Why Private Investment in Pakistan Has Collapsed and How Can it be Restored

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ABSTRACT:

The purpose of this paper is to analyze the decline in private investment and searched out a comprehensive strategy to overcome this problem, which is the main cause of deceleration in the growth momentum of the economy. Due to the lack of investor confidence, private investment has become lowest in the recent history of private sector led growth phase (1978 to 2002). The paper argues that the economic factors such as depressed demand reflected by lower private consumption, increasing cost of production due to increasing prices of imported raw material especially of plant and machinery because of massive devaluation and higher real interest rates due to public borrowings are responsible for such a low level of private investment in the economy. These economic factors explain the decline in private investment during the 1990s. But non-economic factors that includes sanctions after the nuclear blasts, harassment of partially successful accountability drive, threats of globalization, rigid behavior of taxation authorities and vanishing exceptions and incentives for the investors were remain dominant in the 2000-02. External shocks such as September 11 incidence, deployment of Indian forces in December and current poor law and order situation have also resulted in lower private investment during the last fiscal year. The decline in public investment in infrastructure activities resulted in decline in private investment because of its crowding in nature. Large fiscal deficits results in financial crowding out and eat up the savings that finance private investment. A big push strategy required for the restoration of investor confidence that was missing in the fiscal policy of last few years. An economic package is proposed in the paper that consists of incentives that relax the supply side constraints by reducing cost of production and demand-enhancing efforts. It is the best time to introduce a strategy for increasing investment activities in the economy because higher level of foreign exchange reserves are the main tool for attaining higher growth in real sector. Reduction in the cost of imported raw material, bringing down the real interest rates in the economy, higher expenditures on infrastructural development activities and availability of conditional subsidized credit for the export oriented small scale industries for the

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improvement of quality of production can contribute much in accelerating economic activities in the economy by restoring investor confidence.

I   INTRODUCTION

Main objective of this paper is to analyze the slowdown in private investment that has caused loss in growth momentum of the economy during the decade of 1990s. Overall economic growth was above 6% during the decade of 1980s, fell to mere 4% in the 1990s and further decelerated to 3.8% in the last three fiscal years (1999-00 to 2001-02). This secular decline in the rate of economic activity can be attributed to the fall in total investment to a level much below the requirements of the economy. Total investment that was 17.8 % of GDP during the decade of 1980s fell to 17.1% in the first half of the 1990s and further declined to 13.5% in the second half. The decline in total investment is due to fall in private as well as public investment. Private investment that grew at an average rate of 6.8% in the 1980s declined to 3.8% in the 1990s and further its growth reduced to 2.1% in the 2000-02. During the decade of 1980s, average growth of public investment was 4.6% that decreased to 0.5% in the 1990s and reduced to −0.5% in 2000-02. There are now considerable evidences to show that investment is one of the most important determinants of long run rate of growth. Poor economic performance is mainly due to the loss of investor confidence that resulted in slow down in private investment. Determinants of private investment and its linkages with public investment will be helpful in constructing an economic package comprises of incentives to promote private investment and boost economic growth.

The investment-GDP ratio in Pakistan with the neighboring countries is also very low. For example, gross domestic investment to GDP ratio (1999-02) of India is 9 % higher than in Pakistan and in Bangladesh it is 7.5% higher.

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Different studies have tried to explore the determinants of private investment in Pakistan. Ahmed (2001) shows that net investment is determined by output, cost of capital, public sector development plan. He concluded that cost of capital and PSDP are significant determinant of private investment in Pakistan.

Khalid sakr (1994) has explored the determinants of private investment in Pakistan and concluded that GDP growth, growth in credit extended to private sector and government investment are important variables. Further he disaggregated the government investment in two categories one is investment in infrastructure and other in non-infrastructure investment. The latter has negative impact while the former has positive impact on private investment.

