ullah Awan & Zakir Hussain (2008). Investment, Savings, Interest Rate and Bank Credit to the Private Sector Nexus in Pakistan. *International Journal of Marketing Studies. www.ccsenet.org/ijms*
Okay Ucan, Ozlem Ozturk (2011). Financial Determinants of Investment for Turkey. *Journal of Economic and Social Studies, Volume 1 Number 1.*
Sarbapriya Ray, Shyampur Siddheswari (2012). Impact of Foreign Direct Investment on Economic Growth in India: A Co integration Analysis. *Advances in Information Technology and Management (AITM), Vol. 2, No. 1, 2012, ISSN 2167-6372.*
Ahmad Ghazali (2010). Analyzing the Relationship between Foreign Direct Investment Domestic Investment and Economic Growth for Pakistan. *International Research Journal of Finance and Economics, Issue 47.*
Ozturk, Ilhan and Kalyoncu, Huseyin (2007). Foreign Direct Investment and Growth: An Empirical Investigation Based on Cross-Country Comparison. Online at http://mpra.ub.uni-muenchen.de/9636/ *MPRA Paper No. 9636, posted 19. July 2008 / 18:19*
Nabila Asghar, Samia Nasreen, Dr. Hafeez Ur Rehman (2011). Relationship between FDI and Economic Growth in Selected Asian Countries: A Panel Data Analysis. *Review of Economics & Finance. Article ID: 1923-7529-2012-01-84-13*
Syed Adnan Haider Ali Shah Bukhari, Liaqat Ali, Mahpara Saddaqat (2007). Public Investment and Economic Growth in the Three Little Dragons*: Evidence from Heterogeneous Dynamic Panel Data. Volume 2,* Numberhttp://www.knowledgetaiwan.org/ojs/index.php/ijbi/article/viewFile/86/23
Hotz, V., Kydland, F., Sedlacek, G., 1988. Inter temporal preferences and labor supply. *Econometrica 56, 335} 360.*

APPENDICES

Appendix I

Coefficients of variation (level versus natural-log data)		
Names	Coefficient of Variation (CV)	
of Variables	Level data	Natural-log-data
PI	1.2601	0.12
GI	0.927	0.0804
GD	0.4977	0.0559
GRE	1.0905	0.0943
GEX	0.9937	0.0835
CTR	0.0992	0.0286
ITR	0.2539	0.0996
FDI	1.6993	0.2086
DOD	0.9845	0.0952
FRD	0.4564	0.0504
IMP	0.6257	0.0751
EXP	0.7695	0.0674
MNS	1.1043	0.0949
BDP	1.1058	0.0969
LBF	0.2418	0.0136
TROP	0.7051	0.0644
CNP	0.7177	0.1963

Appendix II

Serial No.	Variables	At Level		At 1st Difference	
		ADF test statistic	p-value	ADF test statistic	p-value
1	FDI	-0.95239	0.7569	-5.71072	0.0001
2	BDP	-1.01804	0.7338	-4.30208	0.0021
3	CNP	0.260777	0.972	-4.383461	0.0017
4	CTR	-0.473561	0.8831	-4.086946	0.0037
5	DOD	-3.618701	0.0116	-4.335075	0.002
6	CEXP	0.439517	0.9814	-4.178815	0.0029
7	FRD	-0.30371	0.913	-4.621038	0.0009
8	GD	-1.715762	0.4134	-4.187696	0.0029
9	GEX	-0.253478	0.9206	-6.557399	0
10	GI	-0.053639	0.9458	-4.263209	0.0024
11	GRE	-0.49758	0.8783	-5.1316	0.0003
12	IMP	-0.50494	0.8768	-6.10562	0
13	ITR	-3.56038	0.0142	-3.25186	0.027
14	LBF	2.424964	0.9999	-5.88668	0
15	MNS	-0.74544	0.8199	-4.11561	0.0034
16	PI	-1.11877	0.6951	-7.29357	0
17	TROP	0.284951	0.9735	-4.54414	0.0012
18	OE	0.284951	0.9735	-4.54414	0.0012

Appendix III

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	D.f	Sig.	Statistic	D.f	Sig.
GDP	0.086	31	.200*	0.96	31	0.298
BDP	0.087	31	.200*	0.956	31	0.222
CNP	0.114	31	.200*	0.948	31	0.138
CTR	0.236	31	0	0.798	31	0
DOD	0.119	31	.200*	0.949	31	0.147
FDI	0.062	31	.200*	0.969	31	0.496
FRD	0.139	31	0.134	0.926	31	0.035
GD	0.22	31	0.001	0.902	31	0.008
GEX	0.088	31	.200*	0.969	31	0.499
GI	0.08	31	.200*	0.96	31	0.288
GRE	0.081	31	.200*	0.971	31	0.55
ITR	0.251	31	0	0.925	31	0.032
IBF	0.088	31	.200*	0.952	31	0.178
MNS	0.099	31	.200*	0.95	31	0.156
OE	0.139	31	0.135	0.926	31	0.033
PI	0.084	31	.200*	0.955	31	0.214
TROP	0.139	31	0.135	0.926	31	0.033
PIC	0.126	31	.200*	0.932	31	0.05
GEC	0.09	31	.200*	0.968	31	0.466
FDIC	0.113	31	.200*	0.948	31	0.135
BDPC	0.101	31	.200*	0.948	31	0.133
GIC	0.147	31	0.087	0.904	31	0.009

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar