

# ANALYZING THE DETERMINANTS OF HOUSEHOLD'S SAVING BEHAVIOUR IN PAKISTAN: A THEORITICAL APPROACH

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## ABSTRACT

*The paper attempts to investigate the determinants of savings by the households in the emergent economies like Pakistan. For this rationale the data of five years (time series) has been collected from different sources likes the Pakistan economic surveys, World Bank and the annual reports of the State Bank of Pakistan. The major variables have been selected due to the time constraint and secondary data is used. Simple OLS regression technique is applied to check the significance of the data. Before running the regression the data is checked for the stationarity and unit root by the econometric package Eviews version 5.0. It is found that employment and income of the house holds have the significant and positive relation on the saving behavior while the tax burden and the inflation have the significant but negative relation with the savings. The coefficient of correlation  $R^2$  is found out to be 0.99 which shows that there is a very strong association among the exogenous and indigenious variables. Keeping in view the key role of national savings in the micro and macro economic stability government should give importance to national savings for sustainable and debt free economy by considering the key variables that are discussed in this paper.*

**Key Words:** Life-Cycle Hypothesis; literacy, Income, Household, Family size; Marital status, dependency ratio, expenditure.

## INTRODUCTION

According to the economic theory regarding the household's saving, it can be given as the disparity between household's income(Y) and consumption(C) expenditure. Income of household which is being earned from all the possessions during a time of one year. The major sources of earnings could be wages, business revenue, corporate profit, interest receiving, earning from farmstead production, crop's earnings etc. Consumption can be stated as the entire quantity of tangible and intangible things that are used up by the households during a single year. In consumption expenditure there include the expenses on food, garments, shelter, rent out, schooling, utility bills, wandering, occasions, medical, recreation/entertainment and charity etc. Savings might be in the shape of many additional causes like real estate, jewels, bank balance and share in the capital markets, live stocks, agricultural fertile land etc.

The "Life Cycle Hypothesis (LCH)" is an economic notion which analyzes the individual's consumption patterns. The life cycle hypothesis tells that people plan their consumption expenditure and savings attitude over a long term period and aim to smooth out their consumption patterns in the best imaginable manner over their life

suggest that they typically do not save much in one period to spend energetically in the other time period, but keep their consumption level almost the same in every time period, (Deaton and Modigliani (2005). "The Life Cycle Theory of Consumption". Gersovitz (1988), supposed that in order to represent the progress of developing economies, the mediator track is more expressive than substitute steady states. According to Solow (1956), proposed that savings persuade the growing of the state's economy as in economic theory postulates that high saving rate lead to capital increase and thus economic development.

### **Saving in Pakistan:**

Pakistan is confronted with many serious problems in the current years. The image regarding the economy of Pakistan is very much apparent from the figures of 1970's in which the growth rate was 4.80% of the GDP at the mean time total national investment was 17.1%, general savings was 11.2%, foreign savings were recorded to be 5.8% and domestic savings were 7.4% percent of the gross domestic product (GDP). During 1980's expansion frequency of Pakistan's economy was very high i.e. 6.5% which was due to relatively more investment between 17.11% to 18.71% of the GDP, similarly comparatively high domestic savings from 11.20% to 14.80% of the Gross Domestic Product and very amusingly less foreign saving rate from 5.8% to 3.9% of the country's GDP. In the year 2003, Pakistan had attained a relatively high growth rate of 7.5% that shows an ideal condition of the country. In that year the foreign exchange saving was negative figure and extraordinary domestic saving rate. But after the FY 2003, foreign exchange saving has happening rising while domestic savings were dropped to 9.91% of GDP and Pakistan had achieve expansion degree of just 4.1 %. That is comparatively low due to the less national savings. If we take a bird's eye view on the history of Pakistan we come to know that domestic household saving have been playing a vital part in capital accrual and achieving high growth rate. In Pakistan there is a positive relation between the domestic savings and capital increase. If one decrease another also decrease and vice-versa.

Many studies concerning the household saving behavior have been carried out at large-scale in Pakistan, having different demographic and socio-economic variables. The purpose of this study is the examination of the determinants of the household savings at micro level, Hafeez (2010).

To one side from the introduction, the remaining part of the research will be set as following: section 2 will describe review of the literature; in section 3 the data sources and organizational issues will be discussed while results will be interpreted in section 4 and finally, results and policy recommendations will be stated in section 5.

