# HOUSEHOLD INDEBTEDNESS AND FINANCIAL ASSETS (INVESTMENT) A CASE STUDY OF PAKISTAN

*by*

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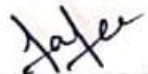
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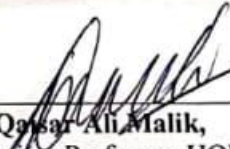
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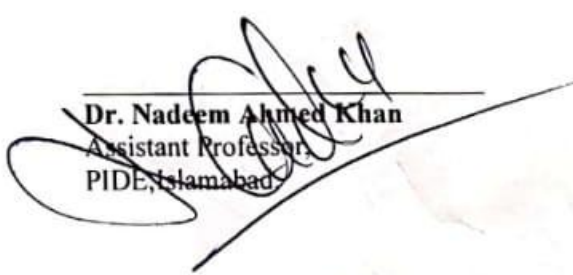
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*Dedicated to*

*MY FATHER*

*Ch. Muzammil Hussain (late)*

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# ABSTRACT

The importance of saving and household debts for economic growth is not overlooked. In the last decade, the flow of household indebtedness has increased in Pakistan. One objective of the study is to identify the trend of household indebtedness and saving in Pakistan and to understand the allocation of debt by indebted household. The study collects data from HIES surveys (2005-2006, 2007-2008, 2011-2012, 2015-2016 and 2018-19) and access to finance survey (2010). The findings suggest that the consumption is the key determinant of household borrowings and informal markets are main the sources of borrowing and saving in Pakistan. The other objective of the study is to confirm the degree of interdependence between financial assets and household debt by using the cross sectional data (HIES 2018-2019). The study used SUR technique which result shows the interdependence between household financial assets and liabilities and there is significant and negative relationship between them. It is particularly important to understand how household liabilities affect their financial decisions as the volume of debt increased. This study gives direction to investigate the interdependence of different components of liabilities and financial assets.

KEYWORDS: household saving, household borrowing, debt or liability, financial assets

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| | |
|---|---|
| HH | Households |
| HIES | Household integrated economic survey |
| SUR | Seemingly unrelated regression |
| OECD | Organization for economic corporation and development |
| FMOLS | Fully modified ordinary least square |
| PPHS | Pakistan panel of household survey |
| SEACEN | South East Asian central banks |

# CHAPTER 1
# INTRODUCTION

## 1.1 Background

The household consumption and saving behavior plays a vital role in economic stability and economic growth. From classical days the major determinant of economic growth is saving. Level of an investment can be increased through saving. Saving is an essential part in any growth model. Accordingly (Todaro and Smith, 2011), the rate of investment in any in the country determines by the rate of savings which in turn leads to economic growth. According to Osundina (2014) savings is also very important for capital accumulation and economic development so the saving reflects a significant variable in any economy. This study focus on the trends of household's saving behavior at micro level. Which enables to identify the factors that are the main drivers of saving and the composition of saving either it is in form of financial assets investment or in real assets investment.

Saving in terms of financial assets are more effective rather than real assets Bhatt (1991). Real assets are normally less liquid than financial assets since they are generally more bulky to exchange and their marketplaces are not as effective or populated. Due to the relationship of saving and investment, saving leads to economic progress but the progress not only depends upon saving it is also important to invest to enhance productive capacity. Financial knowledge motivate the people to take better investment decisions, make saving and assets for future life. But the financial inclusion in Pakistan as compared to other developing nations of south Asian nations is very low. So the saving in financial assets are more beneficial therefor it is important to evaluate the financial asset's determinants at the household level. According to Blanc et al. (2014) institutional macroeconomic variables and household characteristics are significant and economically important determinants of both preferences of saving and credit constraint household face.

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Over the last decade, there has been increase in household debt[1], both in relative to household's income and in absolute term. Household debt, liabilities, borrowing and indebtedness are used interchangeably in this study. The household liability is gradually increasing. The liabilities are increased in 2015-16 by 19.1 percent from the previous year (SBP, 2016). The indication of household indebtedness in accordance with household behavior is no doubt a pivotal topic to discuss as household indebtedness have gotten drastically higher in Pakistan. According to Javed et al. (2019) shows that in Pakistan the average of one-fifth of household are indebted. Recently, Pakistan has faced severe conflict challenges which have disrupted society's cultural, political, social, and economic spheres. Pakistan also faces debt-related hurdles: in particular, systemic debt, where social forces are conspiring to keep households in debt for long periods of time.

There are some factors which influence the household debt they are called determinants of household debt. Starting from demand factors, for smoothing the consumption the household debt may be driven. According to Coletta et al. (2014), in negative phase of business cycle the household demand extra credit to smooth out the consumption pattern. Household's debt not only affected by the flow indicators like income but also by household financial and real wealth (in a similar way Brandolini et al. (2010), study poverty analyzing financial and real asset holdings).

Household expenditures on consumption, education, health, marriage and death ceremonies are main reasons of household borrowing from informal credit markets. Borrowing from informal markets leads to think about how and from where the household borrows. Pakistan lacks an efficient pension system due to which many people rely on their families for funding Jalal et al. (2014). Except for pensions, elderly people can borrow money to cover their expenses in the event

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[1] Household debt is an obligation or liability arising from borrowing money.

of income deficiency. Higher debt levels for older people are a troubling sign for both lending institutions and individuals because when individuals reached their elderly age most of the debt is typically repaid. According to scenario it is cleared that the household saving and debt behavior changes across the households.so I will evaluate the trends of household saving and debt across the households of Pakistan. Also discuss the determinants of saving in terms of financial assets and debt at the household level.

Researchers have contributed a significant amount of research about the financial vulnerability of indebted households and borrowing household. But it is also well known that there isn't much discussion about whether and how the concept of indebtedness has desired effects on the behavior of households outside the scope of their borrowing decision. Just as the indebtedness has clear indication on the consumption pattern of households, followed by specific choices in regards to their assets. So after discussing determinant evaluate the interlinkage between household debt and financial assets in case of Pakistan which most of studies do not take in account.

## 1.2 Research gap

Mostly studies have analyzed the trends of borrowing and saving (for example Javed et al. (2019)). Keeping in view above background, the present study focuses on analyzing the Pakistan's household saving and also the indebtedness over the period of time and also analyze the reason of both household borrowing and mode of saving. The uniqueness of the study is that it will be the first piece of study which will evaluate interdependence between the financial assets and indebtedness at the household level. Because most of the studies only consider the one aspect in case of Pakistan but many other countries analyzed the impact of household liabilities on assets like Kukk (2014).

**1.3 Hypothesis**

Ho= There is no interdependence between household financial assets and liabilities

$H_1$= There is interdependence between household financial assets and liabilities.

**1.4 Objectives of study**

Objectives of the study are follows

1. To identify the trends of household indebtedness and household saving in Pakistan over the time and to understand what purposes and sources behind the borrowing and saving of the household.

2. To identify the degree of interdependence between household's debt and assets by jointly modelling.

**1.5 Significance of study**

As the objective of the study is that access the indebtedness and saving of household in Pakistan and know about how the household saving and debt size vary along the time. The study will be important for evaluating how much informal markets are involved in borrowing and saving. This study is important so that policy makers can adopt those measures that can reduce informal market's involvement in borrowing and saving which is beneficial for society.

**1.6 Scheme of work**

The study organized into three chapters, following the chapter is an introduction. The brief situation of literature on the household debt and saving behavior, the determinant and the interlinkage between financial assets (investment) and household debt is described in chapter 2. Chapter 3 introduces the data and methodology to empirically investigate the objectives. Chapter 4 comprises of estimation results and discussion. Chapter 5 is the last chapter and gives the summary and conclusion of the entire thesis.

# CHAPTER 2
# LITERATURE REVIEW

## 2.1 Introduction

The literature can be divided into different domains: one focus on the topic related to household saving, investment in financial assets, determinants of saving and asset accumulation and the second one related to household debt like developments in credit markets, the financial vulnerability of households due to indebtedness, household borrowing decisions.

## 2.2 Literature

There are numerous studies conducted on household saving level not only on international level but also on national level. According to Keynes (1940) stated that savings is influenced by disposable income. Friedman (1957) suggested that saving of household are based on fixed income. Ando and Modigliani (1963) assume that households were dislike saving in old and young age, but saved more money in their middle ages.

In Philippine Bautista and Lamberte (1990) evaluate comparative saving behavior of urban and rural households. From 12 regions of Philippines, 16971 samples were selected by using family Income and Expenditure Survey (1985) as data source. In all regions positive effect of income, while negative affect of dependency ratio on savings were evaluated. Muradoglu and Taskin (1996) also evaluated the effectiveness of few variables on household saving. For evaluation, collected dataset from 11 industrial and 19 developing countries by using Ordinary Least Square to evaluate the results for the period 1975-89. Results concluded that in developing nations, savings of household was inversely effected by trend income, dependency ratio and real balance. The effect of income growth, trend income, deviation of income from trends in industrial countries were positive

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whereas foreign savings, dependency ratio and real interest rate had negative effect on household's saving. Wen and Ishida (2001) investigated china's rural savings by using ordinary least square to estimate the results during the period 1979-1998. The interest rate and income effect were positive on saving level of rural households.