The main draw back with these studies is that they examine the aggregate private investment which take in to account the net impact and assumed that private investment in each sector of the economy are perfectly substitutable. In the present study we decompose private investment into three sectors – Agriculture, manufacturing and services made are early attempt find determinants of private investment in sector. The paper is organized as follows.

Section II reviews the growth performance of the economy and highlights the role of private investment in bringing down the growth rate. Section III & IV focuses on the causes of slow down in private investment and its linkages with public investment respectively. In section V an economic package for the revival of growth of the economy by enhancing private investment in Pakistan is presented. Section VI brings together all the policy implications and conclusions emerging from the analysis.

II   OVERVIEW OF MACROECONOMIC PERFORMANCE

An overview of the economic performance during 1990s demonstrates a declining trend in the growth momentum of the economy. Gross domestic product (real) that grew at an average annual rate of above 6 percent during the decade of 1980s fell to below 5 percent in the first half of the decade of 1990s and further reduced to 3.2 percent in the second half of the 1990s. However, GDP grew at an average of 3.8 percent during the last three years (1999-00 to 2001-02). Apolitical government took the office in the October 1999 along with the motivation of revival of the economy by restoring the investor's confidence. This spirit is reflected by the theme of creating investment friendly environment in the last three consecutive budgets presented by current military government. However, the slight improvement in economic growth cannot be attributed to better performance of commodity producing sectors but only due to the outlier growth in the sector of public administration and defense in FY 2001/02. Commodity producing sectors performance followed the same declining trend. These sectors were growing at an average rate of 6.5 percent during 1980s that fell to 4.6 percent in the decade of 1990s and further decelerated to 1.8 percent in the last three years. Thus it is evident that economic performance of the Pakistan is on the declining path, and there is acute need to study the causes of poor economic situation that is turning to be alarming not only to the policy makers, economic managers but also to the general masses of the country.

An analysis of demand side components of GDP demonstrates that public and private consumption have steady declining trends. Public consumption decline massively during 1990s but private consumption has consistent growth in this era, but this trend reversed in the last three years (2000-02) as public consumption grew at higher rate and private consumption followed a declining path. Reduction in the consumption level demonstrates

the decline in the demand. Lower growth in disposable income due to declining subsidies and increasing indirect taxes caused reduction in the private consumption. Austerity drive on the fiscal side resulted in lower public sector consumption. On the external side, exports showed slow down in the 1990s but improved a lot in the 2000-02. While imports demonstrate a declining trend. Thus all the demand side contributors are responsible for lower growth but the role of investment is crucial and required a detailed analysis.

TABLE 1
REAL SECTOR PERFORMANCE

	1981-90	1991-95	1996-00	2000-02
Real GDP	6.2%	4.8%	3.1%	3.8%
Real Private Consumption	*4.5%*	*4.9%*	*4.1%*	*2.0%*
Real Public Consumption	*10.3%*	*0.9%*	*1.2%*	*6.8%*
Real Private Investment	6.8%	4.5%	3.0%	2.1%
Real Public Investment	4.6%	4.0%	-2.9%	-0.5%
Real Exports	*8.4%*	*9.7%*	*0.6%*	*11.1%*
Real Imports	*2.1%*	*6.3%*	*-0.7%*	*0.2%*

Source: Pakistan Economic Survey (various issues)

Public investment attain an average growth of 4.6 percent during 1980s declined to 0.5 percent in the 1990s and further dropped to –0.5 percent in the last three years (1999-00 to 2001-02). In similar manner, private investment that grew at an average rate of 6.8 percent during 1980s, fell to 3.8 percent in the 1990s and more recently from 1999-00 to 2001-02, it was growing at an average rate of 2.1 percent. The rate of investment thus turns out to be one of the most important determinants of the rate of growth of an economy. The slowdown of the rate of economic activity in Pakistan can thus be attributed to a fall in the investment. The analysis of causes of decelerating growth performance of the Pakistan economy thus calls for a detailed sectoral (i.e., agriculture, industry etc.) as well as functional (i.e., private, public) analysis of Pakistan's investment expenditure. The breakdown of total investment into sectoral and functional contributions by each sector will help identify the sources of a sluggish rate of investment and would probably guide policy makers in formulating a better investment policy in the future.

