

Socio-economic Characteristics and Household Savings: An Analysis of the Households' Saving Behaviour in Pakistan

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Domestic resource mobilization is one of the key determinants of sustained economic growth. Pakistan's performance with regard to domestic resource mobilization has been poor despite maintaining a respectable economic growth rate. Why is the savings rate so low in Pakistan? In this paper we analyse the household savings behaviour in Pakistan, using micro level data of the Household Income and Expenditure Survey (HIES) for the year 1984-85. Three different non-linear savings functions attributed to Keynes, Klein, and Landau are estimated separately for the urban and the rural households, using the Ordinary Least Squares (OLS) technique. It is found that the average income and saving of an urban household are considerably higher than those of overall Pakistan or a rural household. However, contrary to the general belief, it is found that the propensity to save of the rural households is much higher than that of their urban counterparts. The dependency ratio and the various categories of education are found to have a negative influence on household savings. No systematic relationship is found between savings and the employment status and occupation of the household head. It is found, however, that saving increases with age but tends to decline when the age crosses a certain limit - a finding consistent with the Life Cycle Hypothesis.

I. INTRODUCTION

During the last two decades, Pakistan's saving rate has remained very low both in absolute terms and relative to other countries at similar stages of development.¹ A variety of reasons, ranging from the socio-cultural to the purely econom-

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¹For instance, domestic saving rates for Pakistan in 1970, 1980, and 1988 were 9.4 percent, 7.8 percent, and 8.9 percent, respectively, against 17.9 percent, 21.2 percent, and 20.5 percent, respectively, in the case of India; 18.5 percent, 12.0 percent, and 14.4 percent, respectively, in the case of Sri Lanka; 11.7 percent, 11.1 percent, and 9.8 percent in the case of Nepal; and 9.5 percent, 17.7 percent, and 10.5 percent, respectively, in the case of Burma. Source: *Key Indicators*, Asian Development Bank, July 1990

ic, have been advanced for this lacklustre performance. The most frequently cited causes include a high propensity for conspicuous consumption, increased availability of new products, a production structure that has emphasized consumer goods production, and, until recently, negative real returns to financial savings. While these factors affect the propensity to save, they cannot satisfactorily explain certain features of the saving behaviour in Pakistan. Furthermore, by merely referring to cultural factors as the reason for low saving rates, the significance of other possible socio-economic factors as determinants of household savings is discounted. Some of these factors are more relevant when considering the ways by which the saving performance can be improved.

National/domestic savings consist of three components, viz., corporate, household, and government savings. Different factors are likely to influence each of these components. In developing countries, typically, the household sector accounts for a large proportion of the total savings. In Pakistan, during the last three decades, the household sector has accounted for about 83 percent of the total savings. Given its overwhelming dominance in total savings, this paper analyses the households' saving behaviour in Pakistan. Besides investigating the nature of the income-saving relationship, the paper examines the impact of various socio-economic and demographic factors on household savings. In particular, the effects of the dependency ratio, education, employment status, earning status, occupation, residence location, and the secondary earner on household savings are examined. In order to highlight the differences in the saving behaviour of the rural and the urban households, separate estimates are obtained for each type of household.

Despite its dominance in total savings, not much work has been done to analyze the households' saving behaviour in Pakistan. Although attempts have been made to analyze national savings as well as household savings using time-series data,² a cross-sectional analysis of the household saving behaviour has only recently been conducted by Akhtar (1986, 1987) using the information contained in the Household Income and Expenditure Survey (HIES) for the year 1979. Akhtar (1986) provides estimates of the saving propensities of various income and socio-economic groups. On the other hand, the impact of the dependency ratio, urbanization, and education on the households' savings is analysed in Akhtar (1987).