Ahmad and Asghar (2004) investigated the household saving behavior in Pakistan by utilizing micro data of Household Integrated Economic Survey for the period of 1998-99.Wealth, income, employment status, dependency ratio, age, sex and education were the variables. To estimate saving function OLS method was used. The Sample had 5374 of urban and 8933 rural households. Employment status, income ,age square and gender of household head had positively affect the rates of saving while age of household head, dependency ratio, education levels and wealth had negative effect on urban and rural households. Household's income played an important role in determining savings. The results concluded that as compared to rural households urban households save less.

Ahmad et al. (2006) investigated household's saving behavior by utilizing co integration technique and error correction model to determine short and long-run dynamics of household saving's determinants. The data used for this purpose was time-series data over the period (1972-2003) of Pakistan. Determinants of household saving were divided as demographic, growth and policy variables. Demographic variables had significant and negative effect on saving behavior. Population structure consider both the young and old age dependency ratio. Dependency had significant and negative impact on saving rate of household. The growth and income variables were positive and significant. On savings, real interest rate also had positive impact. Although significant and higher value of real interest coefficient rates showed that substitution effects more

than income effect in Pakistan. The negative relationship between household and public saving indicates crowd- out effect of public saving on private saving but in a less proportion.

Faridi and Bashir (2010) investigate the household saving's determinant in district Multan (Pakistan) through field survey (2009-10) by acquiring stratified random sample technique. Their study supports hypothesis of life cycle theory. The result shows age of household has positively related to household saving whereas the size of family, liabilities, children's educational expenditure, marital status and value of house and education of household's head are significantly and inversely related to household saving. Ismail and Rashid (2013) find out the long run relationship between socio-economic demographic variables and household saving rate of Pakistan (1975-2011) the relationship is analyzed through Johansen Cointegration technique. The results conclude the long run relationship between the household saving and variables, while the Error Correction Model results reveals that about 45% convergence towards equilibrium takes place every year.

Abid and Afridi (2010) studied the saving behavior of rural and urban households of Muzaffarabad district. Empirical model include the family size, income, locality and education on saving. The sample had 120 households, 60 from urban households and 60 from rural households. Questionnaire was used for collection of data. The results of economic model revealed that the income is positive and significant while family size revealed negative and significant impact on savings. Education negatively affect savings but it was insignificant. Additionally results concluded that saving and locality positively affect saving behavior of household this means that household of rural areas are likely to save more due to low consumption. The research promoting government to create jobs in Muzaffarabad and subsidize general price level and education services.

Ahmad (2015) investigated short and long run causality and association among the determinant and private saving by using time series data of Pakistan over the period 1972-2012. For long run causality Toda Yamamoto technique and for short run Granger causality test were used. Results indicate the inflation rate, financial development, dependency ratio, GDP per capita and fiscal development have impact on private saving rate. In short-run deposit rate can be increased by government to increase the private saving. Whereas, in long-run government may increase private saving by controlling fiscal deficit and by private investors promote the investment.

Davutyan and Öztürkkal (2016) investigated the factors that have influence on saving-borrowing behavior by using the survey of Turkish household sector and found the result that income, marital status, education strongly corresponds with them by probit regression. Kast et al. (2014) shows that precautionary savings and credit serve as replacements in the provision of self-insurance and participants tend to spend less when there is a free structured savings account. Take-up trends suggest that demands from others to share their resources with participants could be a key obstacle to saving.

Households borrow due to two reasons: lower savings and income fluctuations. According to Lorenzoni and Guerrieri (2011), households borrow because of income volatility, while Eggertsson and Krugman (2012) say that most of the people borrow because of their insufficient savings and for their investment purposes they use these borrowings. Through their consumption households have ability to maximize their utility. Nakornthab (2010) also suggests that household debt increased in SEACEN countries and financial crisis clearly shows, over-debt households are vulnerable to shocks that can lead to financial instability.

In general, people are borrowing when they want to tie the difference between their desired and current income, Barba and Pivetti (2009); Lusardi and Tufano (2015). Usually the extra credit is

used for consuming goods, house buying, and education. Debt volume varies according to age Young (2005). Few researchers have stressed that debt volume increases with age at a decreasing rate (Fabbri and Padula (2004); Yilmazer and DeVaney (2005);Magri (2002).

(Coletta et al. (2014) investigated the determinants of household debt by using a dataset of 32 countries and taking into account both supply side and demand size factors over the period 1955-2011. Results yield that the debt is higher in countries with higher household wealth and per capita GDP. Secondly the efficiency of bankruptcy laws is associated with the volume of household debt. Dynan and kohn (2007) evaluated the US indebtedness and results suggest that greater access to credit and asset growth should, on average, improve households' ability to absorb shocks and concluded that few of the risks related with some household's very high indebtedness to their assets. Kim et al. (2014) also examine increased household debt in Korea and study indicates that it was significantly correlated with rising house prices, banks' relaxed attitude towards household lending, and funding conditions favorable to financial institutions. The analysis shows that the rapid increase in the ratio of household debt to disposable income is explained not only by an increase in purchases of household assets, but also by a slowdown in the growth of disposable income and a fall in in savings rate.

By giving the importance to a need to recognize the behavior of household debt in different age cohorts. Haq et al. (2018) analyzed the impact of age and other variables on debt's demand by using HIES (2001-2013) dataset. Results revealed that the household size and education positively affect the demand of debt. Household debt in mature worker was greater than young workers although older people's debts did not vary substantially from those of other cohorts. The Austrian Central Bank's cross-country study involves Bulgaria, the Czech Republic, Herzegovina, Albania, Poland, Hungary, Romania, Serbia, Croatia and Bosnia suggested that their age and debt have a

positive relationship.(Fidrmuc, Hake, & Stix, 2013). There are some studies which evaluate the effects of credit constraint on household risky assets. Wu et al. (2017) have used a probit model to find out credit constraint have not a clear impact on household risky assets. The research is based on life cycle hypothesis theory and household portfolio choice theory by using questionnaire form China household financial survey. The results reveal that households who are facing the credit constraints have no clear impact on risky asset. Additionally he considered the link between the age and risky asset holding matches the life cycle theory and it was u-shaped.

The shift in the role of debt in household financial management is psychologically due to the change in the mindset of society towards debt. Therefore, as one of the key variables explaining the rise in the level of household indebtedness, attitude is predicted. Given a comparable economic situation, one that is more debt-tolerant would have a greater chance of borrowing than one that is more debt-negative. However, findings on the role of attitude in prompting the decision on household debt are also mixed. Lunt and Livingstone (1991) and Lea et al (1993) find that the attitude of debtors towards debt is more tolerant. Davies and Lea (1995), Cosma and Pattarin (2010), and Lea et al (1993) results consistently indicate that being more debt tolerable raises the likelihood of higher debt acceptance.

Education has a positive impact on household debt because better education offers better earnings prospects and a good understanding of financial options. According to (Kim & DeVaney, 2001) access loans for individuals will be used to repay debt in anticipation of future income. Financial assets and debt have a positive debt relationship, as they can be used as mortgages to secure loans (Leonard & Di, 2014). Home ownership, as many individuals take home loans, is also found to be important in explaining debt. In many countries, it is one of the major drivers of increasing household debt (Andrews, Sanchez, & Johansson, 2011).

There are some studies which evaluate the effect on household financial assets by relaxing credit market constraints and easier borrowing conditions. The effect can be positive. In other words a wide range of credit instruments encourage the people to finance their equity holdings by borrowing, which will lead to having more financial assets. This hypothesis has not been thoroughly investigated. Davis et al. (2006) use a life cycle theory to note that a wedge between the cost of borrowing and the risk-free investment return argues against leveraged equity holdings. On the contrary, their model evaluate that to improve their financial position, households do not exploit their borrowing capacity.

Many studies examine the interaction between household saving rates and financial deregulation. Bayoumi (1993) investigated the effect of financial deregulation on personal saving and found a negative relationship between financial deregulation and saving rate in the UK in the 1970–1980s.Pagano (1994) present an overlapping generation's model by using cross-sectional data from the OECD countries that evaluate how financial deregulation, i.e. lowering of liquidity constraints, lowers the saving rates of household.

Philbrick and Gustafsson (2010) investigate the determinants of the household debt to disposable income ratio in Australia by using both the long-run cointegration analysis and a short run error correction model. They evaluate the theoretical view of the Life cycle hypothesis by Modigliani. Research shows that the change in the debt ratio depends positively on house price and negatively on interest rate. Salotti (2009) investigated the aggregate household saving's determinant for the period 1980-2005 by using panel data of 18 developed Countries. He combines two different pillars of literature: one wealth and consumption effect and the second one aggregate private saving theory.

