

## Impact of Inflation, Public Deficit and Foreign Direct Investment on National Savings: Case Study of Pakistan

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**Abstract:** The document attempts to investigate globalization and savings behavior in Pakistan. This paper takes into account the importance of globalization as a determining factor for national, private and public savings. The Ordinary Least Square method is used for empirical analysis. The analysis is performed in two stages. In the first phase, descriptive statistics and correlation matrix are described. In the second phase, multivariate analysis explains that globalization determines Pakistan's saving behavior. The study concludes that the consumer price index, the real interest rate and workers' remittances have a positive and significant influence on savings. The government deficit has a marginally significant impact on savings, while foreign direct investment has a negative but significant impact on national and private savings. Public savings are directly and insignificantly affected. Trade liberalization has a negligible and positive impact on national savings, but has a negligible negative impact on public and private savings. Given the role of globalization and the saving behavior in Pakistan, the government is suggested to provide a favorable environment and tax incentives to improve foreign direct investment. This will increase savings in the country. To this end, the country's industrial and agricultural sectors must be stable. Furthermore, it is necessary to create an investment friendly business environment in Pakistan.

**Keywords:** Workers' remittances, Globalization, Deposit rate, Surplus labor, Trade Openness, Pakistan.

## INTRODUCCIÓN

The issue of the savings decision is important in the short and long term for the macroeconomic analysis regarding Pakistan. Basically, aggregate savings determine the size of the capital stock and are the main source of living standards. From an economic point of view, savings can play an important role in increasing employment, growth and creating economic stability. In addition, savings can increase aggregate demand by increasing domestic consumption, the level of investment, interest rates, the exchange rate and the growth rate of the economy. Efficient utilization and mobilizing internal resources are the primary objectives of self-sufficiency and sustained growth. For these reasons, the analysis of savings behavior and the knowledge of the determinants of savings are necessary for policies making.

By promoting economic growth and welfare of underdeveloped countries, savings are considered the essential factor. Furthermore, the credit and insurance markets are inefficient and underdeveloped in poor countries like Pakistan. Savings are the essential source for increasing household wealth and assets through organized financial markets and smoothing out the unexpected change in their income. In addition, savings are the only source for increasing the wealth and assets in the economic system. Theoretically, savings improve growth through investment and the creation of job opportunity. Globalization also plays an important role in promoting the economy not only in developed countries but also in underdeveloped countries. Globalization refers to the process of integration between society and economies. The phenomenon includes the flow of products, goods and services, work, ideas and information that cross national borders. The frequency and intensity of flows are related to the upward or downward trend of globalization. One of the main

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economic reasons for globalization is to remove barriers to trade for the betterment of all societies. Furthermore, globalization plays an important role in increasing savings, investments and the level of employment in the economy.

Savings and globalization are very important for the growing economy. Evidence shows that despite offering attractive incentives to foreign investors, Pakistan's performance remains poor. At the same time, commercial performance also declined despite intense trade liberalization efforts.

The globalization theory of the world system shows the progress in production and free trade between different countries. By establishing economic relations between different countries, the exchange of different goods and services increases in the form of exports and imports and also affects a country's savings. According to Harrod Domar's dynamic model, the growth rate depends on the level of savings and the capital output ratio of the economy. While the Solow model shows that savings are a determining factor in the steady state capital stock and the growth rate of the economy through the accumulation of capital.

The purpose of this study is to analysis the relationship among globalization and savings behavior in Pakistan. Pakistan's savings trends are interpreted in section 2. Section 3 examines the review of the national and international literature on globalization and savings behavior in Pakistan. While the source of the data, the methodological problems and the model specifications are described in sections 4 and 5 respectively, section 6 explains the results of the study. Conclusion and policy implications have also provides in the last section.

### Savings System in the Economy



The economy is expected to contract 0.4 percent in the current fiscal year, before recovering by 2.1 percent in the next fiscal year, according to government estimates. Policymakers discuss that the priority of monetary policy has appropriately shifted toward supporting growth and employment during these challenging times.