TABLE 2
INVESTMENT BEHAVIOR OF PAKISTAN ECONOMY

(Percent of GDP)

	Decade Of 80's	First Half Of 90's	Second Half Of 90's	2000-01	2001-02
Total Investment	17.7	17.1	14.9	13.5	12.7
	[5.6]	[4.3]	[-1.1]	[2.9]	[-1.6]
Private Investment	8.0	8.3	8.6	7.5	7.4
	[6.8]	[4.7]	[2.6]	[-1.7]	[3.8]
Public Investment	9.7	8.7	6.6	6.1	5.3
	[4.6]	[4.0]	[-2.9]	[3.1]	[-9.3]

Source: Pakistan Economic Survey (various issues)
Figures in parenthesis are growth rates

III   DETERMINANTS OF PRIVATE INVESTMENT

Above discussion has highlighted the lack of real sector growth is due to reduction in private investment that grew at a very low rate during the last decade. Thus an examination of the role of different factor in influencing the level of private investment is necessary. We first specify a number of factors in influencing private investment in agriculture, manufacturing and services sectors. Interest rate, relative prices of imported machinery and value added in each sector are identified as the main determinants of private investment.

Interest rate emerges as significant throughout while infrastructure variables appears to be important in the case of agriculture. Value added has significant in the services sector only and exports of goods have significant impact in manufacturing sector. Relative prices of imported machinery have significant impact in manufacturing and services sectors.

TABLE 3
COMPOSITION OF PRIVATE INVESTMENT IN PAKISTAN

(Percent of GDP)

	Decade Of 80's	First Half Of 90's	Second Half Of 90's	2000-01	2001- 02
Private Investment	8.0	8.3	8.6	7.5	7.4
	[6.8]	[4.7]	[2.6]	[-1.7]	[3.8]
• Agriculture	1.7	1.3	0.9	0.9	0.8
	[5.8]	[-1.2]	[0.5]	[-6.4]	[-15.2]
• Industry	2.1	2.8	1.9	1.7	1.6
	[11.3]	[3.7]	[0.5]	[2.1]	[-2.8]
• Services	4.2	4.3	5.7	4.9	5.1
	[5.5]	[8.9]	[4.2]	[1.7]	[7.6]

Source: Pakistan Economic Survey (various issues)
Figures in parenthesis are growth rates

a) *Agriculture*

Share of agriculture sector in total private investment declined from 21.4 percent in the decade of 80's, to 14 percent in the first half of 90's and further to 11.2 percent in the second half of 90's. Despite the agriculture sector contributed one forth of the total value added its share in the total private investment has declined massively. Private investment in agriculture sector was 1.7 per cent of GDP in the decade of 80's, which declined to 1.0 percent of GDP in the previous decade. The performance for the last three years is also discouraging due to the prevailing drought conditions, as private investment has a negative growth of 10% for this adverse period. In a similar manner, lower credit supply in this sector also caused a decline in investment; credit disbursed in the agriculture sector declined from 2 per cent in the decade of 80's to 1.25 percent in the decade of 90's.The subsistence agriculture sector by its very nature cannot contribute appreciably towards increasing investment.

It is fact that in agriculture sector, productivity depends heavily on the climatic conditions and so the unobserved changes also matters along with the economic determinants. However, we analyzed the impact of macro determinants of real private investment econometrically (see Chart-A). The coefficients and elasticities of real private investment with respect to remittances, economic infrastructure, interest rate and private investment (lagged) are presented in Table 4. Magnitudes of elasticities computed at mean of data demonstrate that a 10 percent increase in remittances cause a 1.5 percent increase in real private investment and a 10 % improvement in economic infrastructure result in a 5.14 percent increase in real private investment. In similar manner, 10 % increase in interest rate will decrease the investment by 9%.

