

## **Determinants of Private Savings: A Case of Pakistan from 1990 to 2019**

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### **Abstract**

*Private savings are considered gauge of economic health. In times when people rely more on debts rather than their savings, economy is found to be more under financial pressures. This study is established to determine the impact of various macroeconomic variables on private savings of Pakistan. This research covers 30 years from 1990 to 2019. Independent variables of the study are FDI, GDP, Remittance and Inflation. Impact of all these variables was checked on Private savings. This is a descriptive cum explanatory research and secondary data is collected. Descriptive statistics is applied for explaining data rigorously and regression analysis is applied for testing hypotheses and understanding the significance of relationship between selected dependent and independent variables. Level of significance considered in this study was 5%. The results have revealed that FDI has significant and positive, age dependency ratio and remittance have significant but negative and inflation has insignificant impact on private savings of Pakistan.*

**Keywords:** Private Savings (PS), Foreign Direct Investment (FDI), Gross domestic Product (GDP), Remittance (REM) and Inflation (INF).

## **1. INTRODUCTION**

Investments in an economy highly rely upon its tendency to save. Therefore, importance of determining the saving behaviour is substantial at the time of understanding its economic dynamics. Savings are unconsumed disposable incomes that are kept for stabilizing future consumption. Private savings are considered gauge of economic health. In times when people rely more on debts rather than their savings, economy is found to be more under financial pressures. People save with intentions to have enough funds for rainy days, so people in developing countries who are more expose to get unemployed (Sylos Labini, 2013), must have more saving activities to prevent their selves.

Private savings are part of national savings, to be precise national savings are the accumulation of private and public savings; this equation gives an impression that how vital it is for overall performance of economy. Low rate of private savings are likely to create more reliance on inflows generated through foreign capital. This is normally done for financing required investments in various areas such as; infrastructure, education and other economic and social activities. Foreign capital is although inevitable in earlier developmental stages. However, whenever economies are highly dependent on them foreign capitals make them more vulnerable to external shocks. This threat of vulnerability plays are vital role in making it clear that how important it is to enhance domestic resources for making economies self-sufficient.

Economy of Pakistan has a very low rate of savings, as it is at its early stage of development and there are numerous factors behind this. Private savings have a tendency to contribute in overall growth of economy through stabilising its finances. According to Hondroyiannis (2004), there are so many different macroeconomic variables that are expected to have impact on Private Savings and in this study all the variables are selected by keeping this fact in mind.

### **1.1 Background**

Pakistan's Private Savings are highly inconsistent with decline rate or a minor increasing rate as compare to other Southeast Asian countries. In 1970s growth rate of Pakistani economy was recorded to be 4.8% (total investment=17.1%, national savings=11.2%, foreign

savings=5.8% and domestic savings=7.4% of GDP). This was followed by an increase in 1980s where, growth rate of Pakistan was recorded to be increased and reported 6.5% (total investment=18.7%, national savings=14.8% foreign savings=3.9% and domestic savings=7.7% of GDP). These figures clearly demonstrate that in spite of substantial decline in foreign savings, overall growth is remarkable due to increase in total investment, national savings and domestic savings.

In 2003 growth rate of 7.5% was reported with an increase in domestic savings and decrease in foreign savings. However, after 2003, there was a tremendous increase reflected in foreign saving and decline in domestic savings, which resulted growth rate of 4.1% for the economy (Rehman *et al.*, 2010).

According to Pakistan Bureau of Statistics, average household savings rate in Pakistan has decrease immensely, in 2002, an average Pakistani was saving 31% of income and this has decreased to 9.2% by the year 2011. Recently Pakistan Economic Survey of 2013-14, domestic savings of is 7.5% GDP (2013-2014) as compared to 8.3% GDP (2012-2013) and this gap is being financed by the net foreign resource inflows.

## **1.2 Problem Statement**

In past, various researches have been conducted having focus on Private savings and according to these studies different determining factors are likely to affect the Private savings in disparate settings. This study conducted used recent data, becoming the reason of adding the latest knowledge because there was a need in Pakistan of such type of study by using latest data.

Unstable economic condition of Pakistan's economy requires Private savings as an essential. It has become important for all the economic members to have some funds for crucial times due to the instability of this economy. This study will help all the readers in understanding the factors affecting this vital element in Pakistan's economy.

## **1.3 Research Question**

Following questions arises with the background of this research:

- What are the determinants of Private savings in Pakistan's economy?

#### **1.4 Research Objective**

Objectives of the research are as follows:

- To identify the impact of FDI on Private savings of Pakistan's economy.
- To identify the impact of ADR on Private savings of Pakistan's economy.
- To identify the impact of REM on Private savings of Pakistan's economy.
- To identify the impact of INF on Private savings of Pakistan's economy.