Although these studies contribute significantly to understanding household savings behaviour in Pakistan, they suffer from several weaknesses. First, these studies are based on information for only the urban households. In Pakistan, where 70 percent of the population lives in the rural areas with quite a distinct socio-

²While Qureshi (1981) has analyzed household savings using time-series data, Burney (1989) has examined national savings, particularly the impact of remittances on the national saving rate. Khan (1988), on the other hand, has tested financial repression and financial development hypotheses under the alternative expectations scheme to explain the low saving rates in Pakistan.

economic and demographic background compared to their urban counterparts, the results based on only the urban households cannot depict the reality of household savings in the country. Second, the impact of the dependency ratio, urbanization, and education on savings has been analyzed on a piecemeal basis. In other words, the impact of each of these factors on household savings is examined separately.

The rest of the paper is organized as follows: Section II discusses the data and various definitions of savings employed in the paper, as well as reports the salient features of the households' saving patterns in Pakistan. Various functional forms of the saving equation employed in the paper are discussed in Section III. Section IV reports and discusses the results. The final section contains the concluding remarks.

II. THE DATA

The present study is based on micro level data of the Household Income and Expenditure Survey (HIES) for the year 1984-85, compiled by the Statistics Division of the Government of Pakistan. The survey, based on a national sample, covers 16580 households and contains information on the households' income, expenditure, savings, and age, sex, education, employment status, occupation, etc., of the household members. As it is true in most developing countries, the data on household saving in Pakistan are beset with various problems.³ The gravity of the problem can be judged by the fact that if financial savings plus net change in assets, when adjusted for repayments of loans and additional borrowing, is taken as a measure of household savings, then it is found that all the households reported either negative or zero savings (see Table 1). Thus, in this paper, household savings are derived using the residual approach, i.e., taking the difference between the household's income and expenditure. Since, in household surveys, both income and expenditure are measured with errors, the quality of current savings obtained by using the residual approach depends crucially on how well various items of expenditure and income are recorded. Keeping in view these deficiencies, an attempt is made to partially overcome this problem by defining household savings in five different ways, i.e.,

S_1 = Household income minus household consumption expenditure;

S_2 = Household income minus household expenditure on non-durables;

S_3 = Household income minus household expenditure on non-durables (durables include appliances only);

³For more on the problems of measuring household savings, see Deaton (1989).

S_4 = Household income minus household expenditure on non-durables (durables includes appliances and education); and

S_5 = Financial Saving + Net Change in Assets – Net of Repayments and Borrowing.

Table 1

Salient Features of Household Savings Patterns

Savings Definitions	S_1	S_2	S_3	S_4	S_5
Mean Income					
Total*	1910.02	1910.02	1910.02	1910.02	1910.02
Urban**	2366.32	2366.32	2366.32	2366.32	2366.32
Rural***	1536.97	1536.97	1536.97	1536.97	1536.97
Negative/Zero Savers (%)					
Urban**	41	31	36	31	100
Rural***	41	32	37	36	100
Mean Savings					
Total*	142.68	216.19	188.97	209.94	-0.25
Urban**	201.72	288.17	258.65	294.83	-0.16
Rural***	94.40	157.35	131.99	140.53	-0.33
Average Propensity to Save (%)					
Total*	7.47	11.32	9.89	10.99	-
Urban**	8.53	12.18	10.93	12.46	-
Rural***	6.14	10.24	8.59	9.14	-

Note: *16547 households; **7443 households; ***9104 households.

The households' saving pattern obtained from the data using the above definitions are reported in Table 1.⁴ A cursory look at the table indicates that the average income of the urban households is, respectively, 24 percent and 54 percent higher as compared with that of overall Pakistan and the rural households.

⁴It is surprising to note that in the entire sample S_5 is non-positive. The likely explanations could be that either the questionnaire was left blank on purpose or the households refused to reveal their assets.

Similarly, the average household saving is considerably higher in the case of the urban households as compared with that of overall Pakistan and the rural households. The average propensity to save (APS) for overall Pakistan ranges from 7.47 percent to 11.32 percent, depending on the choice of the savings definition. While the APS varies from 8.52 percent to 12.46 percent in the case of the urban household, it ranges from 6.14 percent to 10.24 percent in the case of the rural household.