TABLE 4

	Real Private Investment in Agriculture Sector	Real Remittances	Index of Provincial Infrastructure	Nominal Interest rate
1981-90	5.79%	1.94%	4.89%	10.78
1991-95	-1.21%	-4.28%	5.94%	12.87
1996-00	0.52%	-10.15%	2.02%	14.69
2000-02	-3.69%	44.02%	1.49%	13.73

Source: Pakistan Economic Survey (various issues)

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CHART-A

We specify a behavioral function for the real private investment IPA^R that depend on (RM^R) real remittances, (r) interest rate, and ($IPA^R_{(-1)}$) lagged dependent variable.

$$IPA^R = f\left(RM^R, SPIEPI, r, IPA^R_{(-1)}\right) \qquad \textbf{(A.1)}$$

The above functional form can be expressed as.

$$IPA^R_t = b_0 + b_1 RM^R_t + b_2 SPIEPI_t + b_3 r_t + b_4 IPA^R_{t-1} + e_t \qquad \textbf{(A.2)}$$

If all the variables in the model are integrated of same order and residuals generated from the model is stationary then there exists a long run relationship between the dependent and independent variables.

Dependent Variable: IPAR
Sample (adjusted): 1974 1999

Variables	Coefficients	Elasticities	
Constant	4639.78**		
RMR	0.0405**	0.148	
SPIEPI	13.101**	0.514	
INTA	-415.847**	0.896	
IPAR(-1)	0.424**	0.421	
R-squared	0.887	Durbin-Watson stat	1.707
Log likelihood	-201.227	S.E. of regression	618.54

*, ** and *** significant at 10%, 5 %, and 1% levels respectively.

(Serial correlation LM test statistic is (0.487) so reject serial correlation)

As this equation has no serial correlation confirmed from LM-test above

All the variables in the model were non-stationary and become stationary at first difference or second difference but the stationary residual generated from this equation shows that there exists co-integration and there is long run relationship between variables and this equation is not spurious one.

VARIABLES	Q-STAT	ADF	PP
IPAR	19.85*	.086	0.0309
D(IPAR,1)	(0.065)	(-3.76)*	(-4.233)*
RMR	21.12*	-1.96	1.66

D(RMR,1)	(0.547)	(3.34)**	(4.02)*
SPIEPI	27.942*	0.83	-1.80
D(SPIEPI,2)	(.0140)	(-4.472)*	(-5.102)*
(week case on our side)			
INTA	23.954*	0.975	1.804
D(INTA,1)	(0.3195)	(2.74)**	(6.054)*
RESIDUAL	(0.281)	(5.53)*	(4.33)*

Sample period for the analysis is chosen (1974 1999) as latest data for investment series differ widely between the estimated and revised estimates in the economic surveys. So to avoid the computational errors we avoid using latest observations.

Ljung-Box Q-stat in the column 2 of above table shows that all the variables are non-stationary at level but are stationary at first difference (**sir except SPIEPI**). However residual of the equation are stationary at level proving the existence of long run relationship (co-integration). The Dickey Fuller and P-P test also proves the same situation in the column 3 and 4.

An overview of trend of economic determinants of private investment in agriculture sector shows that pleasant growth in remittances, economic infrastructure during the 1980s increased investment that grew at an annual average rate of 5.8%. Low level of nominal interest rate also encourages more investment in this era. Afterwards, in the first half of the decade of 1990s, massive decline in remittances and higher interest rates caused lower private investment. Over this five-year period the private investment decrease by 3 million rupees. From 1996 to 2000, decline in remittances along with the high interest rates has not fully offset the positive impact of infrastructural development and thus there is slight increase in private investment. However, in the last three years (2000-02) the economic factors perform better as interest rate reduced along with increase in remittances and infrastructure but private investment in this sector decline that would be due to non-economic factors such as drought.