## LITERATURE REVIEW

There is a great deal of literature available on the study of saving behavior and its theoretical and empirical determinants. According to the classical school of thought, savings are mainly influenced by the interest rate. Keynesian emphasizes national income as the main determinants of saving behavior. Here we review some previous studies nationally or internationally.

Burney and Khan (1992) analyzed the impact of family income and saving behavior in Pakistan. The data were obtained from the survey on household income and expenditure (HIES) for the years 1984-1985. The ordinary least squares (OLS) technique was used for the estimate. Rural households' propensity to save was much higher than their urban counterparts. The investigation concluded that the household income and the income status of the householder, the employment status of the householder and the employment of the householder were positive in relation to savings.

Hussain (1995) discussed the long run trend in private savings behavior in Pakistan. The study found that the savings rate in Pakistan during the 1970-92 periods was 50% lower than in Southeast Asian countries. Econometric analysis was performed using time series data for the period 1970-93. The joint integration methodology was used to analyze the long-term behavior of savings. Research concluded that the proportion of working members of the population, income growth and financial dependence were positively associated with savings behavior. Agarwal performed the causality between the savings rate and growth rate. The analysis used time series data from 1960-1996 for the savings model and from 1960-1998 for the investment model. For the purpose of the estimate, the ordinary least square method was used. Granger's causality test was used to examine causality. The variables were used as a percentage of GDP. The results of the study showed that foreign direct investment and net total foreign borrowing had a positive impact on total investment and also on private investment. The growth rate of real GDP, the money supply and the lagged dependent variable also positively influenced the age dependency rate, external savings and the private savings rate.

Kenrick (2004) showed that remittances had a positive impact on financial deepening and that an improvement in the flow of remittances influenced the savings behavior of politicians. The author used the panel data for the microeconomic variable for the period 1983-2001 completed by 18 countries and examined with the OLS method. The investigation concluded that, in the case of the income variable. The country's interception terms were positive and statistically significant for countries such as Bangladesh, China, Costa Rica, Egypt, Indonesia, Korea, Mexico, the Philippines, Thailand and Turkey. Another variable remittance as share of the product of income by the interest rate had a significant positive impact on remittances, as well as the deepening and savings.

Hasnain *et al.*, (2006) estimated the determinants of household savings in the economic development process in Pakistan in the period 1972-2003. The data used in this study was arranged by the Pakistani state bank in the years 1980-03, Economic Survey of Pakistan and world development series. Johansen's multiple correlation and error correlation model was used to estimate the long and short term relationship. The study concluded that the growth rate of per capita income, per capita income and the interest rate were positive and that the relationship between youth dependency ratio, the old dependency ratio and the inflation rate negatively affected public savings long-term as well as in the short term. The error correction term -0.05 showed that the model would converge towards a long-term equilibrium with 0.05 percentage point's adjustment each year.

Fasoranti (2007) investigate that the effects of rural savings on the economic growth. Primary data were collected through the questionnaire of 100 respondents from 5 Nigerian villages. For the purposes of the estimate, the Ordinary Least Square method was used. The results of this study showed that income, human capital, investments and assets were positively related to total savings. It has also been found that 98. The percentage variation in total savings was explained by income, human capital, investments and assets. It was also proposed to adequately mobilize rural household to join cooperative societies.

Horioka (2009) indicates that the saving behavior of the aged in Japan. The study discusses micro data. For this purpose, a survey on household income and expenditure was conducted to collect information on saving rates when considering age group of the household. The study found that the savings had been made at retirement age, working age and even at an early age. In addition, there has been a sharp increase in savings for older retirees since 2000 due to lower social security benefits, increased consumer spending and higher social security taxes and premiums. These results were consistent with the life cycle model and suggested that this model was highly applicable in the case of Japan.

## DATA, MODEL AND METHODOLOGY

The issues relating to data sources, methodology and model specifications are discussed below;

### A. Nature and Sources of Data

This section discusses the nature and sources of the data used in this study. In this analysis, the data of the annual time series with respect to the related variables. For savings, the concept of national savings, public savings and private savings is considered in the analysis because national savings is the sum of public and private savings.