It is interesting to note that more than a one-third of the households in both the urban and the rural areas reported negative or zero saving (see Table 1).⁵

III. THE MODEL

Various consumption/savings hypotheses have been developed ever since the Absolute Income Hypothesis (AIH) postulated by Keynes.⁶ Our objective here is not to test these contending consumption/savings hypotheses with household data but to find out a savings function which is simple, but which, at the same time, has been widely used in analyzing household savings behaviour.⁷ We begin our analysis with the Absolute Income Hypothesis whose empirical application leads to the following simple form :

$$S = \alpha_0 + \alpha_1 Y + \alpha_2 Z \quad \dots \quad \dots \quad \dots \quad (1)$$

Where S and Y are household savings and income, respectively, while Z is a conglomeration of other socio-economic variables. The above equation, it is argued, is unsuitable for the analysis of household savings behaviour because it does not take into account the non-linearities which are commonly observed in the household data. Equation (1) is then extended to include non-linearities as follow;

$$S = \alpha_0 + \alpha_1 Y + \alpha_2 Y^2 + \alpha_3 Z \quad \dots \quad \dots \quad \dots \quad (2)$$

⁵Deaton (1989) has pointed out that the standard household surveys understate saving. It would have been useful to measure the extent of understatement of saving by comparing the national accounts estimates of household saving and the estimates from the survey. However, estimates of household saving from national accounts are not available in Pakistan. Therefore, an exercise in comparison cannot be undertaken.

⁶The main contending consumption/savings hypotheses are: the Relative Income Hypothesis (RIH) of Duesenberry, the Permanent Income Hypothesis (PIH) of Friedman, and the Life Cycle Hypothesis (LCH) of Ando-Brumberg-Modigliani. For a fairly good overview of these contending hypotheses, see Fisher (1983).

⁷At the suggestion of one of the referees, attempts were made to determine the true shape of the savings-income relationship by plotting saving against income and its different transformations. Despite several experimentation with the data, however, no meaningful shape of the saving-income relationship could be established. Therefore, we restrict our analysis to the saving functions which are simple and have been widely used in the empirical literature. The results of the experimentation exercise are available from the authors.

The functional form given in Equation (2) is equally unsuitable because the estimates of the coefficients, i.e., α_1 , α_2 , and α_3 , are likely to suffer from the problem of heteroscedasticity. One way to avoid this problem is to express saving as a percentage of income. The savings function can then be rewritten as;

$$S/Y = \beta_0 + \beta_1 Y + \beta_2 (1/Y) + \beta_3 Z \quad \dots \quad \dots \quad (3)$$

To take into account the non-linearities in the savings function Klein (1951) has suggested the following alternative formulation;

$$S/Y = \gamma_0 + \gamma_1 \log Y + \gamma_2 Z \quad \dots \quad \dots \quad \dots \quad (4)$$

Equations (3) and (4) have important implications for income distribution policies. The traditional Keynesian hypothesis suggests that the equalization of income distribution increases aggregate consumption, and hence, reduces savings. A positive and statistically significant coefficient of β_1 in Equation (3) and γ_1 in Equation (4) would support the traditional Keynesian wisdom.⁸ The sign of β_2 can be either positive or negative, depending upon the shape of the savings function. In general, however, it is found to be negative.

In an attempt to better capture the shape of the savings function and to test the hypothesis of linear versus non-linear relationship between savings and income, Landau (1971) suggested the following functional form:

$$S/Y = \lambda_0 + \lambda_1 Y + \lambda_2 (\log Y)^2 + \lambda_3 Z \quad \dots \quad \dots \quad (5)$$

A positive and statistically significant coefficient of λ_2 would support the hypothesis of non-linearity.

Socio-economic and Demographic Factors

As mentioned at the outset, the objective of the paper is to examine the effects of various socio-economic and demographic factors alongwith the income on household savings. The factors whose impact on saving will be examined in this paper are: the dependency ratio, age of household head, education of household head, employment status of household head, earning status of household head, occupation of household head, and the presence of secondary earner in the household.

⁸For further detail on this issue, see Khan (1987).