### **LITERATURE REVIEW:**

In the recent fiscal years, little research has been presented covering the concept of saving behavior in developing countries, mainly using the data of time series or panel

while some has used the cross- section data. Despite that this topic is necessary to be discussing more at micro/macro level in order to reach to the concrete policy framework in the future. Taking in sight the importance of household saving manner in Pakistan, some pragmatic evidences from the Pakistani economy are review here.

Keynes (1940), acknowledged that savings be influenced by the disposable or throwaway money income. Duesenberry (1949), anticipated about saving that is a function of the proportion of income to preceding lag year income. Moreover Friedman (1957), hypothesize that savings of households are mainly dependent upon their permanent income. Modigliani (1963), suggested that the households do not save much in their early age below 16 years and old age i.e. after 65 years, but they saved more in between these two boundaries.

Davidson and Mackinnon (1983) stated two principle challenging theories of less hike in prices that disturb the saving proportions in order to understand whether one or both the theories could be revealed to be false. They had used accustomed quarterly data in their research. Starting from the 1st quarter of fiscal year (FY) 1954 to the 4th quarter of year 1979 regarding Canada and United States of America. They test their model by choosing the endogenous variables like individual consumption, disposable income and individual savings. The study establishes a positive association between the rate of interest and saving in Canada and US.

Bautista et al. (1990), had explained the relative saving manners of rural-urban individuals in Philippine. The survey for family income and Expenditure of the FY 1985 was used as a major source of data. Random sample of 16971 households were carefully chosen from twelve different areas of Philippines. Their result postulated that income is positively affecting the savings, the dependency-ratio (DP) was established to be influence negatively upon the savings in almost all regions. The MPS was ranging between 0.33 - 0.775 based on Permanent Income hypothesis model for the whole country of Philippines. It also recommended that the value of MPS for permanent income was 0.2 to 0.5 and for temporary income the MPS was ranging between 0.4 to 0.8.

Burney and Khan (1992), tested the impact of a variety of social, economic and demographic related factors on individuals' savings inside Pakistan. They used primary data source of the household having the sample of 16580 individuals in which 7443 belongs to urban area while 9104 were rural dwellers of the country. The data was gathered from the Household Integrated Economic Survey (HIES) conducted in FYs of 1984 and 1985. The Ordinary Least Square Methodology (OLS) was used for estimation because it gives unbiased estimates. The study resulted that income, the earning of household head, the type of profession of household head and the square of the age of household's head were originate to be definitely correlated while the inverse of household money income the dependency-ratio, educational qualification of household's head, employment type and secondary/spouse participation in earnings of the household head and the age of individual were originate to have a negative

correlation compared to the household saving behavior in both city and pastoral areas of Pakistan. It may also be explained that the of tendency to save was 0.2 in urban area while 0.4 in the pastoral area of Pakistan.

Nasir et al. (2004) checked the conduct of saving-investment in Pakistan by means of suitable econometric and statistical methods and tried to develop a model on the root of basic theories regarding saving and investment of the households. They gathered the data set composed of 1971 to 2003 from the Economic Surveys of Pakistan (various issues). The ordinary-least-squares method (OLS) was the technique used for model estimation. The homework resulted that government expenditures, development frequency of GDP of the country and foreign cash inflow were optimistically and expressively affecting the domestic savings.

Brata (1999), analyzed the behavior of saving regarding the rural industry workers households. The author carried out his study of about 93 households in FY 1996 from the district and some areas under Bantul district. Study stated that the household's disposable income, education, gender and industry nature had a optimistic impact on individual savings. Age square, age (for testing long term relationship) and the function of industry income has no impact on the saving of household. It was stated that the government should build up rural industries in order to increase savings and convey glory for rural industries.

In my research I will used micro level data collected primarily through pre-tested questionnaires from the respondents. In order to make my results more accurate a major variables that might affect the saving behavior of people are included. In contrary to the other studies I will carry out my research on district level.

### HYPOTHESES:

Let assume that there is a household whose expectation is that he might alive for next year "t" from now and will have wealth say "w". He also supposes to earn money income say "y" until he get retired say years "r" from now. In this condition the household possessions over his lifetime made up of his early transfer of his wealth "w" and his lifetime earnings say "r.y". In addition to that the interest rate is assumed to be zero. If the rate of interest is a positive figure then it should be consider for the interest gathered upon savings of the households.

