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The Wealth and Debt of Thai Households:
Risk Management and Financial Access[*]

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Abstract

Risk pervades everyday life. The financial sector can play a key role in augmenting the ability of households to both self-insure and cross-insure. Although a well-functioning financial sector helps households manage risk and accumulate wealth, rising financial access itself brings new types of risks to households. Innovative saving and debt instruments are expected to bring opportunities to households, but they may also bring a greater variety of risks. Excessive borrowing may weaken household balance sheets and expose households to various shocks. Given sufficiently weak balance sheets and strong enough shocks, households may face cash-flow problems, loan default, insolvency and foreclosure. The surge in Thai household debt over the past few years and the recent US sub-prime turbulence have brought this concern to the forefront of the policy debate.

In order to inform the policy debate, this paper asks the following questions: what is the current state of financial access? Does financial access augment household resiliency in the face of shocks? The paper finds show that household balance sheets are, in general, strong and that financial access augments household resiliency in the face of shocks. Leverage, however, increases household exposure to interest-rate shocks. Low-income households are more exposed due to their higher leverage. The paper also reports that low-income rural households lack access to basic financial services due to low financial literacy, inadequate income and collateral constraints, and unsuitability of product design. Middle-income households have access to basic services, but show low depth of usage. Policy recommendations include improving financial literacy, enhancing quality of information available to financial users and providers, and encouraging product innovation. Enhanced financial access also increases the effectiveness of monetary policy transmission.

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The Wealth and Debt of Thai Households: Risk Management and Financial Access

1   Introduction

Risk pervades everyday life. Risk, whether in the form of the weather, price fluctuations, or illness, has been part of human society since time immemorial. There are certain risks, such as the risk of earthquake, that are unavoidable. There are also risks, such as the risks specific to certain locations or certain economic ventures, that can be avoided. For example, a farmer can avoid, to a large extent, the risk of coffee price fluctuation by simply not cultivating coffee. One can avoid airplane accidents by not traveling by air. However, risk is often associated with many beneficial economic ventures. Rather than eschewing risky economic ventures altogether, households have often chosen to pursue risky economic ventures. Indeed, farmers in many countries, from present-day Indonesia to ancient Rome, risk living near volcanoes in order to till the rich volcanic soil.

The challenge for households is therefore not to avoid risk altogether, but rather how to live with risk that arises either from providence or from their own choosing. To this end, households have learnt how to live with risk not through blithe acceptance but through managing risk. Risk can be managed through self-insurance or cross-insurance. Self-insurance refers to the precautionary accumulation of buffer stocks and savings, which can be drawn during times of economic hardship. Cross-insurance refers to implicit or explicit arrangements for households with positive income shocks to send resources to households with negative income shocks. A common example is that of the tendency for households with bountiful harvests to send remittances to those less fortunate.

The financial sector can play a key role in supporting the ability of households to both self-insure and cross-insure. The financial sector facilitates self-insurance by helping households to accumulate savings in the form of various assets from housing and land to saving deposits and shares. A developed financial sector also allows households to implicitly cross-insure one another. A good financial sector allows excess funds from well-off households to flow to households in need of funds in the wake of temporary negative economic shocks, such as illness or unemployment. Financial access therefore helps households to smooth their consumption. In addition, the financial sector also facilitates the flow of remittances sent from one household with excess liquidity to another that is facing a shortfall of funds. A network of households and other economic agents, linked via the financial sector, can thus effectively lessen individual burdens of risk by allowing the effects of risk to be shared by society as a whole.

Financial access, particularly if not well implemented, can a double-edged sword. Although a well-functioning financial sector helps households manage risk, rising financial access itself brings new types of risks to households. Innovative saving and debt instruments are expected to bring opportunities to households, by facilitating wealth accumulation and lowering credit constraints, but they may also bring a greater

variety of risks. Excessive borrowing may weaken household balance sheets and expose households to various shocks. Given sufficiently weak balance sheets and strong enough shocks, households may face loan default, insolvency and liquidation. Given a large enough aggregate shock, household instability may spread to the financial sector. The surge in Thai household debt over the past few years and the recent US sub-prime turbulence have brought this concern to the forefront of the policy debate.