The model have two measures of household wealth i.e., tangible wealth and financial wealth. Government savings, inflation, two different dependency ratios, long-term interest rate and liquidity

constraints were the variables which are used in this model. The first model had only two measures of wealth as explanatory variables. To estimate a long run savings relationship the fully modified ordinary least square FMOLS technique was used. The results concluded a negative impact of wealth on savings of household. Tangible wealth affect household savings very weakly when population dependency ratios and government saving were included in the model. There was no similar effect on financial wealth. However, the results were uncertain regarding the importance and significance of the effects of inflation, government savings and interest rate.

Carroll et al. (2012) used Cointegration technique to investigate the determinant of personal saving rate in Canada over 1965-96 period. The results conclude that the ratio of all government fiscal balances to nominal GDP, expected inflation, real interest rate and net wealth household ratio to personal disposable income are the key determinant of saving rate as measured in (NIEA). The results reveal that quick decline in the NIEA personal savings rate give a change in the trend component of the savings rate.

Carroll et al. (2012) use a model derived by Toche (2009) to investigate how a relaxation of credit constraints negatively affects household saving. The mechanism works through the decrease in precautionary savings, which brings the target wealth of households to a lower level. A households insure their consumption risk through credit markets, when borrowing is not available they can hold lower buffer stocks. Carroll et al. (2012) use aggregate data for the USA to explain that increased access to credit in the US from the 1980s until 2007 contributed significantly to decline of the saving rate. Whereas, this type of effect has not been investigated at the household level.

The studies of Debelle (2004), Girouard et al. (2006), and Barba and Pivetti (2009) targeted that the household's sensitivity has increased towards negative shocks due to the increased grasp of their balance sheets. Jappelli (1993) state that household indebtedness is concerned with the

increased household's financial fragility. Sufi (2010) found a negative correlation between the growth in household debt before the global financial crisis and consumption after the crisis. And believe that households are more sensitive to house price declines.

Wajiha (2018) shows the financial well-being of Pakistani households and how debt, along with other socio-economic and demographic features, can affect them by using the HIES (2001-2014). The intermediation between household debt and financial wellbeing was also tested and found to be absent. At provincial level the significant difference in the financial wellbeing was present.

The indebtedness also impacts the household's financial asset holdings; the sensitivity of negative shocks increased by indebtedness, for precautionary reasons households always need higher levels of savings. The model of Challe and Ragot (2014) forecast that those households who are facing higher income risk have more precautionary wealth. However, which sources might increase the sensitivity of income risk, they do not investigate. Carroll et al. (2012) explains that due to increased income uncertainty the aggregate household saving rate increased in 2008–2011.

Studies of Brown and Taylor (2008) and Brown et al. (2013) untangle net wealth and each wealth component investigate separately. Brown and Taylor (2008) investigate the determinants of household asset and debt. Later on authors includes the value of the house as real asset, in addition to financial assets. For explore the determinants of assets and liabilities, the German Socio-Economic Panel (GSEP), the Panel Study of Income Dynamics (PSID) the British Household assets is interdependent and these should be jointly modelled.

Above literature suggests that there is relationship between household assets and liabilities. However, there are few studies which investigate this linkage in detail. Many macroeconomic models which explain aggregate developments in household consumption and saving integrate two types of representative, savers and borrowers (see among others Nakajima (2012), Challe and

Ragot (2014)). The first have only liabilities and do not have any savings but and the second own financial assets but do not borrow. In individual balance sheets, at the same time a single household holds both assets and liabilities. Tudela and Young (2005), (The Eurosystem Household Finance and Consumption Network, 2013) ECB (2013b)).

Net wealth is basically financial position of households, where, from assets the liabilities are deducted. Net wealth is negative when household has lower assets than liabilities. The literature find out the relationship between household debt and net wealth. Magri (2007), (Arrondel et al. (2013), Costa and Farinha (2012).

Brown et al. (2013) determined the relationship between assets and liabilities by using PSID, financial asset is included in the debt model and vice versa. The finding represents the financial assets is negatively related to the debt and debt is positively related to financial assets. Kukk (2014) examine how the liabilities of household affect the holding of financial assets. The observed literature suggest that there is relation between the household financial assets and liabilities so my study evaluate the interdependence between these two on the basis of above study.

**2.3 Summary**

The review suggest there is need of understanding the debt and saving by investigating how the household use their saving and debt , find out the interlinkages and the effect of indebtedness on financial assets(investment). Hence motivation of this research is to deeply investigate the saving and indebtedness simultaneously in perspective of Pakistan. This study is going to do the analysis on household level data. It is basically a micro level data from HIICS and PPHS/Access to finance. The uniqueness of the study is that it will be the first piece of study which will evaluate interdependence between the financial assets and indebtedness at the household level. Because most of the studies only consider the one aspect in case of Pakistan

# CHAPTER 3
# DATA AND METHODOLGY

There are two objectives of the study so evaluating these objectives there are different approaches of methodology and dataset.

## 3.1 For estimating the trends of household's saving and household's indebtedness

To find out the pattern of household's borrowing and saving in Pakistan the descriptive analysis will be used over the time period. For descriptive analysis use identification code which is provided by Pakistan Bureau of Statistics.

**Dataset:**

HIIES data will be used. That is the national source for Pakistan's household income and consumption data. It is a subcomponent of Social and Living Standard Measurement of Pakistan [PSLM]. The dataset covers the five rounds of HIES (2005–2006, 2007–2008, 2011–2012, 2015–2016 and 2018-2019). The reason behind the selection of time frame is that only these surveys have information about the debt and holding of financial assets. For estimating the purpose of household's borrowing will use the PPHS/PPHS (2010) which is most recent survey and covering the information of HIES surveys.

## 3.2 Interdependence between household debt and financial asset (investment)

**Model Specification**

To estimate the interdependence of liabilities and assets there is no availability of structural model Kukk (2014), the study depends on empirical models and use these models to investigate saving behavior and household borrowing.

Decisions regarding the holding assets and household debt are made in household at the same time but the driver can be changed from each other. There is evidence about the households who have

different relationships with saving and debt so that liabilities and assets can vary Meissner (2013).

There are many households who owns financial assets but a large number of households have no liabilities. As a censored variable the liabilities can be handled like the approach of Brown et al. (2013). Therefore literature suggest that there is an issue of selection (see Duca. (1993), Jappelli (1993) and Magri (2007)

The interdependence among liabilities and financial assets, keeping the assumption about the selection issue and using the cross-sectional data, holding of liabilities and financial assets are designed as a system of equations.

The equation is given as:

$$F_i = \alpha_1 + \gamma_1 L_i + X_i'\beta_1 + Z_{1i}'\emptyset_1 + \varepsilon_{1i} \qquad (1)$$

$$L_i = \alpha_2 + \gamma_2 F_i + X_i'\beta_2 + Z_{2i}'\emptyset_2 + \varepsilon_{2i} \qquad (2)$$

$F_i$ = households who hold of financial assets

$L_i$ = households who hold the liabilities

$X_i$ = column vector of exogenous variables

(Those exogenous variables that have impact on the volume of liabilities as well as financial assets)

$Z_{1i}$ = variables that only affect volume of financial assets

$Z_{2i}$ = variable that only affect holding of liabilities

$\varepsilon_{1i}$ = error term of financial assets

$\varepsilon_{2i}$ = error term of liabilities

As unobserved or unmeasured factors may affect decisions of households about the liabilities and financial assets, across the two regressions the error terms may be correlated. The exogenous variables are uncorrelated with error terms and they are determined outside the system. The error terms for liabilities and financial assets are correlated and these equations shows as a linear system which is named as seemingly unrelated regression model. Only this approach is used to handle such a set of equations is to consider the setup of simultaneous equations model is which one or more of the explanatory variables in one or more equations are itself the dependent (endogenous) variable associated with another equation in the full system. So the SUR model contains the equations in which the error term are assumed to be correlated. This approach is similar to Zinni (2013) use financial assets and liabilities as an exogenous variables.

## 3.3 Model to estimate the interdependence among liabilities and financial assets

For the model of liabilities and financial assets, the exogenous variables based on the study of determinants of household debt and saving of household. We will simultaneously run eq (1) and eq. (2) to check the interdependence between these two.

### 3.3.1 Determinant of financial assets (investment)

Weber (2010) and Browning & Lusardi (1996) provide an outline of the determinants household's saving behavior to determine financial assets. Toche (2009) suggest a structural model for consumption of "buffer stock" that provides target-level financial assets. Income of household expected income, interest rate, income uncertainty, relative risk aversion and impatience are important determinants of financial assets. According to Kulikov et al. (2007) in developing states wealth and income variables are key determinants of household saving.

Many studies argues that consumption of family, self-employment, education and age are significant for saving, see among others Browning and Lusardi (1996), Kulikov et al. (2007) and Tudela and Young (2005). Therefor it is presuming that component of wealth are interdependent, liabilities and real asset are taken as determinants of financial asset.