#### **1.5 Scope of the Study**

This study is being devised for understanding the determinant of private savings and it will help Pakistan's Economy. This study is aimed to focus on finding the casual relationship existing in the established factors. Geographically it is focusing on Pakistan's Economy. The study's limitation is accessibility and data is collected from online sources as there were limited resources available.

#### **1.6 Limitation of the Study**

From 1975 to 2008, Khan *et al.*, (2013) in Pakistan has investigated impact of various demographic factors on household savings. Co-integration analysis is done in this study. Results of this study have revealed that per capita income, financial systems, education of males and females are significantly and positively related with higher saving rate. Age dependency ratio is although significant but negatively related with household saving rate.

### **2. LITERATURE REVIEWS**

Ahmad and Asghar, (2004) have identified that dependency ratio has negative impact on saving behaviour in Pakistan for both rural and urban areas. It was further identified that the Impact of employment status has reflected that employed individuals have positive savings. Baharumshah *et al.*, (2003) have also investigated saving behaviour in five Asian economies and findings of this study have revealed that impact of dependency ratio was found to be inconclusive long-run but it was positive in short-run on savings behaviour.

Bashir and Faridi, (2011) have also investigated saving behaviour of different income groups in Multan, Pakistan. Results of this study were that factors that cause deduction in savings is educational expense, house vale, family size, and liabilities, whereas, dependency rate and income are the factors that cause increase in saving behaviour.

The study conducted by Gough, (2011) has examined determinants of household saving rate for the economy of United States from 1964 to 2008 through application of Ordinary Least Square linear Regression Technique. Results revealed significant impact of saving on young dependents and old dependents.

Ahmad and Mahmood, (2013) have also conducted a study in which they have attempted to find determinants of national savings during the course of economic growth in Pakistan. ARDL model was applied as bound testing approach for checking robustness within the long-run relationship and ECM was applied for short-run relationship. In the investigation done on data collected from 1974 to 2010, it was found that per capita income had significant but inverse relation with national saving rate in short and long run. Leading further, it was found that the inflation and exchange rate were also impacting national savings negatively, whereas lagged exchange rate had significant impact. For the reason, decrease in capital controls, floating exchange rates and volumes of capital flows internationally has caused increment on significant level.

Further revelation of Ahmad and Mahmood, (2013) has stated that trade openness have positive association with national savings due to trade openness that is able to cause increase in income and welfare of the society. Seigniorage effect is realised as reason that cause positive linkage between Money supply and national saving. Level of income growth is found to be having negative relationship with national savings. It is also found that Keynesian theory and permanent income hypothesis of savings and income are not valid for the economy under question. This is because its per capita income and growth in income has an inverse function of savings.

Pal and Mittal, (2011) have also conducted a study in which they have investigated effect of macroeconomic variables on capital market from 1995 to 2008 in Indian economy. Results of this study have revealed that gross domestic savings and inflation rate have

impact on capital market index but these results might vary in different settings.

In the study conducted by Ahmad *et al.*, (2006) evaluation was conducted for determining the factors of household saving during the course of economic development in Pakistan from 1972-2003. Results of this study have revealed that per capita income, its growth and interest rate is positively impacting the dependency ratios of old and young, whereas inflation rate is impacting negatively the public saving in long-run and short-run.

Shahbaz *et al.* (2010) have conducted a study in which they have investigated relationship between savings and investments during financial liberalization from 1976 to 2006. In this study Ng-perron test was applied for examining the model, ARDL testing and error correction model were also applied for analysing the long and short run aspects. Variables of this study were GDP, GNP, income, public and private savings, effective exchange rate, inflation, and FDI. Results of this study have suggested that capital mobility is not enough in Pakistan and this is the reason that local investors are investing abroad. Gap found between investment and domestic savings might be filled through stimulation of investments within the country.

Chaudhry et al (2010) from (1972-2008), in Pakistan have examined Short run and long run impacts of determinants on National savings. In this study through application of co-integration and error correction model was performed on data. Variables of the study were consumer price index, remittance, interest rate, public loan, government consumptions and Export. Results indicated significant and positive impact of consumer price index and inflation on national savings of Pakistan. Interest rates are also found to have a very direct impact on national savings. The study has suggested implementing stable pricing policies, efforts must be made for increasing exports and government must be less dependent on public loans for national savings.