Table 5
Contribution of determinants of real private investment
(agriculture)

Million Rs.	1981-90	1991-95	1996-00	2000-02
Change in private investment	3257	-3	746	-795
Determined by				
Remittances	64	0	-280	982
Infrastructure Index	1147	15	287	319
Nominal Interest Rate	56	-18	-208	955
Investment (lagged))	1034	-10	-529	888
Unexplained	956	9	1477	-3939

Absolute contribution of the determinants of private investment in agriculture sector is computed from the estimated coefficients and presented in Table xx. The changes in magnitudes of economic determinants will provide information in understanding the overtime changes in private investment in agriculture sector. Total increase in private investment of 3257 million rupees was due to better provision of economic infrastructure that contributed 1147 million rupees, increasing remittances contributed 64 million rupees, relative lower interest rate contributed 56 million rupees and higher level of investment in previous year contributed 1034 million rupees during the decade of 1980s. Unexplained change in private investment of 956 million rupees was also higher that might be termed as the randomness contributed in increasing investment. The private investment has declined by only 3 million rupees during the first half of the decade of 90s that was due to increasing nominal interest rates. In the second half of 90s, all the determinants contributed negatively but non-economic factors pulled investment and resulted in a net increase in of 754 million rupees in investment. A reversal of this situation is observed during the last three years of 2000-02, as economic factors contributed positively while non-economic factors has caused massive reduction in investment that dominated the contribution of economic factors.

Agriculture sector is characterized by a degree of randomness depending upon weather conditions and the incidence of natural disasters like drought, floods, pest attacks, etc. so the production and investment in this sector depends more on the non-economic factors.

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b)   *Manufacturing*

Private investment in manufacturing sector grew at an average rate of 11.3 per cent in the 80's, which decreased to 3.7 percent in the first half of 90's and then declined sharply to 0.5 percent in the second half. As a percent of GDP, the private investment in this sector increased in first half of 90's to a peak of 2.8 percent. This increase in investment can be attributed to the policy of deregulation and liberalization regime adopted in that era. But this level of private investment was not sustained and declined to 1.9 per cent in the second half of the 90's. This decelerating trend continued and private investment in manufacturing became 1.7% and 1.6% in the 2000-01 and 2001-02 respectively.

Behavior of private investment in manufacturing sector is modeled by identifying its macro determinants. Real interest rate, capacity utilization in manufacturing sector, relative prices of imported machinery and exports of goods are the significant determinants of investment. The elasticities of explanatory variables demonstrate that a 10% increase in real interest rate reduces investment by 0.67% and a 10% increase in relative prices of capital goods cause a reduction of 3.27% in private investment. However 10% increase in capacity utilization increase investment by 15.4% and a 10% increase in exports of goods cause an increase of 11.76% in private investment in manufacturing sector.

A study of the determinants of investment in this sector shows that increase in real interest rate and relative prices of imported capital goods during the decade of 1980s pull down investment but higher growth in capacity utilization and increasing exports has overcome the exacerbating impacts and cause a positive growth of 11.3% in private investment. But in the first half of 90s private investment grew at an average rate of 3.7% that is mainly due to decline in real interest rate and relative prices of capital goods along with positive growth in exports of goods that has enhanced private investment. Afterwards, poor performance of in the manufacturing sector reflected by lower capacity utilization and increasing real interest rates resulted in a massive decline in the real private investment. However, during the last three years (2000-02) the higher real interest rate, increasing relative prices of imported capital, declining capacity utilization exacerbated negative impact on the growth of private investment that has fallen to -2.8%. Higher exports of goods have played an important role in enhancing investment in the

manufacturing sector through out the 80s and 90s. Changes in private investment in manufacturing sector are explained by the changes in its determinants such as movement in interest rate, capacity utilization and external factors. But a reduction in interest rate and better export performance seems unable to explain the decline in investment in the last three years (2000-02). Which would be due to non-economic factors.