(i) *Dependency Ratio*

The dependency ratio has been defined in the literature as a percentage of the population aged 14 and below plus a percentage of the population aged 65 and above. On the basis of cross-country evidence, Leff (1969) is the first to have obtained an inverse relationship between the dependency ratio and household savings. Leff's paper generated considerable interest and, since then, several studies have been undertaken to validate or contradict his findings. Gersovitz (1988) and Mason (1988) give an up to date review of such literature.⁹ The evidence presented thus far is far from being conclusive.

In this paper we argue that the inclusiveness that prevails in the literature regarding the direction and magnitude of the relationship between the dependency ratio and household savings is due to the way the dependency ratio is defined. In defining dependency ratio, it has been implicitly assumed that the population aged 14 and below plus 65 and above adds to household consumption and contributes nothing towards production. In the context of the developing countries, where 70 percent of the population lives in the rural areas, and where children are considered an asset because of their contribution to household activities, the above assumption appears to be rather strong.¹⁰ The impact of the dependency ratio on household savings can be more meaningfully examined if, instead of putting a restriction on the age of the household members, their earning status is explicitly taken into account. In this paper, the dependency ratio is thus defined as:

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

where DR is the dependency ratio, HS is the household size, and NE is the number of earners in a household.

(ii) *Education*

Kelley (1980) and Akhtar (1987) have examined the impact of the level of education on household savings, and their findings are at best ambiguous. The ambiguity stems from the fact that, on the one hand, for various reasons, educated households have a relatively higher consumption expenditure; while, on the other hand, educated people are likely to earn more.¹¹ Furthermore, while the households'

⁹For specific studies on the subject, see, for instance, Gupta (1971); Adams (1971); Goldberger (1973); Ram (1982); Kelley (1973, 1988).

¹⁰See Yotopolous and Kuroda (1988) on the value of children in household production in developing countries.

¹¹Educated households have a higher consumption expenditure because educated households are susceptible to product advertisement, are likely to indulge in conspicuous consumption, educated people are likely to maintain a certain level of living standard, and educated parents tend to have educated children and, as such, incur higher expenditure per child, etc.

consumption is influenced by the tastes and preferences of all the household members, it is difficult to define a composite index of household education level. Since the decision of how much to save is generally taken by the heads of the households, the level of education of the household head appears to be the relevant variable whose impact on household savings ought to interest us. For the task at hand, the level of education of the head of the household is described by five categories, i.e., uneducated, primary but less than middle, middle but less than intermediate, intermediate but less than graduate, and graduate and above. These categories are represented in the regression by a set of four dummy variables taking values (0,1).

(iii) *Employment Status*

The employment status of the household head has received considerable attention as a source of differences in savings across households in the developing countries. Ramanathan (1969), and Kelley and Williamson (1968), respectively, have found that self-employed persons save the most in India and Indonesia. Snyder (1974), on the other hand, does not find support for this result in the case of West Africa. In this paper, the impact of employment status on household savings is analyzed by considering two broad categories, i.e., (i) the employee and (ii) the employer/self-employed. A dummy variable is defined, taking the value '1' if the household head is employer/self-employed, and '0' otherwise.

(iv) *Earning Status*

In order to examine the impact of the earning status of the head of the household on household savings we introduce a dummy variable in our saving functions, taking value '1' if the household head is earner, and '0' otherwise.

(v) *Occupation*

Like other socio-economic variables, occupation of the household head has also received considerable attention as a source of differences in savings across households in the developing countries. It has also proved to be a good explanatory variable for estimating permanent income.¹² In this study, occupation of the head of the household is included as a qualitative variable defined over six categories: (i) professional workers, (ii) administrative and managerial workers, (iii) clerical staff, (iv) sales, services, and miscellaneous workers, (v) production-related workers, and (vi) others, including the retired, sick, etc. A set of five dummy variables are defined taking the values (0,1) and the last category, i.e., others, has been treated as an excluded category whose effect is captured by the intercept term.

¹²See Betancourt (1971) and Ramanathan (1968).

(vi) *Secondary Earner*

In order to examine the effect of the secondary earner on household savings we introduce this variable in our saving functions. Secondary earner is defined as a qualitative variable and represented by a dummy variable, taking the value '1' if the household's income exceeds the income of the household head, and '0' otherwise.