### 3.3.2 Determinants of liabilities

Determinants of household debt are investigated in another pillar of literature. Household debts demand can be categorized into participation decisions and the size or volume of debt demanded by household. The amount of liabilities relies on the supply of credit, like many households wants to borrow more but facing the credit constraint.

From life cycle model the household debts determinant is derived and they are like as for savings of household: interest rates and income dynamics Crook (2006). Empirical studies examining the determinants of debt supply and demand show that household debt depends on the education, age, net wealth of households and occupational status see Yilmazer and Devaney (2005) and Magri (2007). Albuquerque et al. (2014) estimates household debt's determinants and use homeownership as an explanatory variable along the total wealth. Homeownership includes additional information, in addition to data on the amount of real assets and is essential to credit supply. In vector of the homeownership is used for liabilities as an additional explanatory variable.

### 3.3.3 Variables in the selection model

For the equation selections, those variables are considered influencing the borrowing decision but have no impact on the amount of liabilities. Crook (2001) by using the US data found that the effect of being black raises the risk of being limited on credit but does not increase the debt demand of HH. Cox and Jappelli (1993) consider that credit market participation is influenced by the

marital status but it is not significant in investigating the amount of debt. Duca and Rosenthal (1993) evaluate that marital status is essential for ownership of debt but it is not essential for the debt volume. Despite the findings of the studies on credit market participation results, marital status (single, couple, widow or divorced) is used an additional variable in eq. (1) the bequest variable is also added as additional variable. Such factors are not related to liability volume when the households engage in credit markets, so they are explanatory factors and do not turn up in the liabilities regression. Arrondel et al. (2013) shows that in financial assets regression, the marital status is significant. Homeownership can be used as an additional explanatory variable for liabilities in the vector of $Z_2$.

## 3.4 The dataset and descriptive Analysis

### 3.4.1 Household integrated and economic survey 2018-19

The studies use data from the Pakistan's micro level data from Pakistan social and living standard measurement under special survey namely household integrated income and consumption survey (2018-19) has used which is compiled by statistical division of government of Pakistan. The survey is coordinated by household across the rural and urban communities. The dataset cover 22,461 households and the sample size which is use for analysis covers 7505 households.

Household integrated income and consumption survey contains very detailed cross section information about economic and demographic variables. The data set contains information about the components of household's wealth like liabilities, financial assets and real assets.

Liabilities include loan or debt which is borrow by the households. The survey also collects information about the repaid debt. The financial assets include the saving deposits, stocks and other securities purchased by the households.

Real assets cover the agriculture and non-agriculture lands commercial and residential buildings. The information about bequest is compile by creating the dummy for the households who receive a bequest of money or a deposits form.

Household's total income includes salaries, income from business, income from pensions, rental income and the income from other resources. Crook (2001) finds that household needs more debt when it has a higher income, when the larger family size when it owns its own home and the head is employed. To identify the income uncertainty, particular person's income increase variable is also included. Other socio demographic variables are used in the model these are education, age, marital status (single, couple, widow or divorced).

When calculating the main statistics the whole survey weigh is used but for estimating the eq (1) only the sample size is used. List of all variables that has been used in the model are given in table 3.1

**Table 3. 1** *Definitions of the variables*

Source: household integrated income survey (2018-19)

| Variables | Definition |
| --- | --- |
| Labilities | loan or debt borrowed by the households |
| Fin Asset | savings, stocks, securities and other financial assets |
| Inc | household's total income (business income, salaries, capital income and social benefits) |
| Real Asset | real assets (business activity, household equity and valuables) |
| Age | age of the household head |
| Education | levels of education category 2 and 3, if the household has secondary education its value is 2 and the household has tertiary education it takes the value 3 |
| Inc increase | dummy =1 if the households income increases than the average income, otherwise it takes the value 0 |
| Bequest | dummy=1 if any bequest received by a household in form of money, deposits or bonds Otherwise it takes the value 0 |
| Marital status | categorized variables for marital status, takes value 1 if the hh head is married; if the HH head is single it takes the value 2; if it is divorced takes the value 3 and if head of HH is widowed it takes the value 4 |
| Homeownership | dummy =1 if the households has residence otherwise=0 |

### 3.4.2 Statistic Summary

Statistic summary of all variables are given in table 3.2

*Table 3. 2* Statistic Summary

| Variables | Mean | Std. Deviation | Skewness | Kurtosis |
|---|---|---|---|---|
| Marital status | 1.97 | 0.365 | 0.845 | 15.490 |
| Age category | 45.7834 | 14.8656 | 0.041 | -0.2689 |
| Annual income | 5.3499 | 0.3468 | -1.01 | 1.662 |
| Inc income | 0.41 | 0.491 | 0.380 | -1.3856 |
| Real assets | 2648650.2 | 10518174.22 | 35.516 | 1939.16 |
| ED(secondary) | 0.35 | 0.478 | 0.613 | -1.624 |
| ED (territory) | 0.10 | 0.296 | 2.721 | 5.046 |
| Homeownership | 0.83 | 0.376 | -1.785 | 1.092 |

**Descriptive statistics**

In table, results reveal that the average mean of marital status is 1.97 which means the arithmetic mean is positive and 1.97. The Std. dev of marital status is 0.36 which shows that the marital status deviate from mean value is about 0.36. The value of skewness of marital status indicate the positively skewed distribution which is 0.84 in numbers. And the value of kurtoses shows that distribution is leptokurtic in nature because its value is greater than 3.

By examining the results of Age category, the mean value is positive and 45.78 in numbers, the age category deviate from its mean value by 14.86 numbers and the values of skewness and kurtosis shows the positive but platykurtic distribution.

The arithmetic mean of Annual income is 5.34 which is positive, and the dispersion of annual income is indicate by std. Dev which is 0.3. The value of skewness of annual income is -1.01 which

shows negatively skewed distribution and value of kurtosis is 1.66 which expresses platykurtic distribution.

The mean value of Inc. Income 0.41 which shows the positively arithmetic mean and it deviate from its mean value by 0.49. The distribution of the income increase is positive but leptokurtic because skewness and kurtosis values are 0.38 and -1.38 respectively. The mean of real assets is 2648650 which shows the large arithmetic mean and it disperse from its mean value by large positive number which is 10518174. And the distribution of the series of real assets is positive and leptokurtic in nature.

The result of ED (secondary) shows that the mean value of the series is 0.35 and it shows deviation by 0.47. The skewness and kurtosis value shows that the distribution of ED (secondary) is positive but platykurtic. Same as the result of ED (territory) indicate that the arithmetic mean is 0.10 which is positive in nature, the value of standard deviation is 0.29 which shows 0.29unit deviation from its mean value. The distribution of ED (territory) is positive but leptokurtic which is explained by the value of skewness and kurtosis.

And the results of Homeownership express that the mean value is positive and 0.83 in numbers. The dispersion value is 0.37 and the distribution of the series of homeownership is negatively sewed which is explained by the value of skewness and platykurtic in nature because the kurtosis value of homeownership is less than 3.

# CHAPTER 4

# ESTIMATIONS, RESULTS AND DISCUSSION

## 4.1 Trends of HH borrowing of Pakistan by using HIES data

For calculating the percentage of households who involve in borrowing, only consider those households who currently outstanding loan. Whereas the data description is mention in sec 3.

*Table 4. 1* Borrowing trends of households

| Survey duration of HIES | Currently outstanding loan | Borrowed in last year | Repaying loan last year | Households who involved in borrowing | Households who repaying their debts (last year) | Households who repaying their debt but have zero income | Sample size of HIES | Households who involve in borrowing (% of total HIES sample) | Households repaying debts(% of borrowing households) |
|---|---|---|---|---|---|---|---|---|---|
| 2005-06 | 4702 | 3530 | 1003 | 9235 | 1003 | 608 | 15045 | 31% | 10.80% |
| | | | | | | | | | |
| 2007-08 | 3430 | 2612 | 834 | 6876 | 834 | 510 | 15082 | 22.70% | 12% |
| | | | | | | | | | |
| 2011-12 | 4237 | 3327 | 745 | 8309 | 745 | 463 | 15298 | 27.60% | 8.90% |
| | | | | | | | | | |
| 2015-16 | 4383 | 3292 | 1080 | 8755 | 1080 | 852 | 23459 | 18.60% | 12% |
| | | | | | | | | | |
| 2018-19 | 5472 | 4130 | 1448 | 11050 | 1448 | 1067 | 23933 | 22.80% | 13% |

The frequency of borrowing of households over the time is described in table 4.1. The representation of households who involved in borrowing by the households who kept loan, borrowed in last year and repaid their loan in last year. According to the surveys of HIES in 2005-06 the households involve in borrowing percentage was 31% and the households who repaying the debt in this period was only 10.8%. The interesting fact is that more than 50% of the households who repaid their debt are those households who reported zero income. On the other hand in 2007-08, 22.7% of the households involve in borrowing which is less than the previous year whereas the 12% of the

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households who repaid their debt in that period which is more than previous year. In 2011-12 HIES data shows that 27.6% of the households were involved in borrowing which is again more than previous year and 8.9% of the households were repaid their debt. There were some households who repaid their debt and reported zero income. According to 2015-2016 data 18.6% of the households who involved in borrowing which is less than previous year and only 12% of the households repaid their debt which is more than previous year. And the last row of table 1 shows that in 2018-19 which is advanced survey of HIES reported 22.8% households involved in borrowing and more than 70% households are those who repaid debt with zero income whereas only 13% of the households repaid their debt which is the highest figure of all surveys. The result is consistent with the study of Javed et al. (2019). Table 4.1 concluded that households of the Pakistan were unable to pay their debt from 2005 to 2019.