Khan and Hye, (2010) have also performed an investigation in which relation between household savings and financial reforms of Pakistan were assessed from 1988 to 2008. Application of ARDL cointegration was done on factors; per capita income, GDP of agricultural sector, foreign remittance, dependency ratio, deposit rates (real) and financial liberalisation index for devising inferential

analysis. Results indicated that dependency ratio is affecting negatively on household savings in short-run, while in both short and long run it is being negatively affected by Financial Liberalization Index. At the same time GDP within agricultural sector, remittances and per capita income positively impacting household savings.

The study conducted by Kim, (2010) has related various internal/external factors with personal savings from 1950 to 2007 for United States. Regression analysis was applied on personal saving, tax rate, credit outstanding, young dependency ratio, old dependency ratio, income, employment rate, real interest rate, GDP, recessionary rate and social security. Results of the study have suggested that personal savings are highly dependent on credit outstanding, income, tax, and rate of employment. Effect of current real estate loan, real interest rate was less strong. In the end, conclusion was drawn that US economy is highly dependent on consumers.

Kibet *et al.*, (2009) have conducted a study by focusing on Kenyan economy. In this study microeconomic variables were tested as determinants for household savings through collecting data by using multi stage sampling technique and application of least squares method. Variables in this study were nature of occupation, dependency ratio, income, family head's age and gender, interest rate, transportation cost and access to credit. Occupation nature of household head, income, family head's age and gender, interest rate, transportation cost and access to credit had insignificant impact and interest rate, which has some positive effect on savings.

Another a brief analysis on factors affecting stock prices in Nigerian economy was conducted by Emmanuel and Sameul, (2009) from 1997 to 2006. Application of regression analysis on stock market values (dependent variable) and real GDP, interest rate, inflation and tax rate (independent variables). Results of this study were that real GDP is the most significant variable affecting stock prices, while interest and inflation rate have significant relationship with an inverse effect on stock prices. It was thus recommended that inflation rate is too high and strategies must be formulated for reducing it. At the same time, interest rate must be much more stable for achieving better living standards and improved infrastructure.

Ahmad *et al.*, (2006) have examined impact of various factors on household savings behaviours of Pakistan from 1972 to 2003. In this investigation statistical analysis applied were co-integration

technique and error correction model. Results of this study show an inverse relation of personal and household savings, inflation rate and demographics. Further investigations have revealed that income and economic growth variables have positive effect.

Masson *et al.*, (1998) have conducted an examination in which factors affecting private savings in industrial and developing countries from 1982 to 1993 were investigated. T-test and OLS regression was applied on this study data. Variables were growth rate of GDP, per capita GDP, interest rate, government budget, demographics, dependency ratio, and trade terms. Result of the study has revealed that there is partial compensation on private savings. Factors that are influential are demographic, at the same time terms of trade and interest rate are positive but less influential factors.

Muradoglu and Taskin, (1996) have examined household saving behaviours from 1975 to 1989, through application of regression analysis. In this study, dependent variable was household saving/household disposable income and independent variables were; per capita income, per capita household income, real interest rate, foreign saving/income, inflation rate and dependency ratio. Three factors were found to have significant impact and it was thus concluded that there is lots of difference in saving behaviours throughout the region. Future implications of this study were that there is possibility that threshold data and other possible factors might be influencing savings, those might be investigated in future.

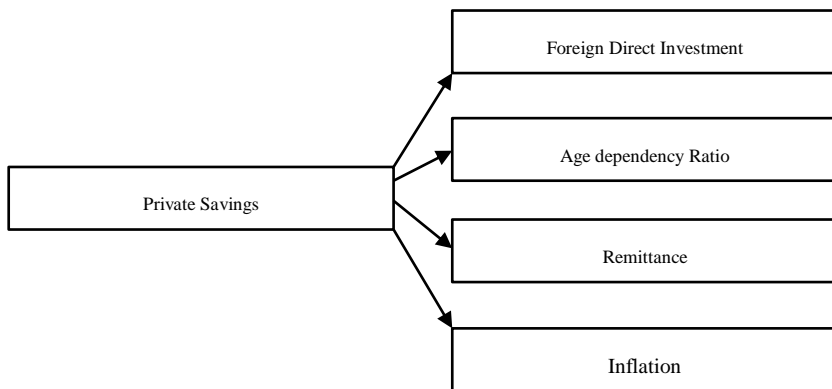
In the research conducted by Ahmad and Ahmed, (2002), domestic savings and foreign capital inflows of Pakistan were analyzed from 1972 to 2000. This was done through application of three variants of co-integration techniques on the data (time series in nature). In each case, valid long-run relationships in variables were detected. These variants have also detected that inverse relationship is existent between rate of savings and foreign capital inflows. Short-run relation between variables was negative. Finding of this study have supported substitution thesis hypothesis, which states that foreign capital are able to act as substitute to domestic savings. Another explanation, which attracted attention, is, by making resources available, external flows allow more relaxed saving effort and this support increase in consumptions and consequently external flows become likely to slow down public and private savings.