(vii) *Household Head's Age*

The life-cycle models suggest that there exists a relationship between age and saving rates. In this paper, the age of household head and its square is included to establish this relationship.

IV. RESULTS

Equations (3), (4), and (5), representing three different functional forms of the savings function¹³ as propounded by Keynes, Klein, and Landau, respectively, are estimated separately for the urban and the rural households using the Ordinary Least Squares (OLS) estimation technique.¹⁴ The results for the urban and the rural households, respectively, are reported in Tables 2 and 3.¹⁵

It can be seen from these two tables that, on the basis of R^2 statistics, the Keynesian model fits the Pakistani data better than the other two models. Furthermore, all three models explain a relatively larger proportion of variation in the saving ratio for the rural households. Besides household income, the dependency ratio, education, age of household head, and secondary earner in household are found to have a significant impact on the saving behaviour of both urban and rural households.

¹³ Although we have listed five definitions of savings, to conserve space the results corresponding to only one definition (S_3) are reported. The results corresponding to other definitions are more or less similar.

¹⁴ It is now generally assumed that in the regressions of consumption/savings on income based on family budget surveys one can expect unequal variances among the disturbances, i.e., the error terms are heteroscedastic. In this study, however, the standard errors of the estimates reported were adjusted for the heteroscedasticity using the technique suggested by White (1980, 1982).

¹⁵ A regression pooling both the urban and the rural households was estimated with additive and multiplicative dummy variables besides other socio-economic variables. The additive as well as the multiplicative dummies were found to be statistically significant, suggesting that there exist significant structural and behavioural differences in urban-rural saving behaviour in Pakistan which warrants separate estimates for the urban and the rural households. The coefficient of additive dummy, representing the urban households, was found to have a negative sign, indicating that the urban households tend to save less as compared to their rural counterparts. Although this finding is in sharp contrast to that of Chaudhry (1968) and Gupta (1970) for India, yet it is not altogether surprising. Rural areas are predominantly agrarian in nature and the income derived from agriculture is inherently uncertain. Uncertainty at low income poses a real threat to the consumption level, which is likely to exert a powerful influence on the saving behaviour. The poor consumers are more risk-averse and they tend to save more for the rainy day; See Deaton (1989).

Table 2

Ordinary Least Squares Estimates of the Saving Equations for Urban Households in Pakistan

	Keynesian	Klein	Landau
Household Income	0.000002 (0.93)	—	-0.000003 (1.22)
Inverse of Household Income	-408.13 (3.00)*	—	—
Log of Household Income	—	0.202 (5.36)*	—
Log of Household Income Squared	—	—	0.013 (5.09)*
Dependency Ratio	-0.407 (3.34)*	-0.227 (5.15)*	-0.210 (5.19)*
Education of Household Head			
Primary but Less than Middle	-0.043 (2.38)*	-0.030 (2.53)*	-0.028 (2.43)*
Middle but Less than Intermediate	-0.094 (2.37)*	-0.081 (2.74)*	-0.077 (2.74)*
Intermediate but Less than Graduate	-0.111 (2.66)*	-0.099 (3.34)*	-0.094 (3.32)*
Graduate and Above	-0.129 (2.48)*	-0.122 (3.46)*	-0.155 (3.55)*
Earning Status of Household Head	0.042 (0.64)	0.038 (0.54)	0.037 (0.52)
Employment Status of Household Head	-0.014 (1.26)	-0.018 (1.70)**	-0.018 (1.69)**

Continued —

Table 2 – (Continued)

Occupation of Household Head			
Professional	0.066 (1.07)	0.074 (1.08)	0.072 (1.06)
Administrative and Managerial Workers	0.037 (0.66)	0.019 (0.31)	0.025 (0.41)
Clerical Staff	0.078 (1.28)	0.091 (1.34)	0.090 (1.33)
Sales, Services, and Miscellaneous Workers	0.051 (0.80)	0.055 (0.79)	0.055 (0.78)
Production-related Workers	0.074 (1.18)	0.078 (1.14)	0.077 (1.12)
Secondary Earners in Household	-0.011 (0.59)	0.009 (1.55)	0.014 (2.28)*
Age of Household Head	-0.008 (2.86)*	-0.007 (3.30)*	-0.007 (3.27)*
Age of Household Head Squared	0.0001 (2.69)*	0.0001 (2.89)*	0.0001 (2.83)*
Constant Term	0.760 (3.26)*	-1.179 (5.10)*	-0.419 (4.32)*
R-Square	0.209	0.083	0.075
Adjusted R-Square	0.207	0.081	0.073
F-Statistics	115.15	42.11	35.29
Marginal Propensity to Save	0.21	0.23	0.22