In order to better inform the policy debate, this paper pursues **two main research objectives** designed to take advantage of new household data. **The first objective** is the measurement of the household balance sheet at the macroeconomic and microeconomic levels and the determination of whether households are unduly exposed to certain economic shocks given rising financial access. The paper uses **household survey data** from the National Statistical Office (NSO) from a joint project between the Bank of Thailand and NSO fielded with the Socioeconomic Survey in the fourth quarter of 2006. This survey is a first attempt to measure household debt and assets across Thailand in order to obtain representative balance sheet at the microeconomic and macroeconomic levels.[3] The survey also measures various dimensions of financial access and financial literacy. **The second objective** is the conceptualization of household financial access and the measurement of the current breadth and depth of financial access among households. After establishing the current state of financial access, the paper moves on to examine the interaction between financial access, economic shocks and risk management.

The **research contributions** of this paper are therefore three-fold: first, the measurement of the household balance sheet at the macro and micro levels; second, the measurement of financial access; and third, an understanding of the relationship between household fragility, the household balance sheet, economic shocks, and financial access.

This paper consists of two main parts. The first part of the paper measures the household balance sheet and discerns whether household are vulnerable to economic and interest-rate shocks under rising financial access. The second part of the paper reports the current state of financial access of the Thai household sector. The study first puts forward an analytical and measurement framework for financial access. Second, it measures the current status of financial access of Thai households. Third, it proposes policy direction for promoting sound financial access.

The first part of the paper constructs the household balance sheet from data on household assets and debt. Portfolio composition and exposure to various risks are analyzed. It then investigates household resiliency to various shocks and the implications for household stability, loan default, and financial stability. On overall, household balance sheets appear to be strong although certain households in the low income deciles exhibit high leverage. Financial access is found to benefit household resiliency although excessive leverage increases household exposure to interest rate hikes. This part ends with a discussion of the efficiency of monetary transmission and the role of monetary policy.

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[3] See the Townsend-Thai data for household panel data that includes household balance sheet data for several villages.

The second part of the paper reports the current state of financial access of the Thai household sector. The study first puts forward an analytical and measurement framework for financial access. It finds that low-income rural households lack access to basic financial services due to income and collateral constraints and low financial literacy. Middle-income have access to basic services but show low depth of usage. Third, it proposes policy direction for promoting sound financial access.

It is undeniable that financial access and financial sector liberalization bring both opportunities and risks. The South Korean credit card crisis of 2003 and the recent US sub-prime turbulence are painful reminders that downside risks can lurk in unabated credit booms. However, the experience of the developed economies and indeed of Thailand over the past two decades show that a vibrant financial sector is crucial to economic growth and household prosperity over the long run.

The paper shows that household balance sheets are, in general, strong and that financial access augments household resiliency in the face of shocks. However, highly leveraged households are vulnerable to interest-rate shocks. The paper also finds that low-income rural households have low financial access due to income and collateral constraints and low financial literacy. Middle-income households also show access to financial services but lack depth.

Therefore, the key issue facing Thai policymakers today is not how to impede or constrain financial sector growth. Rather, the key policy issue is how to design a market environment that can allow financial institutions to grow and provide sound financial access to all households. Financial access and financial literacy go hand-in-hand. Policy to ensure bolster financial literacy and financial information should be encouraged. Increased sensitivity to interest rates suggests increased effectiveness of monetary policy going forward and the importance of communicative monetary policy that supports household sector stability.

Households must learn how to manage risk in this new financial and economic landscape. Primary responsibilities for retirement and education are shifting to households. As a result, households will have to make the right financial decisions. This is no easy task in light of the increased risk exposure and the complexity of financial decisions. Sound risk management on the part of households within this new financial landscape is essential for household and financial sector stability.