**4.2 Households saving trends in Pakistan by using HIES data**

Savings can be described as the mechanism by which a portion of current income is set aside for future use. Table 4.2 indicates the results of households saving behavior in Pakistan. Households involved in saving is calculated by considering the households who currently involve in saving and households who saved last year. According to HIES survey of 2005-06 only 18% of the households who involve in saving. In 2007-08 the households saving ratio is only 0.9% increase from the previous years and if measured the household savings in 2011-12 the households saving is decreased by 6.9% which indicate very sharp decline in households saving. Whereas the data of 2015-16 point out 3% increase in households saving. According to 2018-19 only 1% increase in households saving. Households saving data concluded that over the time percentage of saving is decreased because in 2007-08 the saving percentage is 18.9% but in 2018-19 (which is latest survey) the household saving is 16%.

*Table 4. 2* Saving trends of households

| Survey duration of HIES | Currently saving | Saving last year | Households involved in saving | Households involved in savings (last year) | Households saving but have zero income | Sample size of HIES | Households involve in saving (% of total HIES sample) |
|---|---|---|---|---|---|---|---|
| 2005-06 | 2770 | 2170 | 4940 | 2170 | 1440 | 15045 | 18% |
| 2007-08 | 2865 | 2516 | 5381 | 2516 | 1680 | 15082 | 18.90% |
| 2011-12 | 1908 | 1443 | 3351 | 1443 | 1027 | 15298 | 12% |
| 2015-16 | 3581 | 2812 | 6393 | 2812 | 2197 | 23459 | 15% |
| 2018-19 | 3834 | 2754 | 6588 | 2754 | 1824 | 23933 | 16% |

Saving and borrowing varies over the time varies the overall saving is decreased and the borrowing pattern of the households are increased. The social and economic implications of debt, especially excessive debt, are of particular concern in Pakistan. So, there is a need to know why the households hold debt what is the purpose behind it. And if they borrow so what are the sources of their borrowing.

**4.3 Sources of household borrowing in Pakistan**

By using the latest round of PPHS (2015) figure 4.1 shows the sources of household borrowing. PPHS is used here because the HIES don't give any information about the sources and purposes of the household borrowing. It is essential to consider that PPHS basically use samples of HIES. Fig 1 suggests the different sources of borrowing of the households in Pakistan. The vital source of household borrowing is retailer/storeowner/shopkeeper, with 45% of households borrowing from this resource. Most of the people turns towards their family members or relatives for credit, around about 20% of households borrowing in this way. Approximately 14% of the households borrow from their friends which is most common way of borrowing. Only 3% of the households go to landlords for borrowing and also get 3% from committee and 4% of the households borrow from formal credit market (banks) so there is need to overcome the role of informal markets.
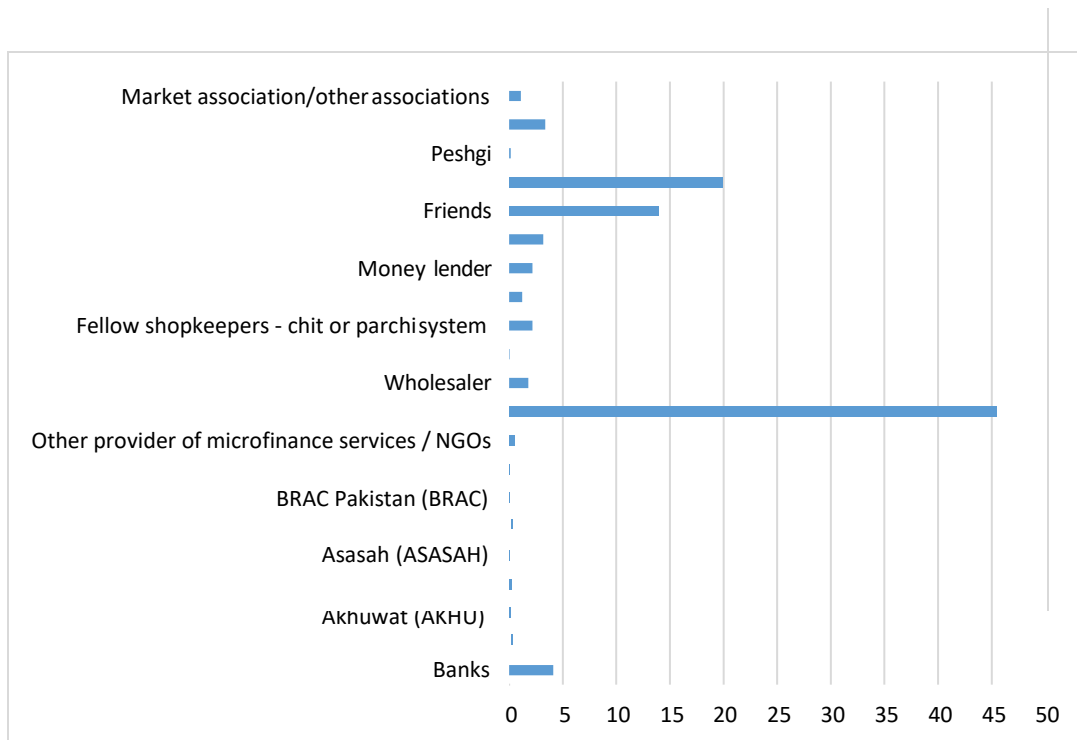


*Figure 4. 1 (sources of borrowing)*
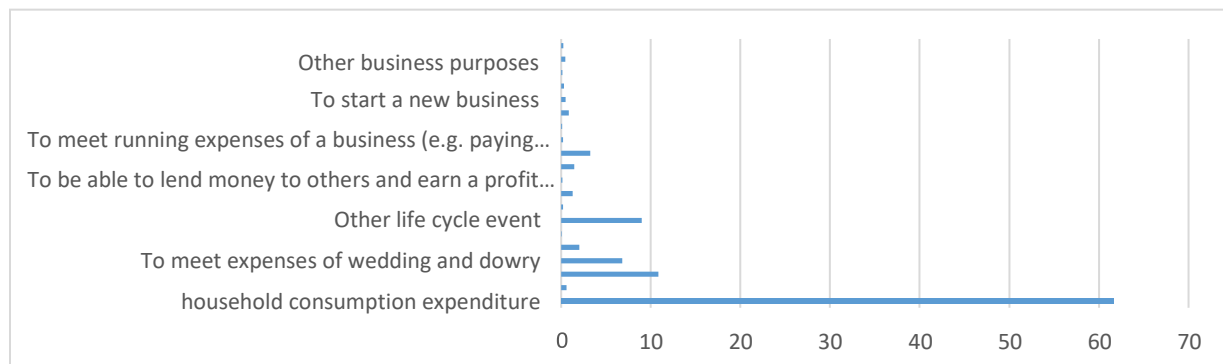
## 4.4 Purpose of household borrowing



*Figure 4. 2 (purpose of borrowing)*

Fig 4.2 indicates the various purposes of borrowing. 61% of the household borrow to fulfil their consumption needs including expenditure of good items, travelling expenses, utility bills, residence and maintenance costs. Second most important reason of borrowing is medical expenses that is about 11%. To meet the expenses of wedding and dowry the household borrow about 7%. And 9% for other life cycle events. Such trends correlate with the literature findings that informal loans are primary used to level the household expenditure on a regular basis (Schindler, 2010), and maximum credit are used for marriage and death events, expenses of health, other debts repayment and educational costs (Agier, 2012).

Only some of households borrows for business needs. Households that use their loans to generate income in their business are in a better position to repay their loans than those that use their loans for immediate consumption. However, it should be noted that starting a business entails special risks, especially for poor people who are limited by capita.