For this analysis, the annual data for the variables National Savings, Public Savings, Private Savings, Consumer Price Index, Real Interest Rate, Budget Deficit, Worker Remittances and Open Trade are obtained from the Hand Book of Statistics of Pakistan Economy. All variables are taken in millions of rupees.

### B. Methodological Issues

The methodology applied to examine Pakistan's globalization and saving behavior is time series analysis. As long as an econometric measurement is considered, there may be some methodological problems at hand. Typically, econometric time series face the problem of non-stationarity and spurious regression. In the presence of non-stationarity or in the event of spurious regression, the OLS method becomes inefficient. If all variables are fixed at level I (0) or the

DW value is greater than R2, the ordinary least squares method is useful and applicable. In the present study, we found that the variable satisfies the stationarity property at level I (0).

**Ordinary least square method**

Carl Friedrich Gauss, a German mathematician in 1794, introduced the OLS method. Under a certain assumption, the least squares method has some very attractive statistical properties that have made it one of the most powerful and popular regression analysis methods. The ordinary least squares method is basically used to estimate the relationships of variables. This method is employed when all variables are stationary. This technique is also useful for analyzing multivariate data. The multiple regression equation takes the form of;  
 $Y = \beta_1 + \beta_2X_2 + \beta_3X_3 + \dots + \beta_nX_n + \mu$  = Regressand variable  
 Xi = set of explanatory variables and  $\mu$ = disturbance term.

LNSAV = National savings register LPRSAV = Private savings register LPBSAV = Public savings register CPI = Consumer price index DR = Deposit rate GD = Public deficit WREM = Workers' remittances OPEN = Business opening IDE = Foreign direct investment  $\mu_i$  = Error term

**Model Specification**

The model specifications are based on the multiple regression technique. Our savings model is specified in three specifications. These three specifications are shown below. Considering the data properties, we followed the linear logarithmic model in the present study.

$$LNSAV = \alpha_0 + \alpha_1CPI + \alpha_2DR + \alpha_3GD + \alpha_4WREM + \alpha_5OPEN + \alpha_6FDI + \mu_i \quad (1)$$

$$PRSAV = \beta_0 + \beta_1CPI + \beta_2DR + \beta_3GD + \beta_4WREM + \beta_5FEN + \beta_6\beta_{DI} \gamma_5 +$$

Where is it

LNSAV = National Savings Registry LPRSAV = Private Savings Registry LPBSAV = Public Savings Registry CPI = Consumer Price Index DR = Deposit Rate GD = Public Deficit WREM = Workers' Remains OPEN = Business Opening IDE = Foreign Direct Investment  $\mu_i$  = Error term

• **Descriptive analysis**

Descriptive statistics analysis described the characteristic of the data as Mean, SD, Max & Min values of data. It describes the degree of association among the variables

Table explains that on the average National Saving are 234602.60 with variability. Average values of the Private and Public Savings are 21.65 and 8.09 with the SD of 2.66. The workers' remittances, government deficit & foreign direct investment are on the average 2080.68, 206066.20 & 780.83million rupee with SD of 1270.29, 105559.90 & 1284.47.

**Table 1: Descriptive Statistics of the Variables**

Variables	Mean	Max	Min	Std. Dev.
<b>N SAV</b>	234602.60	2608070.00	7189.00	528680.50
<b>PRSAV</b>	21.65	13.36	9.84	2.66
<b>PBSAV</b>	8.09	23.32	2.00	4.02
<b>CPI</b>	73.00	259.80	21.60	34.67
<b>DR</b>	6.97	20.77	2.60	2.98
<b>GD</b>	206066.20	-22298.00	603022.00	206678.80
<b>WREM</b>	2080.68	6483.74	236.0	2180.38
<b>OPENNESS</b>	0.43	0.54	0.37	0.05
<b>FDI</b>	780.83	6162.90	7.40	2193.46

**A. Correlation matrix**

The correlation matrix explains the relationship between two or more variables. The correlation matrix measures the degree or strength of the relationship between two variables. The correlation matrix also indicates a multicollinearity problem. If the correlation coefficient between two independent variables has a value absolutely equal to 1, then there is a serious multicollinearity problem.