Note: *t*-statistics are given in parentheses.

*denotes significance at 5 percent level.

**denotes significance at 10 percent level.

Table 3

Ordinary Least Squares Estimates of the Saving Equations for Rural Households in Pakistan

	Keynesian	Klein	Landau
Household Income	-0.000008 (0.81)	-	-0.0001 (0.81)
Inverse of Household Income	-483.32 (7.70)*	-	-
Log of Household Income	-	0.373 (9.27)*	-
Log of Household Income Squared	-	-	0.032 (5.68)*
Dependency Ratio	-0.753 (8.78)*	-0.499 (9.73)*	-0.488 (8.96)*
Education of Household Head			
Primary but Less than Middle	-0.056 (4.45)*	-0.052 (3.93)*	-0.047 (3.60)*
Middle and Above	-0.110 (5.34)*	-0.131 (5.06)*	-0.112 (4.67)*
Earning Status of Household Head	0.137 (2.29)*	0.104 (1.41)	0.091 (1.24)
Employment Status of Household Head	-0.074 (5.34)*	-0.070 (3.90)*	-0.067 (3.73)*

Continued-

Table 3 –(Continued)

Occupation of Household Head			
Professional, Administrative, Managerial, and Clerical Staff	0.055 (0.85)	0.075 (0.93)	0.068 (0.84)
Sales, Services, and Miscellaneous Workers	0.057 (0.91)	0.054 (0.68)	0.057 (0.71)
Production-related Workers	0.095 (1.49)	0.086 (1.06)	0.087 (1.06)
Secondary Earner in Household	-0.006 (0.55)	0.003 (0.26)	0.001 (0.12)
Age of Household Head	-0.008 (4.91)*	-0.004 (2.17)*	-0.004 (2.06)*
Age of Household Head Squared	0.0001 (4.29)*	0.00002 (1.18)	0.00002 (1.15)
Constant Term	1.140 (8.13)*	-2.225 (8.30)*	-1.108 (5.17)*
R-Square	0.40	0.128	0.118
Adjusted R-Square	0.40	0.126	0.116
F-Statistics	469.99	110.32	92.70
Marginal Propensity to Save (MPS)	0.30	0.37	0.37

Note: *t*-statistics are given in parentheses.

*denotes significance at 5 percent level.

As regards the Keynesian saving function, the coefficient of household income (Y), though it bears a positive sign, is statistically insignificant. The coefficients of inverse of household income, i.e., $(1/Y)$ in Keynesian function, of $\log Y$ in Klein's function, and of $(\log Y)^2$ in Landau function, are statistically significant and, hence, provide abundant support to the non-linearity of the saving functions in Pakistan. The size of the coefficients of the different variants of income variables are relatively larger for the rural households as compared their urban counterparts. The marginal propensity to save (MPS) calculated at the mean value of household income varies from 0.21 to 0.23 and 0.30 to 0.37, respectively, for the urban and the rural households, depending on the choice of the functional form.

The celebrated dependency ratio is found to have a negative influence on the household savings, and it is relatively larger for the rural households. The coefficient of dependency ratio is statistically significant across all the functional forms with a negative sign. The negative effect of the dependency ratio on household savings in Pakistan is in line with the findings of Leff, presented some two decades ago.