Table 6

	Real Private investment in manufacturing sector	Real Interest Rate (lagged)	Capacity utilization	Relative prices of imported machinery	Exports of goods
1981-90	11.3%	3.28	1.3%	13.6%	9.1%
1991-95	3.7%	2.01	-3.4%	-2.3%	8.7%
1996-00	0.5%	4.81	-2.3%	4.7%	1.9%
2000-01	2.1%	11.02	-3.5%	13.4%	13.6%
2001-02	-2.8%	7.98	-1.8%	6.5%	11.2%

Decomposition of changes in private investment in manufacturing sector into its determinants however presents the numerical changes through contribution of each determinants of specific period of time. Net increase of 6.83 million rupees during the 1980s was due to contribution of 5.4 million rupees due to increase in exports, 3.15 million rupees due to improved capacity utilization, -3.08 million rupees due to increase in relative prices of imported capital, -0.15 due to increase in real interest rate and 1.5 million rupees were unexplained because of non-economic factors.

CHART- B

Equation for IPMR

Dependent Variable: IPMR

Variable	Coefficient	Elasticities
Constant	-13080.89*	
Real interest rate	-189.39*	-0.067
Capacity utilization in manufacturing sector	22296.91*	1.539
Relative prices of imported capital goods	-1700.07**	-0.327
Exports of goods	0.208*	1.176
Dummy_92	3522.168*	

R-squared	0.956421	Durbin-Watson stat	1.533178
Log likelihood	-204.0218	F-statistic	83.39821

- Significant at 1% level, ** significant at 5 % level

(Serial correlation lm test statistic is (0.487) so reject serial correlation)

As this equation has no serial correlation confirmed from LM-test above

All the variables in the model were non-stationary and become stationary at first difference but the stationary residual generated from this equation shows that there exists co-integration and there is long run relationship between variables and this equation is not spurious one. (sir this is perfect equation with refrence to cointegration)

VARIABLES	Q-STAT	ADF	PP
IPMR	26.74	1.182	1.149
D(IPMR,1)	(0.0001)	(-3.578)*	(-5.316)*
(INTA(-1)-(@PCH(PI(-1))*100))	8.68	0.97	-2.52
D((INTA(-1)-(@PCH(PI(-1))*100)),1)	(.0140)	(-3.741)*	(-6.142)*
CUINDEX	20.57	0.96	0.61
D(CUINDEX,1)	(0.007)	(3.16)*	(5.235)*
PIMPIMP(-1)/PI(-1)	24.79*	0.107(NONE)	0.152
	(1.93)	(2.50)**	(3.41)*
XGR	26.43	0.768	0.377
D(XGR,1)	(0.893)	(2.87)	(4.22)
RESIDUAL	(0.281)	(5.53)*	(4.33)*

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Table 7

Contribution of determinants of real private investment (manufacturing)

Million rupees	1981-90	1991-95	1996-00	2000-02
Changes in Private Investment in Manufacturing	6.834	-0.215	-1.581	-0.095
Explainded by				
Real Interest rate	-0.15	0.70	-1.74	0.18
Capacity utilization	3.15	-2.33	-0.91	-0.67
Relative machinery cost	-3.08	0.71	-0.74	-1.00
Exports goods	5.39	2.34	0.75	4.84
Unexplained	1.51	-1.63	1.07	-3.45

c) *Services*

Contrary to commodity producing sectors, services sector perform relatively better. Higher growth in value added of services sector attracted more private investment. Private investment in services were 4.2% of GDP that became 4.3% of GDP in the first half of the 1990s that increased to 5.9% in the second half of the decade. In 2001-02, this ratio increased to 7.9%. But the increase in private investment in this sector was not sufficient to recover the overall decline.