The consumer can disburse his lifetime resources during the remaining "t" years of his life span. He divides (w + r.y) alike among the years "t" he consumes i.e.

$$C = (w + r.y) / t \quad \dots (i)$$

Where "Con" denotes the consumption of the household

The consumption function of this person can be written as:

$$C = 1/t. w + r / t .y \quad \dots (ii)$$

It is considered that every individual plans his consumption expenditure in this way so the total consumption function will be very similar to the individual function of the households. Thus, the total consumption function of the economy will be given as follows:

$$C = \alpha.w + \beta.y \dots\dots (iii)$$

Where  $\alpha$  = marginal propensity to save (MPC) of wealth,  $\beta$  = MPC of income.

**H1** = income and growth variables has a positive impact on savings.

**H2** = life cycle hypothesis is well- Matched with the saving behavior of the people in Pakistan.

**Data sources:**

The major source of data for this study is the Pakistan Integrated Household Survey (PIHS). It has various issues but my study will be based on the particular year survey mentioned earlier. It constitutes the total sample of five years time series data. The over all sample is being divided between rural and urban households. To estimate the model based on the econometric study the micro level data is taken from the official website of Federal Bureau of Statistics (FBS), Islamabad, World Bank data series and the State Bank of Pakistan annual reports. FBS is based on the data sets of the PIHS i.e. Pakistan Integrated Household survey.

**The Model:**

Following the previous researches on the saving behavior of people in Pakistan slight changes in the variables is being made in order to bring about more significant results. The variables that are taken as endogenous are per capita income of households (PI), inflation rate (INF), employment status (ER), and tax burden (T) while savings of households (HS) is taken as the exogenous variable in the model. The econometric model will be use as following:

$$HS = \alpha_0 + \alpha_1 PI + \alpha_2 INF + \alpha_3 ER + \alpha_4 T + \epsilon$$

**THEORETICAL FRAMEWORK**

**Per capita income:**

Income is a very important factor in determining the saving behavior of any household. Per capita income is the total income earned by the nation divided by the total population of that nation. In economics more income refers to more saving, keeping other things remain constant.

In the above equation, DR is dependency ratio, HS is household size and NE is number of earners in the family.

**Employment:**

This factor is also credit worthy in order to measuring the determinants of savings. The impact of employment is ambiguous on the saving behavior of the households. Burney and Khan (1992). Self employed people save more in the countries like Indonesia and India Snyder (1974). Employment factor id significant in rural population while it is

insignificant in urban population.

### **Inflation Rate:**

Inflation means the persistent rise in the prices of the goods. In Pakistan the problem of inflation is very severe. More inflation people will consume more because of the rise in the prices of the good and decreasing in the money value, (Fisher Quantity Theory of Money) and hence the saving will be less. So there is a negative relation between the inflation and saving rate of the people.

### **Tax burden:**

Taxes are the compulsory payments made towards the government in order to make the expenditure of the government possible. There fore government imposes taxes on the citizens in many shapes. In Pakistan the tax system is not so smooth so any tax imposition creates problems for a common man. There is a negative relation between tax and savings because new tax burden causes an extra expenditure for the household.

## **SOME OTHER THEORETICAL FACTORS OF HOUSEHOLD'S SAVINGS**

### **Age of the household head:**

Akhtar (1987), examined that there is a relation between the age of household head and saving rates. As the age of household id going to increase the head tries to save more for the old age expenses and keeping in view the expenditures of his children.

### **Dependency ratio:**

There are two types of dependencies i.e. of young age and old age. In literature dependency ratio is the rate of population aged below 14 to that of population aged above 65 years. Leff (1969) was a pioneer in developing negative relationships between the saving rate and dependency ratio. According to Leff (1969) the children below 14 and people above 65 years contribute nothing to the saving rather they just consume but his perception can't be accepted fully as there are many countries where the children are measured to be the assets of the state.

Dependency ratio is also defined by Burney and Khan et al. (1992) as:

$$DR = (HS - NE) / HS$$

### **Sex/Gender of the household head:**

In the countries like Pakistan if the household head is male then he can do work outside even he can go abroad and send the foreign exchange but if the household is a female then it will be a bit difficult for her to go outside and earn for her family.

### **Spouse participation:**

If there are some other earners in the family other than that of the household head then there is a positive increase in the household income. As it is earlier mentioned that more income brings about more savings. So spouse participation has a positive impact on the savings of the household.