## 4.5 Purposes of household saving
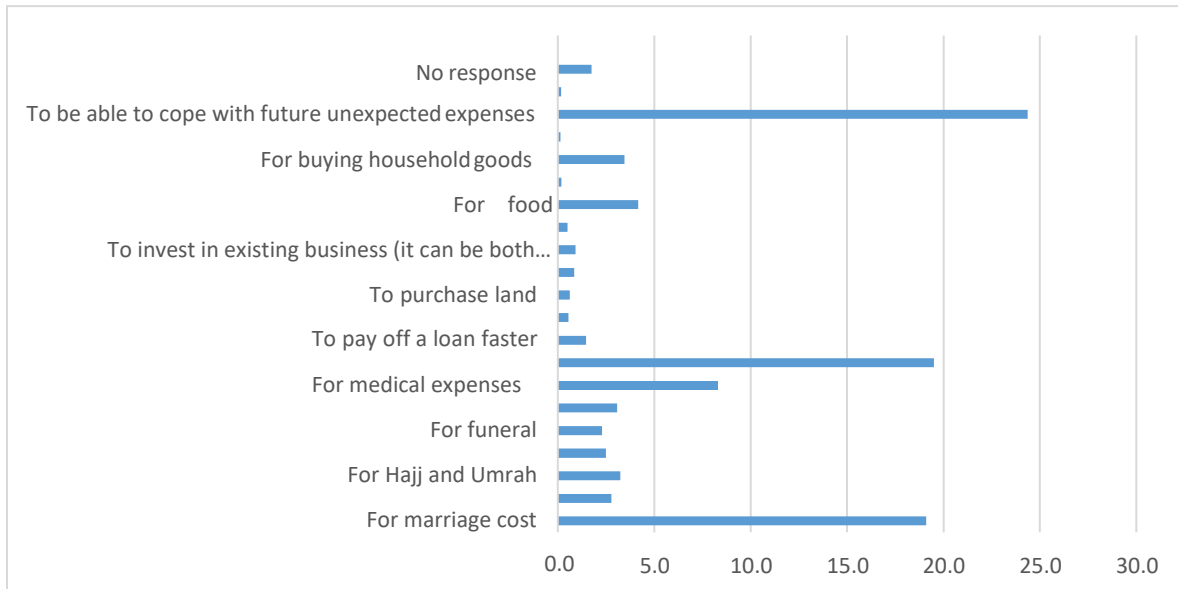


*Figure 4. 3 (purpose of saving)*

Like household borrowing purposes there are purposes of the household saving which are shown in fig 4.3. 24% of the households move towards saving for unexpected future events. About 20% of the households save to meet the marriage expenses in future 20% save for their family in case of some things happens to their life so the household prefer to save for future rather than investing in projects because saving behavior of households for business purpose is very low. Households also save for consumptions (food, goods, property and residence), education, and funerals and for medical expenses.

Blanc et al (2015) indicates the three reasons of saving, namely saving for saving for old-age provision, home purchase, and saving for unexpected events.

## 4.6 Sources of the household saving
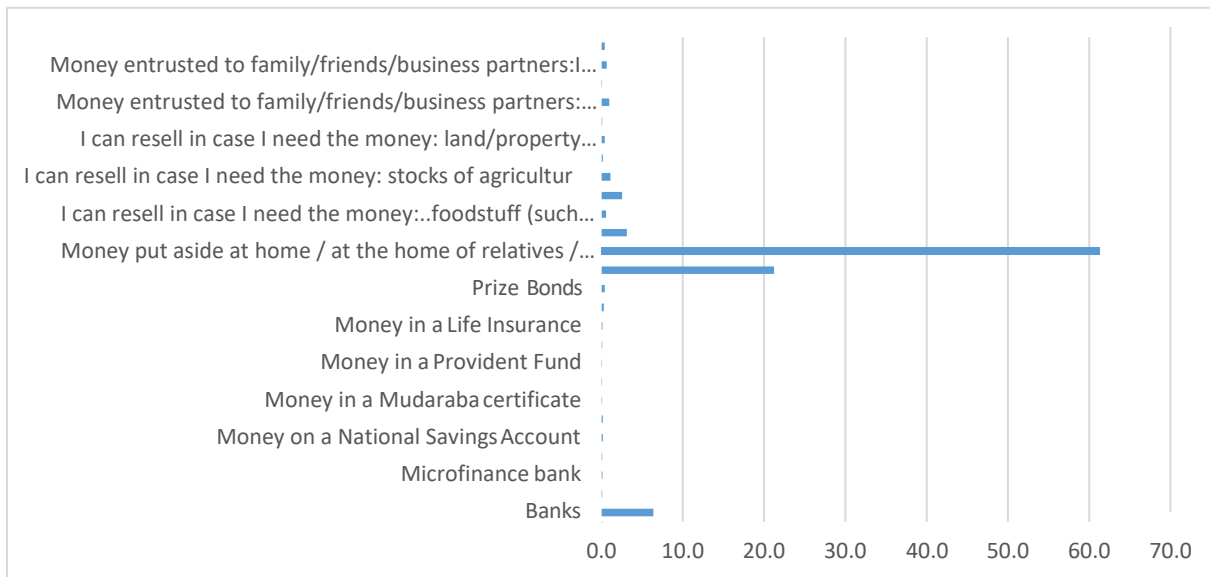
Sources of household saving indicates in fig 4.4. Household have different choices to put their money. The most awkward situation is that 61% household let their saving in homes or in relatives' home. To grow out money saving is the first step. But simply saving is nothing. Investor should go further and invest that saving to create the wealth.21% of the households put their savings in committees which also do not have any positive impact. Money saved but not invested is not an effective way.6% of the household put their savings in banks. The only way your money can grow is to invest it in a mixture of financial products according to your investment horizon and risk appetite. So the sources of saving must be shifted from unproductive to productive source

## 4.7 Descriptive statistics for financial assets and liabilities

Table 4.3 indicate that in HIIS dataset 18% of the households are indebted and about 17% of the households hold financial assets it means households prefer more debt. Few of them households

reported that they hold both liabilities and financial assets. The study basically evaluate whether financial assets and liabilities holding dependence on each other.

*Table 4. 3* **Penetration of indebted households**

| Total no of observation | 22461 |
|---|---|
| Household with liabilities | 4122 |
| Household w/o liabilities | 18339 |
| Share of household with liabilities | 18% |
| Share of households with financial assets | 17% |

## 4.8 The estimation for liabilities and financial assets

### 4.8.1 The baseline estimation

The relationship of financial assets and indebtedness of the household is evaluated by the system of equations (1) and (2) which is derived in section 3

The variables that include in vector $X$, and can be listed. Age, income, real assets, education, future income increase of the household are appear in vector $X$ and these variables are common for both equations. Bequest in the form of dummy and marital status appear in $Z_1$, while homeowner dummy appears in $Z_2$.

The model is estimated by seemingly unrelated regression model, where in the regression the liabilities and financial assets are on the RHS. The estimation's result of baseline model are shown in table 4.4

*Table 4. 4* **Liabilities and financial assets estimation**

| Dependent variable | (1) Financial assets | (2) Liabilities |
|---|---|---|
| Liabilities | -0.310 | .. |
| | (0.000) | |
| Financial assets | .. | -0.026 |
| | | (0.000) |
| Inc | 443953.4 | 24855.19 |
| | (0.000) | (0.095) |
| Real assets | 0.005 | 0.0002 |
| | (0.000) | (0.539) |
| Age category | 61455.20 | 8082.53 |
| | (0.000) | (0.002) |
| Education | | |
| Secondary | 54276.6 | 2732.28 |
| | (0.029) | (0.706) |
| Territory | 149522 | -21152.58 |
| | (0.0005) | (0.0809) |
| Inc increase | -55495.0 | -177.92 |
| | (0.104) | (0.985) |
| Observations | 6508 | 6508 |
| Mean | 162952.2 | 62987.93 |
| S.D | 908846.2 | 259592.1 |

Note: The complete estimation for system of equations using SUR model. The significance level is checked at 1% 5% and 10%. No of observations refer to sample size of data.

By SUR model the system of equations is estimated. Where on the RHS of regression the liabilities and financial assets are appears. In table 4.4, the baseline estimations results are given. Column (1) have estimations results of equation (1) where the financial assets is dependent variable whereas column (2) gives estimation results of equation (2) where the household liability is dependent variable.

The special notice is interdependence among the household liabilities and financial assets, with observation of financial assets impact on the liability. However, literature also guide that the financial behavior of household is affected by the household indebtedness. In table 4.4, column (1) results shows that impact of liability on the financial assets is negative. If the household's liabilities increase by 1% its financial assets are reduced by 31%. Brown et al. (2013) jointly modelled the liabilities and assets and found negative relationship among liabilities and assets.

The findings of numerous studies suggest a favorable link among the debt balance and net wealth Magri (2007) and Cox and Jappelli (1993). Like other research, the linkage of household liabilities and net worth in this study is positive (not reported), but it is not possible to find a positive relationship between liability when real assets are separated from the financial assets.

Yilmazer & Devaney (2005) found negative relationship among financial assets and debt of household. The results of system of equation indicate that holding of less amount of financial assets are related to higher amount of liabilities.

Table 4.4 also shows negative impact on liabilities by the financial assets of the household. If the financial assets is increase by one percent its liability is decrease by 2.7%. Financial asset shows negative and significant impact at 1% level of significance.