**Table 2: Correlation Matrix**

Variables	PBSAV	NASG	PRSAV	CPI	DR	GD	WREM	OPENNESS	FDI
<b>PBSAV</b>	1.00								
<b>NASG</b>	0.71	1.00							
<b>PRSAV</b>	0.77	0.72	1.00						
<b>CPI</b>	0.68	0.82	0.83	1.00					
<b>DR</b>	-0.07	-0.33	-0.31	0.30	1.00				
<b>GD</b>	-0.64	-0.82	-0.83	0.83	0.33	1.00			
<b>WREM</b>	0.73	0.65	0.53	0.62	0.14	0.62	1.00		
<b>OPENNESS</b>	0.38	0.54	0.34	0.41	0.21	0.59	0.52	1.00	
<b>FDI</b>	0.62	0.97	0.53	0.67	0.26	0.73	0.65	0.76	1.00

**Multivariate Analysis**

Table 2 shows the correlation coefficient of zero order between the variables. According to this matrix, NASG is moderately related to PBSAV because of its correlation the coefficient is 0.61. PRSAV are moderately related to PBSAV, while they have a strong relationship with NASAV. The CPI is moderately related to PBSAV and highly collinear with NASAV and PRSAV. The interest rate is correlated weekly with PBSAV, NASAV, PRSAV and the CPI. The public deficit is correlated to PBSAV, strongly correlated to NASAV, PRSAV and CPI, but weekly with the interest rate. WREM are highly correlated to PBSAV ,NASAV, PRSAV, the CPI, the interest rate and the public deficit .Trade opening is correlated weekly with PBSAV , PRSAV and the interest rate, while it is moderately correlated with NASAV, the CPI, the public deficit and WREM. FDI is strongly in line with NASAV, the CPI, the public deficit and WREM, although they are moderately related to PBSAV, PRSAV and trade opening, but are correlated weekly with the interest rate.

OLS estimates for globalization and savings behavior are presented in Table 2. Column 1 indicate the global variables provided in the form of trade opening workers' remittances and foreign direct investment and control as consumer price index interest rate and budget deficit Columns 2, 3 and 4 respectively provide the estimates of the coefficients for the national savings model, the private savings model and the public savings model.

**Table 3**

Variables	Model (1)	Model (2)	Model (3)
<b>C</b>	6.7862	6.8230	4.3624
	(21.1264)*	(13.8516)*	(2.1327)
<b>CPI</b>	0.0392	0.0399	0.0482
	(11.1180)*	(21.7286)*	(1.8472) **
<b>DR</b>	0.1792	0.1832	0.2748
	(2.8895)*	(4.1642)*	(1.8307) **
<b>GD</b>	-2.87-07	-2.82-07	-1.26-04
	(1.7884)***	(2.8745) **	(0.8478)
<b>WREM</b>	0.0003	0.0003	0.0020
	(2.8398)*	(3.8056)*	(1.2582) ***
<b>OPEN</b>	0.2727	-0.2041	-8.2722
	(0.2982)	(-0.1856)	(-0.6787)
<b>FDI</b>	-0.0004	-0.0003	0.0002
	(-2.0358)*	(-1.6020)*	(0.3148)
<b>R-Squared</b>	0.94	0.95	0.43
<b>Adjusted R- Squared</b>	0.93	0.94	0.42
<b>Durbin-Watson Stat</b>	1.50	1.43	1.69
<b>F- Statistics</b>	109.33	145.57	4.26
<b>Probability</b>	0.0000	0.0000	0.0000

The estimates in Table 3 describe the savings behavior in Pakistan. The coefficient of the consumer price index is positive and highly significant in all models. The 1-unit change in the consumer price index increases nearly 0.05 percent of all savings. The coefficient is positive and statistically significant. The reason may be that it increases producers' profits and state revenues in the form of income tax.

The interest rate is another important factor that directly influences savings. In the present study it is observed that the interest rate has a statistically significant and positive impact on savings behavior at 1%. The reasons for the

positive impact of the interest rate may be that more savings are generated due to the higher return on savings. The study also supports the classical theory of interest.