Various categories of education are found to have a significant negative influence on household savings in Pakistan.¹⁶ The impact is relatively small for the rural households as compared to their urban counterparts. This finding suggests that as the level of education of the household head increases, the savings are reduced. This is not surprising, considering that, for Pakistan, Burney and Irfan (1991) found that educated parents are more likely to educate their children, and the higher the educational level of the parents, the greater is the probability that their children will pursue higher studies. Thus, for a given level of income, the expenditure of the households headed by educated persons is more likely to be higher and, consequently, their savings will be low.

The coefficient of the earning status bears a positive sign and is statistically insignificant across all the saving functions for urban household. This suggests that *household savings in the urban areas are likely to increase if the household head is an earner*. In the case of the rural household, the coefficient of the earning status is not only statistically significant with a positive sign, but the size of the coefficient is three times larger than the ones reported in the case of the urban household. Thus, if the household head is an earner, then, holding other things constant, savings in the rural areas are likely to increase.

¹⁶The smaller number of educated household heads in the rural areas has constrained us to combine the second, third, and fourth categories of the level of education into a new category, 'Middle and above'.

The coefficient of the employment status bears a negative sign and is statistically significant at the 10 percent level in the cases of Klein and Landau functions for urban households. On the other hand, the coefficient is not only statistically significant at the traditional level in the case of Keynesian function for rural households, but the size of the coefficient is also considerably larger than the ones reported in the case of urban household. These findings suggest that: (i) the employer/self-employed saves less as compared to the employees in both the urban and the rural areas – a finding which is contrary to that of Ramanathan (1969) and Kelley and Williamson (1968) in the case of India and Indonesia, but one that is in line with Snyder (1974) in the case of West Africa; (ii) the saving differential between the employers/self-employed and the employees is more pronounced in the case of the rural household. The coefficients of all the different categories of occupation of the head of the household are statistically insignificant for both the urban and rural households, suggesting that this variable has very little impact on savings in Pakistan.¹⁷ Similarly, the presence of secondary earner is found to have no significant impact on household savings in Pakistan.

The coefficients of the age of the household head and its square are statistically significant, with the negative and positive signs, respectively, for both the urban and the rural households. This result suggests that saving decreases with the age, and that it decreases at a decreasing rate.

V. CONCLUDING REMARKS

The purpose of this paper has been to analyze the household savings behaviour in Pakistan, using the data available from the Household Income and Expenditure Survey (HIES) for the year 1984-85. In particular, we have examined the impact of household income alongwith other socio-economic and demographic factors, such as the dependency ratio, education, earning status, employment status, occupation, and secondary earners, on household savings. Three different non-linear savings functions attributed to Keynes, Klein, and Landau have been estimated separately for the urban and the rural households, using the Ordinary Least Squares (OLS) technique.

The marginal propensity to save (MPS), calculated at the mean value of household income, is found to vary from 0.21 to 0.23 in the case of the urban area, and from 0.30 to 0.37 in the case of the rural area, depending on the choice of the functional form. Contrary to the general belief, it is found that the propensity to save of the rural households is much higher as compared with their urban counterparts.

¹⁷As in the case of education, the occupational categories for rural households are redefined to take care of a few persons in some occupational categories.

The dependency ratio is found to exert a negative influence on household savings, thus providing abundant support to Leff's finding. Various categories of education are found to have a negative influence on household savings, indicating that more educated household have a higher consumption expenditure, and that they are likely to save less. Our findings do not provide support to any systematic relationship between savings and the employment status and occupation of the household head. Finally, it is found that saving increases with the age but tends to decline when the age crosses a certain limit – a finding consistent with the life-cycle hypothesis.