There are few researches which works on the relationship of wealth components. The other socio demographic and economic variables are investigated with respect to assets and liabilities. With financial assets and liabilities, the income have a positive and significant relationship like kukk (2014). But income is more significant in case of financial asset. Income is related to the capacity to accumulate the assets so it is expected to have a positive relation with it. An income increase by one percent then financial assets increased by 443953.4 rupees. Arrondel et al. (2013) also found a positive relation of income and financial assets by using HFCS. The modest relationship between

the household liabilities and income is similar to Duca and Rosenthal (1993) and Crook (2001) while Bover et al. (2014) finds the positive relationship between the debts of euro area countries using HFCS dataset.

The age coefficient of the household head is positively and significantly related to the financial assets holding like kukk (2014). If age of the household increase by one year then financial assets of the household increase by 61455.20 rupees. Whereas in case of Pakistan age coefficient also shows positive relationship with liability. So, along the age of household the liability of the household is also increase by 8082.53 rupees.

The household education has different impact on the liabilities and the financial assets. Higher education category indicate the significant impact on financial assets, which is consistent with other studies see Arrondel et al. (2013), Attanosio and Weber (2010). But if the households education grade up to the household hold more liability in case of Pakistan.

The dummy of income increase has insignificant relation with financial assets at 10% of significance, it is coherent with kukk (2014) so it indicates that if the household income is more than the average value but household don't prefer to hold a financial assets in Pakistan. Whereas on the liability it has also negative insignificant impact.

Table 6 indicate the relationship of household financial assets and liabilities with the real assets holding. The results reveal that real assets has positive relationship with both liabilities and financial assets like kukk (2014). In case of financial assets the results are significant. So if the household hold real assets so they also holds financial assets. While the liability has insignificant relationship with real assets in case of Pakistan like kukk (2014).

The impact of socio-demographic or economic variables in current analysis is not symmetric relation with household's liabilities and financial assets of household. The liabilities impact on

financial assets is negative and it is a sign of increased indebtedness. Rising debt penetration is linked with lower financial asset accumulation among a growing number of households. Those households who are already indebted could be more likely to use borrowing in the face of negative income shocks. Therefore, the negative association between financial assets and liabilities that increase the volume of financial vulnerability of indebted families, because they have less available capital when a negative shock hits them. Might be negative relationship occur between them because household use financial assets for repaying their debt like Chakrabarti et al. (2011).

As the literature suggest that household indebtedness affects he financial behavior of the household, Brown et al. (2013)also shows the association between the debt and assets at the household level. Kukk (2014) discuss that liabilities of households negatively impact their financial assets. The result of study is consistent with above study because it also shows household liability negatively affect the financial assets and there is negative impact of financial assets on liabilit

# CHAPTER 5

# SUMMARY AND CONCLUSION

This study aims to investigate the household indebtedness and financial assets, i.e., investment in specific, which is a hardly investigated area in research in the last decade particularly. This study used the data from the household integrated economic survey (HIES) data over the period 2005-2019 for the case of Pakistan. This study utilizes the household information regarding savings and borrowing, that evaluate the patterns as well as the purpose of savings and borrowing via descriptive analysis.

Also, this study utilizes the HIES cross-sectional data throughout 2018-2019 to investigate the relationship between financial assets and liabilities. Additionally, the data also covers demographic and socioeconomic variables such as, age, marital status, household's real assets' income etc. It is important to evaluate the household's component of the wealth to understand the household's saving and borrowing decisions. The socioeconomic and demographic variables showed mixed results concerning financial assets and liabilities (See Section 4). Based on theory and available literature, this study employed seemingly unrelated regression (SUR) model to identify the impact of explanatory variables over dependent variable.

The empirical findings of this study concerning saving pattern of the households reveal that the ratio of household's savings reduced over the time. However, the borrowing pattern did not show steady pattern; instead, it fluctuates over time by reporting ups and downs across the time. . It is found that the main reason behind the household's debt is consumption-based expenditures like marriage, funeral as well as also used for education and consumption particularly, households save portion of their income for rainy days (unexpected events). Moreover, the findings illustrate that

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the households' liabilities negatively influence their financial assets and the financial assets negatively affect the household liability which is evident of the interdependence of financial assets and liabilities. Hence, the theoretical assumption that the credit market reduced the household's financial assets is also backed this study.

Beside these, the data shows only 17% of households have financial assets, which is way less than developed and emerging economies. But this may be the reason that household do not have knowledge about the holding of financial assets, and they prefer to hold the real assets, which is the indication of the low level of financial literacy and financial inclusion.

The study opens the door for further investigation of interdependence between the different types of financial assets and liabilities in Pakistan and in other developing countries

# POLICY RECOMMENDATIONS

On the basis of results, the current study suggests that:

- Most of the people put their savings at home or at friend's home so there is a need to educate the households to put their savings in useful projects. Government should encourage those households by giving incentives, who let their saving for investment. This will not only improve the financial well-being of the households, but also increase financial inclusion.

- Most of the households borrow from informal credit market so government should design a mechanism that facilitate the households and make the market efficient. And this may be possible by reducing the interest rate, making the documentation process easy for people, and adopting the advance technology that help the needy beyond time constraints.

- Government should take other initiatives like national financial literacy program for youth (NFLP-Y). This will not only increase the financial literacy and understanding about holding financial assets, but also speed up the financial inclusion in Pakistan, which in turn contributes to the economy.

**Limitation of study**

Limitation to this study that earlier studies include financial liability but in the case of Pakistan Financial liability data has not given in HIES survey so in this study household liability has taken.

# References

Abid, saleem , Afridi, G. S. (2010). *Assessing the Household Saving Pattern of Urban and Rural Households in District Muzaffarabad. 8*, 137–141.

Agier, I. (2012). The role of credit officers in the performance of micro loans. *Economics of Transition*, *20*(2), 271-297.

Ahmad, Mehboob Asghar, T. (2004). Estimation of distribution of income in Pakistan, using micro data. *Pakistan Development Review*, *39*(4 PART II), 807–824.

Ahmad, F. (2015). *DETERMINANTS OF SAVINGS BEHAVIOR IN PAKISTAN : LONG RUN - SHORT RUN ASSOCIATION AND CAUSALITY. 8*(1), 103–136.

Ahmad, M. H., & Atiq, Z. (2006). *THE IMPACT OF DEMOGRAPHY , GROWTH AND PUBLIC POLICY ON HOUSEHOLD SAVING : 13*(2), 57–71.

Albuquerque, B., Baumann, U., & Krustev, G. (2014). *Has US household deleveraging ended? a model-based estimate of equilibrium debt*. (16).

Ando, A., & Modigliani, F. (1963). The" life cycle" hypothesis of saving: Aggregate implications and tests. *The American economic review*, *53*(1), 55-84.

Andrews, D., Sanchez, A. C., & Johansson, Å. (2011). Housing markets and structural policies in OECD countries (OECD Economic Department Working Papers, p. 836).

Arrondel, L., Bartiloro, L., Fessler, P., Haliassos, M., & Lindner, P. (2013). How do households choose to allocate their wealth? Some stylized facts derived from the Eurosystem Household Finance and Consumption Survey * Version: 9. October 2013 Luc Arrondel. International Journal *of Central Banking*, *12*(October), 1–45.

Barba, A., & Pivetti, M. (2009). Rising household debt: Its causes and macroeconomic implications - A long-period analysis. *Cambridge Journal of Economics*, *33*(1), 113–137.

Bhatt, V. V. (1991). On Improving Effectiveness and Efficiency of Financial System in India. *Economic and Political Weekly*, 2367-2372.

Bautista, R. M. & Lamberte, M. B. (1990). Comparative Saving Behavour of Rural and Urban Households in the Philippian. *Philippian Institute for Development Studies. Working Paper Series No. 90-15*, (90), pp: 90-15.

Bayoumi, T. (1993). *Financial Deregulation and Household Saving Author ( s ): Tamim Bayoumi Published by : Wiley on behalf of the Royal Economic Society Stable.*

Brandolini, A., Magri, S., & Smeeding, T. M. (2010). Asset-based measurement of poverty. *Journal of Policy Analysis and Management*, *29*(2), 267–284.

Brown, S., Garino, G., & Taylor, K. (2013). Household debt and attitudes toward risk. *Review of Income and Wealth*, *59*(2), 283–304.

Brown, S., & Taylor, K. (2008). Household debt and financial assets: Evidence from Germany, Great Britain and the USA. *Journal of the Royal Statistical Society. Series A: Statistics in Society*, *171*(3), 615–643.

Browning, M., & Lusardi, A. (1996). Household Saving: Micro Theories and Micro Facts. *Journal of Economic Literature*, *34*(4), 1797–1855.

Carroll, C., Slacalek, J., Sommer, M., Ramey, V., Reis, R., Robinson, D., & Wright, J. (2012). *Working Paper Series Dissecting Saving Dynamics Measuring Wealth ,*. (1474).

Challe, E., & Ragot, X. (2014). Precautionary Saving Over the Business Cycle. *Economic Journal*, *126*(590), 135–164.