### METHODOLOGY

In order to test the households saving behavior in Pakistan, The authors practiced the following econometric model.

$$Y_i = f(X_1, X_2, X_3, \dots, X_n)$$

$Y_i$  is a dependent factor which is individual's saving in this study.  $X_1, X_2, \dots, X_n$  are self-determining variables. The multiple regression model is given as follows:

$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon_i$$

Where,  $\alpha$  is intercept and  $\beta$ 's are the coefficients of  $(X_1, X_2, \dots, X_n)$  while  $\epsilon_i$  is the stochastic term. The regression equation sometimes have the econometric disorders like multicollinearity, heteroskedasticity, autocorrelation and unit root that is examined and removed during the process of estimation by applying different test.

The following model is estimated:

$$HS = f(PI, INF, ER, T) \dots \dots \dots (I)$$

Multicollinearity is very harsh problem about OLS Methodology. If the coefficient of correlation among the variables is in excess, so there is severity of multicollinearity as stated by Gujarati (1995). It has to be removed by reducing the multicollinear variables from the regression model until the result become significant. Heteroskedasticity is search out by White test using E-Views package version 5.0. This problem is detached by the application of Standard Errors & Covariance test from E.Views package version 5.0, Heij et al. (2004), the problem of autocorrelation in regression model regarding the primary or cross sectional data is not a severe problem as stated by Greene (1992). This study is based on the Life-Cycle theory presented by Modigliani et al. (1963). To check the determinant variables of Household Savings (HS), I estimate the model given in equation (I). By running the OLS estimation technique.

#### Empirical results and analysis:

| variables         | t-stat*  | coefficients |
|-------------------|----------|--------------|
| constant          | 1.079621 | 1.319307     |
| Per capita income | 0.69422  | 0.01128      |
| inflation         | -0.81125 | -0.03289     |
| Employment rate   | 0.9096   | 0.25744      |
| taxes             | -54.1636 | -2.492606    |

**R<sup>2</sup> = 0.999921**

\* All values are checked at 5% level of significance.

The result of OLS regression is highly significant as shown by the R<sup>2</sup>. As stated earlier that the coefficients of per capita income, and employment rates are significant and positive. It means that there is a positive relation between the savings and per capita income of a household. As the income of a person increases the saving rate also increases and vise versa.

Employment rate also comes up with the positive sign. As the employment in the country increases people find more ways to earn and hence they can save as well. In Pakistan unemployment is a main issue that creates hurdles in the way of savings.

Inflation is one of the major variables that barred the saving nature of the people. With the increase in the rate of inflation people can't afford the commodities in lower prices. They purchase the same quantity of a product in relatively high prices. Therefore due to the lower purchasing power of money the people can't save up to the extent.

Paying tax is the compulsory duty of each and every citizen of the country but in Pakistan the tax burden is far more than then a common man can bear. That is why as the tax burden increases the saving rate will be declining.

Similarly some other theoretical variables like dependency ratio also have a negative relation with that of saving nature of the households, Siddique (1993). Moreover Leff (1969) was the first who detect the negative relation between savings and dependency ratio.

### **CONCLUSION AND RECOMMENDATIONS:**

Saving is the integral part of the household's income. In economic theory a part of income that is not consumed is saved. The savings play an important role in the economic prosperity and growth of a country. The growth in the economy requires capital so that it may be invested and that capital will be provided by the savings. The nation in the long run rely on domestic savings so our study has high lighten some key factors that highly affect the saving behavior of the people especially in the developing country like Pakistan. This paper analyzes the data during 2005-2010 and found that employment and income has a positive relation with the savings of the people while tax burden and unemployment reduces the savings of the people. As the savings are the vital factor in the escalation of any economy, therefore some policy recommendations are given as follows:

1. Government should provide the basic elementary education to the rural residents so that these people should find better job opportunities in the future.
2. Government should provide micro-level loans to the farmers and also to those who want to start business of their own.
3. Scholarships should be provided to the students for achieving higher level education.
4. Tax burden should be reducing by applying the progressive taxation system in the country.
5. Different population control program should be launched and also the people must be provided with the basic needs of life.

### **Scope & limitation of the study:**

In developing countries the people are comparatively belongs to the middle class. Due to this they are not succeeding in saving more. This study will be carried out considering the secondary data in order to achieve the best significant result based on the core variables.

Due to the great disparity among the population, two main sectors of the house holds are selected to test my hypothesis. Because of the almost same living status of the people existing in the rural regions, this research will also justify that either the results postulated by the HIES based on the population of developing countries has any similarity with this study? Although there might be a little ambiguity in some socio-economic variables as this survey is being conducted on the disperse population. Time constraint is the main factor as more time is needed to inspect the variables in deep so that there is little chance of error in the data. These type of uncertainties shall be considered as the limitation of this research. Some other social and economic variables might be use to sort out more precise results.

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