REFERENCES

- Adams, Nassau A. (1971) Dependency Rates and Savings Rates: Comment. *American Economic Review* 61: 3 472-475.
- Akhtar, Sajjad (1986) Savings-Income Relationships in Urban Pakistan: Evidence from HIES 1979. *Pakistan Journal of Applied Economics* 5:1.
- Akhtar, Sajjad (1987) Dependency, Urbanization, Education and Household Savings: Some Preliminary Evidence from Pakistan. *Savings and Development* 11:4.
- Betancourt, R. R. (1971) The Normal Income Hypothesis in Chile. *Journal of the American Statistical Association* 66.
- Burney, Nadeem A. (1989) A Macro-economic Analysis of the Impact of Workers' Remittances on Pakistan's Economy. In Rashid Amjad (ed) *To the Gulf and Back*. New Delhi: ILO/ARTEP.
- Burney, Nadeem A., and M. Irfan (1991) Parental Characteristics, Supply of Schools and Child School-enrolment in Pakistan. *The Pakistan Development Review* 30:1.
- Chaudhry, U. D. Roy (1968) Income, Consumption, and Savings in Urban and Rural India. *Review of Income and Wealth* Series 14 March.
- Deaton, A. (1989) Saving in Developing Countries: Theory and Review. *Proceedings of the World Bank Annual Conference on Development Economics*. Washington, D.C.
- Fisher, D. (1983) *Macro-Economic Theory: A Survey*. New York: St. Martin's Press.
- Gersovitz, Mark (1988) Saving and Development Chapter 10. In Hollis Chenery and T. N. Srinivasan (eds) *Handbook of Development Economics*. (Vol. I) Netherlands: North-Holland.
- Goldberger, Arthur S. (1973) Dependency Rates and Savings Rates: Further Comment. *American Economic Review* 63:1.
- Gupta, K. L. (1970) On Some Determinants of Rural and Urban Household Saving Behaviour. *Economic Record* 46:116

- Gupta, K. L. (1971) Dependency Rate and Savings Rates: Comment. *American Economic Review* 61:3.
- Kelley, Allen C. (1973) Population Growth, The Dependency Rate and the Pace of Economic Development. *Population Studies* 27:3.
- Kelley, Allen C. (1980) Interactions of Economic and Demographic Household Behaviour. In Richard A. Esterlin (ed) *Population and Economic Change in Developing Countries*. National Bureau of Economic Research.
- Kelley, Allen C. (1988) Population Pressures, Saving, and Investment in the Third World: Some Puzzles. *Economic Development and Cultural Change* 36:3 April.
- Kelley, A. C., and J. G. Williamson (1968) Household Saving Behaviour in the Developing Economies: The Indonesian Case. *Economic Development and Cultural Change* 16:3 385-403.
- Khan, Ashfaq H. (1987) Aggregate Consumption Function and Income Distribution Effect: Some Evidence from Developing Countries. *World Development* 15:10/11.
- Khan Ashfaq H. (1988) Financial Repression, Financial Development and Structure of Savings in Pakistan. *The Pakistan Development Review* 27:4.
- Klein, Lawrence R. (1951) Estimating Patterns of Savings Behaviour from Sample Survey Data. *Econometrica* 19: October.
- Landau, L. (1971) Savings Functions for Latin America. In Hollis B. Chenery (ed) *Studies in Development Planning*. Cambridge: Harvard University Press.
- Leff, Nathaniel H. (1969) Dependency Rates and Savings Rates. *American Economic Review* 59:5 December.
- Mason, A. (1988) Saving, Economic Growth, and Demographic Change. *Population and Development Review* 14:1 March.
- Qureshi, Zia M. (1981) Household Savings in Pakistan: Some Findings from Time-Series Data: *The Pakistan Development Review* 20:4.
- Ram, Rati (1982) Dependency Rates and Aggregate Savings: A New International Cross-Section Study. *American Economic Review* 72:3 June.
- Ramanathan, R. (1968) Estimating the Permanent Income of a Household: An Application to India Data. *Review of Economics and Statistics* 50:3 August.
- Ramanathan, R. (1969) An Econometric Exploration of Indian Saving Behaviour. *Journal of the American Statistical Association* March.
- Snyder, Donald W. (1974) Econometric Studies of Household Saving Behaviour in Developing Countries: A Survey. *Journal of Development Studies* 10:2 January.
- White, H. (1980) Using Least Squares to Approximate Unknown Regression Function. *International Economic Review* 21:149-170

- White, H. (1982) Maximum Likelihood Estimation of Misspecified Models. *Econometrica* 50:1–26.
- Yotopolous, Pan A., and Y. Kuroda (1988) A Subjective Equilibrium Approach to the Value of Children in the Agricultural Household. *The Pakistan Development Review* 27:3.