

ANALYZING THE DETERMINANTS OF HOUSEHOLD'S SAVING BEHAVIOUR IN PAKISTAN

Abdul Mansoor, Lecturer, Economics.

IQRA National University, Peshawar, Pakistan.

Email: iiui.mansoor@gmail.com phone: +923339426436

Supervised by Head Publishing DPT, IIIE, IIU Islamabad, Pakistan.

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 like 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 households 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 indigenous variables. Keeping in view the key role of national savings in the micro and macroeconomic 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; household savings, savings behavior, national savings; dependency ratio; family size

1. Introduction

According to the economic theory regarding the household's saving is the disparity between household's income and consumption expenditure. A household's income is the earnings from all the possessions during a year. Sources of earnings can be wages from Job, business turnover, corporate profit, interest earning, earning from farm production, crop's earnings etc. Consumption can be stated as the total quantity of goods and services that are consumed by the households during a year. In consumption 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 other sources like real property, jewelry, bank balances, shares in the capital markets, live stocks, agricultural fertile land etc.

The "*Life Cycle Hypothesis*" (*LCH*) is an economic concept analyzing individual consumption patterns. The life-cycle hypothesis tells that people plan their consumption expenditure and savings attitude over the long term period and intend to smooth out their consumption patterns in the best possible way over their life span. The main hypothesis is that people choose to maintain even life styles. This suggests that they usually don't save a lot in one period to spend furiously in the other time period, but maintain their consumption levels approximately the same in every time period, (Angus Deaton, Franco Modigliani (2005).

Gersovitz (1988) supposed that in representing the progress of developing countries, the mediator path is more meaningful than substitute steady states. According to Solow (1956), suggested that savings persuade the growth of the state's economy as in economic theory postulates that high saving rate lead to capital increase and thus economic development.

1.1 Saving in Pakistan:

Pakistan is confronted with many serious problems in the present era. The image of the Pakistan's economy 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). In 1980's expansion rate of Pakistan was very high about 6.5% which was due to relatively more investment from 17.11% to 18.71% of the GDP, similarly comparatively high domestic savings from 11.20% to 14.80% of the GDP and very amusingly less foreign saving rate from 5.8% to 3.9% of the GDP. In the FY 2003, Pakistan had achieved a relatively high growth rate of 7.5% that shows an ideal situation of the country. In that year, foreign saving was negative and very high domestic saving rate. But after the FY 2003, foreign saving has happening rising while domestic savings were declined up to 9.91% of GDP and Pakistan had achieve expansion rate of just 4.10%. That is comparatively low due to less domestic savings. If we take a bird's eye view on the history of Pakistan we come to know that household savings have played a vital role in capital accrual and attaining high growth. 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 regarding Household's saving behavior have been carried out at large-scale level in Pakistan having different demographic and socio-economic variables. The

purpose of this study is to examine determinants of the household's savings at micro level (Hafeez 2010).

Apart from the introduction, the remaining part of the research will be set as follows: section II will describe review of the literature; in section III the data sources and methodological issues will be discussed while results will be interpreted in section IV and finally, results and policy recommendations will be stated in section V.

2. Literature Review

In recent years, only some studies have 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 solid policy framework in the future. Keeping in sight the importance of households saving behavior in Pakistan; some pragmatic evidences from Pakistan's Economy are review here.

Keynes (1940) acknowledged that savings depend upon disposable/throwaway income. Duesenberry (1949), anticipated that saving is a function of the ratio of income to previous lag year income. Friedman (1957), hypothesize that savings are depends upon permanent income. Ando and Modigliani (1963) suggested that households did not 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 affect the saving rates in order to see whether one or both the theories could be shown to be false. They used adjusted quarterly data in their research from 1st quarter of fiscal year (FY) 1954 to 4th quarter of FY 1979 for 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 interest rate and savings rates in Canada and US.

Bautista et al. (1990) explained the relative saving manners of rural-urban individuals in Philippine. Family Income and Expenditure Survey for the FY 1985 was used as data sources. Random sample of 16971 households were selected from twelve different areas of Philippines. Their result postulated that income is positively affecting the savings, the dependency ratio (DP) was found to be influence negatively the savings in almost all regions and MPS was ranging from 0.334 - 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 0.22 to 0.55 and for temporary income the MPS was ranging from 0.39 to 0.80.