An econometric investigation of the factor that determine private investment in services sector shows that lagged value of relative prices of imported machinery and real interest rates are inversely related while lagged value of value added in services is directly related to private investment. The coefficients of estimated equation along with the elasticities are reported in Table xx. Further, elasticities of the explanatory variables demonstrate that a 10% increase in relative prices of imported capital cause a reduction of 1.55% in the private investment. A 10% incre ase in real interest rate cause 0.25% decline in the investment. However, accelerator impact is very strong that reflected by a 10% increase in real value added in this sector results in an increase of 10.5% in private investment.

Table 8

	Real Private investment in Services sector	Real Interest Rate (lagged)	Value added in Services sector (lagged)	Relative prices of imported machinery (lagged)	Real Private investment in Services sector (lagged)
1981-90	5.5%	3.28	6.8%	13.6%	6.1%
1991-95	8.9%	2.01	5.2%	-2.3%	5.4%
1996-00	4.2%	4.81	4.1%	4.7%	14.1%
2000-01	1.7%	11.02	3.6%	13.4%	-19.3%
2001-02	7.6%	7.98	3.5%	6.5%	-1.5%

Growth in the explanatory variable along with the absolute value of real interest rate is presented in Table xx. Which shows t hat higher growth in the value added has restored

investment in services sector. As the real interest rates and relative prices of imported machinery has increased to restrict investment in this sector.

CHART C

Dependent Variable: IPOTR

Variable	Coefficient	Elasticities
C	242.89	
Relative machinery cost (-1)	-1762.78*	0.155
Real Interest rate (1)	-155.70***	0.025
Value added in other sector (-1)	0.101*	1.05
Dependent (-2)	0.067	0.0596
IPPS impact	12031.80*	

R-squared	0.99	Durbin-Watson stat	1.78
Log likelihood	-205.21	F-statistic	475.87

VARIABLES	Q-STAT	ADF	PP
IPOTR	23.35*	-0.177	-0.067
D(IPOTR,1)	(0.001)	(-2.80)***	(3.06)*
(INTA(-1)-(@PCH(PI(-1))*100))	8.68	0.97	-2.52
D((INTA(-1)-(@PCH(PI(-1))*100)),1)	(.0140)	(-3.741)*	(-6.142)*
YSOTR	24.16*	2.70	2.48
D(YSOTR,1)	(5.54)*	(4.55)*	(3.94)**
PIMPIMP(-1)/PI(-1)	24.79*	0.107(NONE)	0.152
D(PIMPIMP(-1)/PI(-1),1)	(1.93)	(2.50)**	(3.41)*
RESIDUAL	0.154	3.02**	3.80*

Table 9

Contribution of determinants of real private investment (other)

	1981-90	1991-95	1996-00	2000-02
Changes in Private Investment in other	7.358	9.028	1.687	3.291
Explained by				
Real Interest rate	-0.12	0.58	-1.35	0.15
Income other	10.33	5.59	4.84	2.69
Relative machinery cost	-3.20	0.74	-0.73	-1.05
Investment	0.50	0.29	1.28	-0.60
Dummy IPPS	0.00	0.00	-1.13	-2.44
Unexplained	-0.15	1.84	-1.22	4.54

During the decade of 1980s, relatively higher real interest rates and increasing cost of imported machinery cause a reduction in private investment by 3.32 billion rupees but higher growth in value added cause an increase of 10.33 billion rupees. But the massive increase of 9 billion rupees in private investment in the first half of the 90s can be determined by an increase of 0.58 billion due to decline in real interest rates, 0.74 billion was due to decline in relative cost of imported machinery and 5.59 billion was due to increase in value added in this sector. Movement of the economic factor contributed positively in enhancing private investment during the first half of the decade of 1990s. Second half of the 90s witnessed a decline of 1.35 billion due to higher real interest rate, higher cost of imported machinery and due to non-economic factors prevailed in that period. However, from 1999-00 to 2001-02,

PUBLIC INVESTMENT

Different studies in Pakistan have tried to find out the relationship between public and private investment. Some support complementary relationship () or it can be said that public investment "crowds in" private investment. "Crowding in" can be explained in a scenario in which public investment enhances private investment. Private investors may be reluctant to take initiative due to risk and uncertainties. So the public sector investment not only encourages private investors but also increases the productivity of capital. Other support crowding out, a phenomenon in which increase in public investment causes a reduction in the private investments, as both categories of investment are substitutes. This argument is basis on that an increase in public investment results in a widening of the fiscal deficit, and if this deficit is financed by bank and non-bank borrowings then it increases the interest rate in the economy. Increase in interest rate will cause a reduction in the private investment.