2 Household Balance Sheet, Risk Management and Financial Access

2.1 Background

Risk pervades everyday life. Risk, whether in the form of the weather, price volatility, or illness, has been part of human society since time immemorial. The challenge for households is therefore how to live with risk that arises either from providence or from their own choosing. To this end, households have learnt how to live with risk not through blithe acceptance but through managing risk. Risk can be managed through self-insurance, such as the precautionary accumulation of buffer stocks and savings, or through cross-insurance, such as implicit or explicit arrangements for a household with a bountiful harvest to send remittances to one suffering from drought.

The financial sector can play a key role in supporting the ability of households to both self-insure and cross-insure. The financial sector facilitates self-insurance by helping households to accumulate savings in the form of various assets from housing and land to saving deposits and shares. A developed financial sector should also allow households to implicitly cross-insure one another. A good financial sector allows excess funds from well-off households to flow to households in need of funds in the wake of temporary negative economic shocks, such as illness or unemployment. Financial access therefore helps households to smooth their consumption. In addition, the financial sector also facilitates the flow of remittances sent from one household with excess liquidity to another that is facing a shortfall of funds. On the lending side, securitization also allows default risks to be shared across investors. A network of households and other economic agents, linked via the financial sector, can thus effectively lessen individual burdens of risk by allowing the effects of risk to be shared by society as whole.

Financial access is a double-edged sword. Although a well-functioning financial sector helps households manage risk, rising financial access itself brings new types of risks to households. Innovative saving and debt instruments are expected to bring opportunities to households, by facilitating wealth accumulation, but they may also bring a greater variety of risks. Excessive borrowing may weaken household balance sheets and expose households to various shocks. Given sufficiently weak balance sheets and strong enough shocks, households may face loan default, insolvency and liquidation. Given a large enough aggregate shock, household instability may spread to certain financial institutions and, eventually, the financial sector. The surge in Thai household debt over the past few years and the recent turbulence in the US subprime turbulence have brought this concern to the forefront of the policy debate. The debate on household stability or fragility in the face of rising financial access largely revolves around the following issues:

- Are Thai households borrowing excessively? What is the balance sheet of Thai households debt and asset at the micro and macro levels?
- Has rising financial access and financial innovation helped or hurt household stability?
- Which households are vulnerable to shocks, given their financial positions?
- What are the implications for loan default and financial sector stability?

- What should be the role for policy in terms of creating a financial sector environment that augments household stability?

In order to better inform the policy debate, this chapter pursues a research objective motivated by the above debate. Taking advantage of new household data, it measures the household balance sheet at the macroeconomic and microeconomic levels and discerns whether households are unduly exposed to interest-rate and other economic shocks given their financial access. The paper uses **household survey data** from the National Statistical Office (NSO) from a joint project between the Bank of Thailand and NSO fielded with the Socioeconomic Survey in the fourth quarter of 2006. This survey is a first attempt to measure household debt and assets across Thailand in order to obtain representative balance sheet at the microeconomic and macroeconomic levels.[4] The survey also measures various dimensions of financial access and financial literacy.

This **findings from this chapter can be summarized** as follows:

- The household balance sheet is strong at the macro level. However, low-income households show weak balance sheets with high leverage and a high portion of assets held in real estate.
- Financial access allows households to be more resilient to shocks in terms of smooth consumption and maintaining loan repayment.
- Highly leveraged households, mostly low-income households, are more vulnerable to interest rate and economic shocks.
- Highly leveraged households, mostly low-income households, are more likely to delay payments in the face of shocks
- Financial sector innovation and financial access should be encouraged as they provide households with the opportunity to manage risk.