The budget deficit ratio is negative and marginally significant at 10 % for all types of savings. In the case of private savings, reject the Ricardian equivalence theory. The reason may be that people are innocent enough to consider government spending as a more productive deficit and will not be taxed in the future. Therefore, it encourages consumers to spend more. That's why private savings decrease and the budget deficit increases. But in the case of public savings, according to the theory, as increasing the deficit, govt expenditure exceeds than the govt revenue, thus reducing public saving. Since public savings have a large share of national savings, national savings also decrease with the reduction of public savings.

The worker remittance coefficient has a positive and significant impact on all types of savings. Savings increase by 0.02 percent with a one-unit increase in workers' remittances in almost all types of savings. As far as the coefficient of Trade Openness is concerned, it has a positive but insignificant impact in the case of national savings. The change of 1 unit on opening increases 0.38 percent of national savings. The reason could be that openness plays an important role in promoting exports, especially the trade of intermediate inputs. But openness has a negative and insignificant influence on public and private savings. As our society is consumption oriented, an increase in trade opening give more incentives for consumers to increase consumer spending on imported goods due to the demonstration effect. In this way, private savings will decrease. In the case of our country, openness increases imports rather than exports. And a greater part of our imports include finished manufacturing products compared to our exports consisting of raw or semi-finished products. For this reason, the government has to pay more import payments than export earnings and this situation has a negative impact on public savings.

All coefficient generally have signs consistent with economic theory, with the exception of foreign direct investment. Our results show a significant and negative impact of foreign direct investment on national savings, as well as on private savings. But this finding contradicts study, which found a positive relationship between savings and foreign direct investment. The reason for this is that in our country the lack of fiscal incentives and political instability is a major obstacle in the way of foreign direct investment. Due to such like, foreign investors do not want to take the investment initiative in our country which has a negative impact on national and private savings. But the coefficient of foreign direct investment is positively related to public savings.

## CONCLUSIONS AND POLITICAL IMPLICATIONS

This study examines globalization and saving behavior in Pakistan. Empirical results show the relationship between globalization and Pakistan's saving behavior. We found that our study supports the theory of loanable funds but rejects the Ricardian equivalence theory presented by the classical. These findings also highlight the importance of globalization to improve savings. The consumer price index and the interest rate are positively and significantly related to both public and private and public savings. While the public deficit has a marginally significant and inverse relationship with savings. Three global variables were used in this study, such as worker remittances, trade openings and foreign direct investment. The study shows that worker remittances have a direct and significant impact on all types of savings. This is because globalization provides more surplus labour to work overseas and this will enhance the savings of our country. The more savings provide internal resources to improve investment, production and employment. In this way, not only will internal resources be available, but dependence on foreign resources will be reduced.

Trade opening has a direct and insignificant impact in the case of national savings, but an inverse and insignificant impact on private and public savings. This is due to the nature and gap between export earnings and import payments in our country. Because mainly our exports consist of primary or semi-finished products for which lower prices are determined in the international market, while imports include manufacturing and final products with high prices on the international market. This situation creates a gap between export receipt and import payments which have unfavorable trading conditions which have a negative impact on savings. Moreover consumer-oriented society and the demonstration effect increase the consumption of imported products. This also increases imports compared to exports. In light of the results obtained in this study, the following policies are recommended to increase Pakistan's savings to achieve macroeconomic goals.

The government should cut non-development spending to free up enough resources to use for development purposes. Due to the increase in government development costs, more resources are transferred to people in the form of higher incomes and this will also increase savings.

To increase the profits of companies and producers, the government must establish a stable pricing policy. In this way, producers will have incentives to work more sincerely and this will increase savings.

The government must implement supportive policies to increase private savings by reducing unproductive spending.

The interest rate affects savings positively and significantly. Therefore, the financial market should provide more incentives in the form of high returns for people in order to improve savings.

The budget deficit is not significant for determining savings in Pakistan, i.e. there is no Ricardian equivalence.

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