But some studies have concentrated on the issue to go beyond these hypotheses and tried to solve this problem by disaggregating the public investment in to two categories. Public investment disaggregated in to infrastructure investment and direct investment. They showed that infrastructure investment crowd in private investment while direct investment crowd out private investment.

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	Decade Of 80's	First Half Of 90's	Second Half Of 90's	2000-01	2001-02
Public Investment	**9.7**	**8.7**	**6.6**	**6.1**	**5.3**
	[4.6]	**[4.0]**	**[-2.9]**	**[3.1]**	**[-9.3]**
• General Government Investment	3.8	3.6	2.6	2.3	2.3
	[9.8]	[3.2]	[-2.3]	[0.5]	[4.5]
a) Federal	1.3	1.1	1.0	0.8	0.8
	[8.1]	[4.3]	[-1.3]	[-6.6]	[-1.1]
b) Provincial	1.9	1.9	1.2	1.1	1.1
	[9.8]	[5.4]	[-4.8]	[-0.9]	[9.8]
c) Local	0.6	0.5	0.3	0.4	0.4
	[18.9]	[-5.0]	[-1.8]	[24.8]	[1.5]
• Gross Capital Formation by Public Sector	6.0	5.1	4.0	3.8	3.0
	[2.7]	[4.7]	[-1.5]	[4.8]	[-17.5]
a) Agriculture	-	0.3	0.2	0.03	0.1
		[14.1]	[-8.1]	[-71.1]	[331.1]
b) Industry	-	0.1	0.3	0.8	0.1
		[-10.6]	[99.3]	[97.3]	[-89.2]
c) Services	-	4.6	3.5	3.0	2.8
		[7.7]	[-2.8]	[-5.5]	[-0.4]

Figures in parenthesis are growth rates

In Pakistan, public sector investment is divided into a) investment of general government in the economic, social and infrastructure development and b) investment in the public owned enterprises. The detailed analysis of general government investment shows that at federal level it declined by 0.33 per cent of GDP, at provincial level it declined by 0.62 per cent and at local level it fell by 0.29 per cent of GDP. The overall reduction in the general government investment is of 1 per cent of GDP. General government investment is useful in increasing social development and economic infrastructure, which increase the productivity of capital. Thus a decline in this investment will discourage private investors by reducing their return on investment. The investment in the public sector

enterprises decreased by 2 per cent of GDP in the decade of the 90's. Reduction in this investment creates uncertainty among the business class.

General government investment plays a vital role in the establishment of better infrastructure and in the restoration of investor's confidence. Thus an increase in private investment can only be possible if public sector increases its investment spending on infrastructure activities. However increases in latter type of investment is constrained by paucity of resources and IMF conditions that require lower budget deficits. These problems can be resolved by reducing allocative inefficiency in the public expenditures and sincere efforts towards greater resource mobilization.

Although economic, political and social factors are also responsible for such a declining trend in the growth path. For instance, decrease in rate of savings, unstable political governments, inexperienced and corrupt leadership, low human resource endowments, contagion effects of East Asian crisis and sanctions imposed upon Pakistan following the nuclear blasts were the main causes of such a low growth in the previous decade. But as the article discussed the role of decreasing public investment is of vital importance in explaining the low growth during the decade of 90's. Public sector investment should be sustained at a reasonable level while constructing a revival plan for achieving a stable growth path of the economy.

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