The chapter is divided into seven sections. The second section briefly summarizes key literature on household consumption and financial access. The third section discusses the data. The fourth section discusses measurement of the household balance sheet at the macroeconomic and microeconomic levels. The fifth section discusses measurement of shocks. The sixth section discusses an econometric model for examining how shocks propagate through household balance sheets and whether financial access helps or hinder household risk management.

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[4] See the Townsend-Thai data for household panel data that includes balance sheet data for several villages.

2.2   Literature Review

The seminal works of Modigliani (1963) and Friedman (1957) on the Life Cycle Hypothesis (LCH) and the Permanent Income Hypothesis (PIH) provide rich frameworks for understanding how households make consumption decisions. The frameworks show that household consumption depends on permanent or lifetime income, and not previous income as often thought. Of greater interest to this paper, the Permanent Income Theory also explains how households respond to temporary and permanent shocks to income by adjusting consumption accordingly. When the shock is temporary, household consumption is not significantly affected as household consumption depends mainly on permanent income or average income over his lifetime. Household consumption is therefore smoothened in the face of such income volatility. When the shock is serious and protracted to the extent that permanent income significantly diminishes, household consumption will also fall significantly.

Shocks are a manifestation of risk. Risk refers to the range of possible future events. Certain events may be desirable (e.g. bountiful harvest) while others are not (e.g. illness). As such, risk is a forward-looking probabilistic concept. The theoretical framework provides us with an understanding of how households handle risk and shocks. The Arrow-Debreu explicitly shows how households mitigate risk by cross-insuring one another. In both the PIH and Arrow-Debreu frameworks, it is noteworthy that household consumption and contemporaneous income are de-linked from one another. In other words, consumption need not be equal to contemporaneous income. Households may choose to consume less than their current income or more than their current income. This de-linkage is possible because households are able to save and borrow against their future income. In an environment of risk and uncertainty, insurance allows the household to allocate and smoothen income and consumption across different states of nature. As such, consumption in each particular period or state of nature is constrained not by contemporaneous income but rather by permanent income. This de-linkage is the basis for the household's ability to absorb shocks and manage risk. However, it is not always possible to insure against all risk. An aggregate shock will result in consumption volatility as it cannot be completely insured against.

This literature review is divided into three sub-sections in order to touch on various strands pertinent to this paper. The first sub-section surveys works on the household balance sheet. The second discusses empirical work on Thai data while the third section discusses household management of risk. The final sub-section summarizes key papers on the linkages between financial sector development and household welfare.

2.2.1 Household Balance Sheet

Work on the household balance sheet is primarily focuses on the developed economies due to the availability of data. McCarthy, David (2004) finds that in the US and Europe, young households tend to save in housing as main risky asset. Older households tend to save in stocks. As such, the share of housing in the household portfolio is initially high and diminishes as the share of stock holdings rises. Bertaut, Starr-McCluer (2002) shows that real estate accounts for 25% of aggregate US household wealth. Banks and Tanner (2002) show that real estate accounts for 35% of aggregate UK household wealth. Middle-income households tend to hold

high share of real estate. Tracy and Schneider (2001) similarly find that real estate accounts for two-thirds of median US household wealth. Lusardi, Annamaria; Olivia Mitchell (2006) finds that financially illiterate households have problems accumulating sufficient wealth for retirement. Shiller, R. (2007) observes that households will see increasing exposure to home price risk, longevity risk, and energy risk.

2.2.3 Households and Risk Management

There is a large and well-established development literature on household management of risk. Paulson (1994) shows that households use migration and remittance to share risk. Deaton and Paxon (1994) show that households accumulate precautionary savings in the forms of grain and money. Rosenzweig and Wolpin (1993) detail how households, during bad times, sell off assets and livestock in order to smooth consumption. Townsend and Lim (1998) illustrate that collective mechanisms at the village level can effectively share risk across households. Murdoch (1993) documents how crop diversification and land fragmentation are devices used by households to insure against weather shocks. Asdrubali et al. (1996) argues that US credit markets are able to smooth 25% of income fluctuations.