Raut and Virmani, (1990) have also analysed factors influencing consumption and savings for the period of 1973 to 1985. There were twenty three countries that were part of the analysis and random-walk hypothesis of Hall were formed. For the investigation of relation among proposed variables, Regression analysis was used. Findings of this research have revealed that on consumption, there is a positive effect of interest rate and negative effect of inflation.

## 2.1. Conceptual Frame Work

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## 2.2 Hypotheses Formulation

H1: There is a significant impact of FDI on Pakistan's Private Savings.

H2: There is a significant impact of ADR on Pakistan's Private Savings.

H3: There is a significant impact of Remittance on Pakistan's Private Savings.

H4: There is a significant impact of INF on Pakistan's Private Savings.

## 2.3 Variable Identification

### Dependent variable

Private Savings

### Independent variables

Foreign Direct Investment (FDI)

Age dependency ratio (ADR)

Remittance (REM) and

Inflation (INF)

### **3. METHODOLOGY**

#### **3.1. Type of Research**

In this quantitative research analysis of Numeric data is done through statistical model application. The approach applied in this study was Deductive approach and we are dealing and testing existing theory parametric form of data.

Additionally, this research is a descriptive cum Explanatory research. Application of descriptive statistics allows the researcher to explain the data. Later on, through application of explanatory research relation between dependent and different independent variables is investigated.

#### **3.2. Data Source**

Data for this study is collected through online sources. Electronic copies were obtained through the official World Bank website and Pakistan's economic survey. This study is utilising secondary data, which is available on different websites.

#### **3.3. Sample Size**

According to the study's focus, for this research data collected is of Pakistan's economy. Annual data of past thirty (30) years has been selected by the researcher i.e. from (1990-2019).

#### **3.4. Statistical Technique**

SPSS 19.0 has been used for descriptive and Regression analysis of metric data. By the application of descriptive analysis, the researcher is able to explain data rigorously and the application of Regression analysis helped in checking out the relationship existing between selected independent and dependent variables.

### **4. ANALYSIS**

In this chapter, findings gathered through application of statistical model are postulated and explained.

**Table 1.**

	N	min	max	mean	SD
PS	30	1.84669	22.0597	11.0764	5.92561
ADR	30	61.82615	90.33465	80.77531	9.90464
REM	30	1.45364	8.28461	4.37496	1.88317
FDI	30	0.17819	3.66832	1.0363	0.87568
INF	30	2.46309	24.8912	9.80437	5.18898

$$PS = \alpha_0 + \beta_1 GDP + \beta_2 REM + \beta_3 FDI + \beta_4 INF + \varepsilon$$

In the above table, sample size (N) represented is 30. All minimum values of independent and dependent variables are shown in “Min” i.e. 1.84669, 61.82615, 1.45364, 0.17819 and 2.46309 for PS, ADR, REM, FDI and INF. Maximum values are shown by “Max” i.e. 22.059 for PS, 32.287 for ADR, 90.33465 for REM, 3.66832 for FDI and 2.46309 for INF.

Average value of all variables is represented by “Mean” in the table. It shows mean values of average PS, ADR, REM, FDI, INF of Pakistan in the past 30 years i.e. 11.0764, 80.77531, 1.88317, 1.0363 and 9.80437 respectively.

Standard deviation (SD) in the table shows the extent of deviation of variable from its mean value. It shows PS has 5.92561, ADR has 9.90464, REM has 1.88317, FDI has 0.87568 and INF has Standard deviation of 5.18898.

**Table 2.**

Summary of Model				
Model	R	R Square	Adjusted R square	Std. Error of the Estimate
1	.737 <sup>a</sup>	.543	.533	1.23969

The above table “Summary of Model” is reflecting the relationship strength existing b/w the model and dependent variables. Linear correlation b/w the values predicted and observed by the model for dependent variables is shown by the coefficient of multiple correlations “R”, having a large value of 0.737 showing a strong relationship. “R square” represents the coefficient of determination, which is obtained by squaring the value of multiple regression coefficient showing 54.3 percent of variation in the dependent variable.

**Table 3.**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.512	1	87.512	56.942	.000 <sup>b</sup>
	Residual	73.768	48	1.537		
	Total	161.280	49			
a. Dependent Variable: Performance						
b. Predictors: (Constant), Strategies						

The above ANOVA table shows statistical view of acceptability of model represented by “F” and its value is 56.942, showing a significant relationship in this case. The model is explaining another observation that is variation. The significance value of F statistic is 0.000 and it is less than 0.05, shows that the model explaining the variation is not due to chance.