Burney and Khan (1992) tested the impact of a variety of social, economic and demographic related factors on individuals' savings in Pakistan. They used primary data source of the household having the sample of 16580 individuals out of which 7443 belongs to urban while 9104 were rural dwellers. 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, household head's earning status, type of profession of household head and the age square of household's head were originate to be positively correlated while the inverse of household's income, the dependency ratio, educational qualification levels of

household's head, employment level type and secondary/spouse participation in earnings of the household and the age of individuals were originate to have negative correlation with households saving behavior in both city and pastoral areas of Pakistan. It was also explained that the propensity to save was 0.221 in urban area while 0.37 in the rural area of Pakistan.

Nasir et al. (2004) checked the behavior of saving and investment in Pakistan using suitable econometric and statistical technique and tried to generate a model on the basis of basic theories of saving and investment. They gathered the data from 1971 till 2003, from the Economic Surveys of Pakistan. Ordinary Least square Method (OLS) was the technique used for model estimation. The study resulted that Government Expenditures, development rate of Gross Domestic Product of the country and foreign cash inflow were optimistically and significantly affecting the national savings.

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

3. Hypothesis:

Let assume that there is a household whose expectation is that he might live for next "*t*" years from now and will have wealth of "*w*". He also expects to earn income "*y*" until he retires "*r*" years from now. In this situation the household resources over his lifetime made up of his initial transfer of wealth "*w*" and his lifetime earnings of "*ry*". It has to be added that the interest rate is assumed to be zero. If the interest rate 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 + ry*) equally among "*t*" years he consumes:

$$\text{Con} = (w+ry) / t \dots\dots(i)$$

Where "Con" denotes the consumption of the household
 The consumption function of this person can be written as:

$$\text{Con} = 1/t. w + r /t .y \dots\dots\dots (ii)$$

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:

$$\text{Con} = \alpha.w + \beta.y \dots\dots (iii)$$

Where α = marginal propensity to save (MPC) of wealth, β = 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.

3.1 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 overall 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.

3.2 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:

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

3.3 Theoretical explanation of the econometric variables:

a. 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.

b. 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 is significant in rural population while it is insignificant in urban population.

c. 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.

d. Tax burden:

Taxes are the compulsory payments made towards the government in order to make the expenditure of the government possible. Therefore 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.

3.5 Some other theoretical factors of household's savings:

a. 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.

b. 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:

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

c. 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.

d. 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.

3.6 Methodology:

In order to test the households saving behavior in Pakistan especially in Swabi district, I will practice the following regression model.

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

Y_i is dependent/exogenous factor which is individual's saving in my study. X₁, X₂, ..., 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, α is intercept and β_i 's are the coefficients of (X₁, X₂... X_n) while ϵ_i is the stochastic random term. The regression model sometimes have the econometric disorders like multicollinearity, heteroskedasticity, autocorrelation and unit root that is investigated and removed during 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 of 0.80 then 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). Autocorrelation problem in regression model in 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 Ando and 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.

4. 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

$R^2 = 0.999921$

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

The result of OLS regression is highly significant as shown by the R^2 . 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 vice 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.

5. 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.

5.1 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 households 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.

References

- Akhtar Sajjad (1986). Saving income relationships in urban Pakistan: evidence from HIES 1979. *Pakistan journal of applied economics* 5:1
- Ando, Modigliani, F. (1963). The life Cycle hypothesis of saving: Aggregate Implications and tests. *American Economic Review*, pg. 55-84.
- Azhar, B. A. (1995). Rural Savings, Their Magnitude, Determinants, and Mobilization. *Pakistan Development Review*, 34(4), pg. 779-788.

- Burney and Khan (1992). Socioeconomic Characteristics and Household savings: An analysis of the Households' Saving behavior in Pakistan. *Pakistan Development Review*, 31(1), pg: 31-48. Saving and Development. Handbook of development economics. By Gersovitz, M. (1988). Edited by H. Chenery and N.T. Srinivasan. Amsterdam: Elsevier.
- Gujarati, D. N. (1995). *Basic Econometrics*. McGraw Hill, Inc. 3rd Edition. New York, USA.
- Hafeez ur Rehman, Imran S. Chaudhry, M. Zahir Faridi, Farrukh Bashir (2011). *A Research Journal of South Asian Studies Vol. 26, No. 1, pp. 19-35.*
- Hasnain, M., Atiq, Z., Alam, S. and Butt. M. S. (2006). The impact of demography, growth and public policy on household savings: A case study of Pakistan. *Asia-Pacific Development Journal*, 13(2), pg: 57-71.
- Mehboob Ahmad & Tasneem Asghar (2005). *The Lahore Journal of Economics*, Vol.9, No.2
- Pakistan Economic Survey, Ministry of Finance. Islamabad. (various issues)