2.2.3. Financial Sector and Thai Households

We discuss empirical work based on Thai data. Siamwalla et al. (1990) argues that rural credit markets exhibit information problems and that govt. intervention in rural credit should tackle information problems. Townsend (1995) shows that certain Thai villages in the north use implicit insurance among its member households to insure against idiosyncratic risk. Samphantharak & Townsend (2006) constructs financial statements from household surveys and shows that many households have high marginal product to capital, suggesting significant credit constraints. Manprasert et al (2006) investigate the Euler consumption equation implied by the PIH in the case of Thai households and finds that low-income households are credit constrained.

2.2.4 Financial Sector and Households

There is considerable controversy over finding a causal relationship between financial sector development and economic growth. However, of late, empirical studies based micro data have provided more evidence that financial sector is beneficial to growth and stability. Burgess, Robin and Pande, Rohini (2004), using Indian household survey data and branch data show that branch expansion benefits household income. Dehejia, R; Adriana Leras-Muney (2002), using US branch data, shows that financial sector expansion resulted in growth.

2.3   Data

This section uses new cross-section household survey data specifically designed to measure the household balance sheet and household financial access. The survey is from the National Statistical Office (NSO) and is the outcome of a joint project between the Bank of Thailand (BOT) and the NSO. The BOT designed two special

survey modules[5], one on household savings and balance sheet, and a second on financial access in close cooperation with the NSO. In order to ensure effectiveness, the said survey modules incorporates feedback from NSO officials in the Bangkok office and field staff in the provincial offices. Comments from BOT staff in the Northern, Northeastern and Southern offices were also incorporated. This survey was then fielded in conjunction with the Socioeconomic Survey in the fourth quarter of 2006. Survey data on the balance sheet and financial access is therefore linked to data in the core Socioeconomic Survey records. This survey is a first attempt to measure household debt and assets across Thailand in order to obtain representative balance sheet at the microeconomic and macroeconomic levels.[6]

The survey samples 11,162 households from all regions and provinces in Thailand: 705 households from Bangkok and the vicinity; 3,208 households from the Central region; 2,759 households from the Northern region; 2,954 from North-eastern region; and 1,536 from the Southern region. Approximately 6,980 sampled households are from the urban area and 4,182 households from rural areas. Sampling weights are calculated by the NSO to obtain statistics at the national level. All statistics in this paper are weighted using the NSO survey weights.

We note that this data contains certain limitations. First, the data is cross-section data and as thus changes within households across time cannot be directly observed. Second, data collection occurred only within the fourth quarter and is subject to seasonal influences although attempts to control for seasonality can be introduced. Third, household surveys in general tend to under-measure certain statistics such as income and assets. Rich households in particular, have greater incentives to not participate Rich households that do participate will tend to under-report income and assets. The NSO, however, does make adjustments in the weights of rich households in order to compensate for the low-response rate among rich households. The advantages, however, are considerable. For example, the survey sampling coverage is considerable and designed to obtain national statistics. The survey is a rich source of data. For example, it includes data on consumption, income, occupation, education and household membership. In the past, the SES has been mostly bi-annual. From this year onwards, it will be carried out on an annual basis. As such, it lends itself particularly well to cohort data analysis. On overall, the data set is suitable for in-depth analysis of Thai households.

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[5] More specifically, records 21 and 22. The Bank of Thailand survey design team included the following: Kobsak Pootrakool, Norasi Bukhamana, Kiatipong Ariyapruchya, Wilatluk Sinswat and Dhidaporn Dharmasaroja,.

[6] See the Townsend-Thai data for household panel data that includes household balance sheet data for several villages.