**Table 4**

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.815	0.854		3.298	0.002
	Strategies	0.627	0.083	0.737	7.546	0.000
a. Dependent Variable: Performance						

The above table “Coefficients” is reflecting the significance of independent variables. The variable’s (strategies) T value is greater than the Sig. value, suggesting the significance of variable. Beta value is suggesting that in independent variable, a 1 unit change will bring about beta 0.627 times change in dependent variable(performance).

**Table 5**

Variable	Coefficient Beta	t-Statistic	P-value
Constant	62.856	5.763	0.000
FDI	1.108	2.887	0.008
ADR	-0.592	-5.259	0.000
REM	-1.004	-5.902	0.000
INF	0.029	0.497	0.624

Coefficient beta reflects tendency of independent variables in response to dependent variables. Higher value reflects high impact of independent variables on dependent variables and small values reflect lower impact. While negative values show inverse relation. Coefficient beta of variables was; FDI (1.108), GDP (-0.592), REM (-1.004) and INF (0.029).

The P- value is less than 0.05 showing a significant relation among the variables, while P- value more than 0.05 is showing insignificance. The P- values of FDI, ADR and REM are 0.008, 0.000 and 0.000 respectively. This is reflecting their significant relation with Privates savings. These results are showing that if there is an increase in FDI than PS also increase. This is an understandable relation, whenever foreign companies come for investing in any country, level of employment increases and this cause increment in private saving of the those employees. However, in spite of significant relation with private savings, nature of relation is negative for both the variables; ADR and REM.

This is indicating that increase savings are the result of decrease in the age dependency ratio (ADR). This is one again an understandable relation, because if number and kids and old people are less in a family than it shows that more individuals are able to rely on themselves and are not dependent of others. This relation can be due to two important reasons, child labour and early deaths. Dependent who are below fifteen years of age are working in Pakistan in a huge population, at the same time, mortality is decrease drastically due to law and order and poor health conditions of people. Coming to REM, this one shows that a decrease in remittance cause increase savings. This also understandable because, in various cases families of individuals who are working abroad are found to be more extravagant as compare to the families of individuals who are earning and living within the country.

P-value of INF is 0.624; this represents insignificant relation with Private savings. This finding is although contrary from most of the previous researches, but in spite of that, it can be justified in Pakistani economy. In Pakistan, there is a huge population of individuals who are living below poverty line and income distribution among population is highly unequal. Due to this, people who are poor are busy in fulfilling their basic needs and savings are out of question for them. At the same time, individuals who are extremely rich are

also saving unintentionally and inflation is unable to affect their saving due to extraordinary income.

## **5. CONCLUSION AND RECOMMENDATION**

This research is conducted for investigating the important factors that are able to influence private savings in the economy of Pakistan. In this study, four hypotheses were formulated out of which, one hypothesis is rejected and three are accepted.

Results of the study have indicated that the three factors i.e. Foreign Direct Investment (FDI), Age Dependency Ratio (ADR) and Remittance (REM) impacting significantly on Private Savings (PS), while inflation is having an insignificant relation with Private Savings.

Impact of FDI is significant and positive, showing that increase in private savings is a result of increase in FDI. After these findings, it can be stated that increment of FDI is desirable and it can be achieved through stable political situation of the country, as this will make the image of the country better and foreign investors will be more interested to invest where their investment is not under immense amount of risk.

Impact of ADR is significant but negative, this means that decrease in ADR will result an increase in private savings and it is needed to be sure that this decrease is not due to child labor or bad condition of health. Better policies must be made by the government to take better care of all these dependents effectively.

Impact of REM is significant but negative, this means that decrease in REM is going to cause an increase in private savings. Normally, remittance is a factor responsible for strengthening an economy, but here in this case of Pakistan, ineffective use of remittance is resulting in negative relationship, so there is need to prioritize the needs and wants. The effective use of remittance must be ensured by its receivers and they should not waste it. Government should increase taxes on remittance inflow and should also make sure that there are no false channels for sending the remittance.

Pakistan's economic inflation is a big issue and the insignificant relation b/w private savings and inflation is showing two extreme situations i.e. poverty and extreme richness which are on

hype in this economy. Policies focusing on equal wealth distribution in this economy must be made.

In the end, the research implications for future are that it can be continued in future by considering numerous other economic factors which are not included in this investigation. A cross sectional study by considering more than one economy can also be devised, this will allow to develop more in depth knowledge analysis through comparative analysis.

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