Coletta, M., De Bonis, R., & Piermattei, S. (2014). The Determinants of Household Debt: A Cross-Country Analysis. *SSRN Electronic Journal*, (January 2018).

Cosma. S., & Pattarin, F. (2010). Attitudes, Personality Factors and Household Debt Decisions: A Study of Consumer Credit.

Costa, S., & Farinha, L. (2012). *Households ' indebtedness : a microeconomic analysis based on the results of the households ' financial HOUSEHOLDS ' INDEBTEDNESS : A MICROECONOMIC ANALYSIS BASED ON THE RESULTS OF THE HOUSEHOLDS ' FINANCIAL*. (April).

Crook, J. N. (2006). The Economics of consumer credit. In *Choice Reviews Online* (Vol. 45).

Crook, J. (2001). The demand for household debt in the USA: evidence from the 1995 Survey of Consumer Finance. *Applied Financial Economics*, *11*(1), 83-91.

Davis, S. J., Kubler, F., & Willen, P. (2006). *Borrowing Costs and the Demand for Equity over the Life Cycle Author ( s ): Steven J . Davis , Felix Kubler and Paul Willen Source : The Review of Economics and Statistics , Vol . 88 , No . 2 ( May , 2006 )*.

Davutyan, N., & Öztürkkal, B. (2016). Determinants of saving-borrowing decisions and financial inclusion in a high middle income country: The Turkish case. *Emerging Markets Finance and Trade*, *52*(11), 2512-2529.

Debelle, G. (2004). Macroeconomic Implications of Rising Household Debt. *SSRN Electronic Journal*, (153).

Duca., J. V. S. S. R. (1993). *Federal Reserve Bank of Dallas*. (124).

Faridi, M., & Bashir, F. (2010). Households Saving Behaviour in Pakistan: A Case of Multan District. *Pakistan Journal of Social Sciences (PJSS)*, *30*(1).

Fabbri, D., & Padula, M. (2004). *Does poor legal enforcement make households credit-constrained?. Journal of Banking & Finance, 28*(10), 2369-2397.

Gao, W., & Ishida, M. (2001). Savings Mobilization in rural areas of China: Special reference to Chinese rural credit co-operative. *Bulletin of the Faculty of Bioresources-Mie University (Japan)*.

Girouard, N., Kennedy, M., Andre, C., & André, C. (2006). Has the Rise in Debt Made Households More Vulnerable? *Housing Finance International*, *22*(1), 21–40.

Haq, W., Ismail, N. A., & Satar, N. H. M. (2018). Household debt in different age cohorts: A multilevel study. *Cogent Economics and Finance*, *6*(1).

Jalal, S., & Younis, M. Z. (2014). Aging and Elderly in Pakistan. *Ageing International*, *39*(1), 4–12.

Jappelli, D. C. and T. (1993). *The Effect of Borrowing Constraints on Consumer Liabilities Author ( s ): Donald Cox and Tullio Jappelli Source : Journal of Money , Credit and Banking , Vol . 25 , No . 2 ( May , 1993 ), pp . 197-213 Published by : Ohio State University*

Javed, S. A., Ali, W., & Baig, I. (2019). *Household debt in Pakistan, Conflict, borrowing and structural indebtedness*.

Kast, F., & Pomeranz, D. (2014). *Saving more to borrow less: Experimental evidence from access to formal savings accounts in Chile* (No. w20239). National Bureau of Economic Research.

Kim, H., & DeVaney, S. A. (2001). The determinants of outstanding balances among credit card revolvers. Journal of Financial Counseling and Planning, 12(1), 67–79.

Kim, H. J., Lee, D., Son, J. C., & Son, M. K. (2014). Household indebtedness in Korea: Its causes and sustainability. *Japan and the World Economy*, *29*, 59-76.

Kohn, D. L., & Dynan, K. E. (2007). *The rise in US household indebtedness: causes and consequences* (No. 2007-37). Board of Governors of the Federal Reserve System (US).

Krugman, G. B. E. P., & In. (2012). DEBT, DELEVERAGING, AND THE LIQUIDITY TRAP:

A FISHER-MINSKY-KOO APPROACH* Gauti B. Eggertsson Paul Krugman. *Quarterly Journal of Economics*, 1469–1513.

Kukk, M. (2014). Distinguishing the Components of Household Financial Wealth : the Impact of Liabilities on Assets in Euro Area Countries Merike Kukk. In *Working Paper*.

Kulikov, D., Paabut, A., & Staehr, K. (2007). A Microeconometric Analysis of Household Saving in Estonia : Income , Wealth and Financial Exposure. *Exposure*, (May).

Lea, E. G., Webley, P., & Levine, R. M. (1993). The Economic Psychology of Consumer Debt. Journal of Economic Psychology, 14(1), 85-119.

Lea, E. G., Webley, P., & Walker, C. M. (1995). Psychological Factors in Consumer Debt: Money Management, Economic Socialization and Credit Use. Journal of Economic Psychology, 16(4), 681-701.

Leonard, T., & Di, W. (2014). Is household wealth sustainable? An examination of asset poverty re-entry after an exit. Journal of Family and Economic Issues, 35(2), 131–144.

Lunt, P. K., & Livingstone, S. M. (1991). Psychological, Social and Economic Determinants of Savings: Comparing Recurrent and Total Savings. Journal of Economic Psychology, 12(4), 621-641.

Lorenzoni, G., & Guerrieri, V. (2011). Credit crises, precautionary savings and the liquidity trap. In *2011 Meeting Papers* (No. 1414). Society for Economic Dynamics

Magri, S. (2007). Italian households' debt: The participation to the debt market and the size of the loan. *Empirical Economics*, *33*(3), 401–426.

Meissner, T. (2013). Intertemporal consumption and debt aversion: an experimental study. *Experimental Economics*, *19*(2), 281–298.

Muradoglu, G., & Taskin, F. (1996). Differences in household savings behavior: Evidence from industrial and developing countries. *Developing Economies*, *34*(2), 138–153.

Nakornthab, D. (2010). *Household Indebtedness and Its Implications for Financial Stability*. South-East Asian Central Banks, Research and Training Centre.

Nakajima, M. (2012). Rising indebtedness and temptation: A welfare analysis. *Quantitative Economics*, *3*(2), 257–288.

Pagano, T. J. and M. (1994). *Saving , Growth , and Liquidity Constraints Author ( s ): Tullio Jappelli and Marco Pagano.*

Philbrick, P., & Gustafsson, L. (2010). Australian Household Debt-an empirical investigation into the determinants of the rise in the debt-to-income ratio. *Lund University Department of Economics*.

Salotti, S. (2009). *GLOBAL IMBALANCES AND HOUSEHOLD SAVINGS : THE ROLE OF WEALTH*. (17729).

48

SBP. (2016). Flow of Funds Accounts of Pakistan. In *Flow of Funds and Price & Publication Division Statistics & DWH Department*.

Schindler, K. (2010). Credit for what? Informal credit as a coping strategy of market women in Northern Ghana. *The Journal of Development Studies*, *46*(2), 234-253.

Sufi, A. R. M. A. (2010). *HOUSEHOLD LEVERAGE AND THE RECESSION OF 2007 TO 2009*.

The Eurosystem Household Finance and Consumption Network. (2013). *The Eurosystem Household Finance and Consumption Survey-Results from the First Wave*. 114.

Toche, C. D. C. P. (2009). A Tractable Model of Buffer Stock Saving. *Journal of Chemical Information and Modeling*, *53*(9), 1689–1699.

Tudela, M., & Young, G. (2005). The Determinants of Household Debt and Balance Sheets in the United Kingdom. *SSRN Electronic Journal*.

Tufano, A. L. P. (2015). *DEBT LITERACY, FINANCIAL EXPERIENCES, AND OVERINDEBTEDNESS*. *2*(5), 255.

Van der Klaauw, W., Chakrabarti, R., Zafar, B., & Lee, D. (2011). *Household debt and saving during the 2007 recession* (No. 482). Federal Reserve Bank of New York.

Wajiha, H. (2018). *Household debt and financial wellbeing in Pakistan/Wajiha Haq* (Doctoral dissertation, University of Malaya).

Weber, O. P. A. G. (2010). CONSUMPTION AND SAVING: MODELS OF INTERTEMPORAL ALLOCATION AND THEIR IMPLICATIONS FOR PUBLIC POLICY. *Journal of Chemical Information and Modeling*, *53*, 87.

Wu, S., Shen Tutor, W., Johan Klaesson, P., & Orsa Kekezi, C. (2017). *Title: The relationship between credit constraints and household risky assets Authors*. (May).

Yilmazer, T., & Devaney, S. A. (2005). Household debt over the life cycle. *Finance Services Review*, *14*(X), 285–304.

Young, A. D.-R. and G. (2005). *The impact of unsecured debt on financial distress among British households*. *Oct-Dec*(19).

Zinni, M. B. (2013). *Household Financial Wealth Household Financial Wealth*. *11*(3).