2.4 The Household Balance Sheet: Wealth, Debt and Assets

The question of excessive of household indebtedness cannot be adequately approached without first examining the household balance sheet. The household balance sheet consists of two sides: on the left we have liabilities or debt; and on the right we have assets. It is important to note that the balance sheet shows the *stocks*, as opposed to flows, of assets and liabilities held at a point in time. Clearly, stocks are connected with flows but stocks are more relevant in gauging the financial health of the household. An examination of the household balance sheet can quickly provide a rough idea of whether the household is excessively indebted and holds insufficient assets as buffer against shocks on the liability or asset sides.

In constructing the household balance sheet, we ask households to report the outstanding amounts of debt and certain assets. Household debt is defined as any debt incurred by the household. The purpose is not important in this definition as we are concerned with measuring the debt for which the household is liable. The total debt outstanding, comprising both formal and informal debt, is reported. Informal debt is defined as borrowing from a private person outside the household. Households report the breakdown of formal and informal debt by purposes. Debt purposes include farm investment, non-farm investment, real estate, consumption, education and others. On the asset side, households are asked to estimate the present worth of their financial and physical assets on the market. Physical assets include residential real estate, business real estate, vehicles and livestock. Financial assets include the present worth of savings in the form of savings accounts, insurance savings, provident fund, mutual fund, Retirement Mutual Fund (RMF), Long-Term Mutual Fund (LTF), stocks, gold, cash, jewelry and others. Human assets are not included.

Figure 2.1: Aggregate Household Balance Sheet
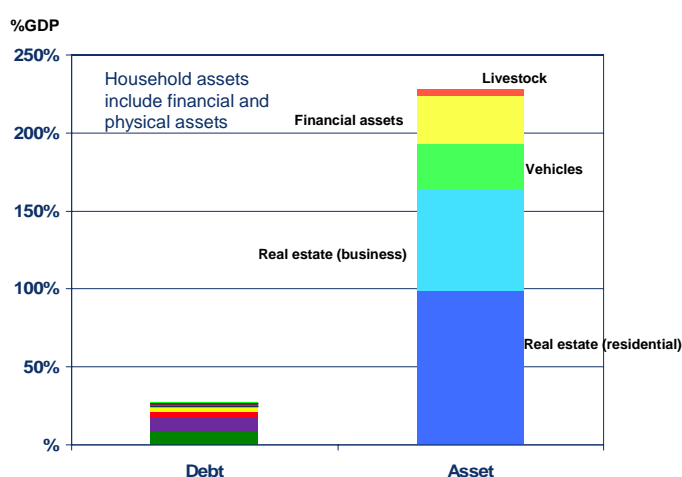
Source: NSO-BOT SES 2006Q4

Figure 3.4.1 reports aggregated and survey-weighted household debt and assets, as a share of nominal GDP. The level of households assets is at approximately 230 percent of GDP and significantly exceeds household debt which stands at approximately 30 percent of GDP. Household assets therefore exceed household debt by a multiple of at least seven. Informal debt accounts for 8 percent of total debt.

Figure 2.2: Composition of Aggregate Household Debt
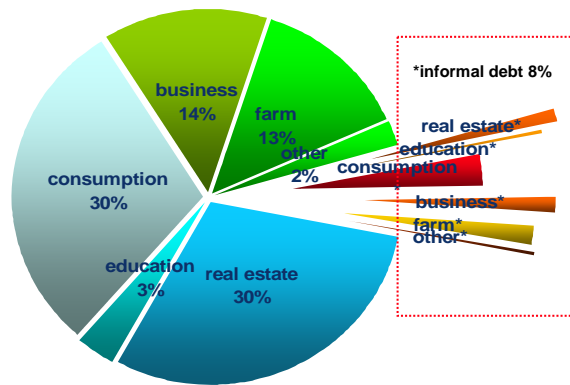
Household assets are dominated by real estate holdings. Real estate for both residential and business purposes account for more than two-thirds of total assets. This is consistent with international experience in that real estate often accounts for large portions of household assets. Residential real estate stands apart from many assets in that, in addition to serving as a store of value, it also provides essential shelter for the household. Financial assets, vehicles and livestock together account for less than one-third of total assets.
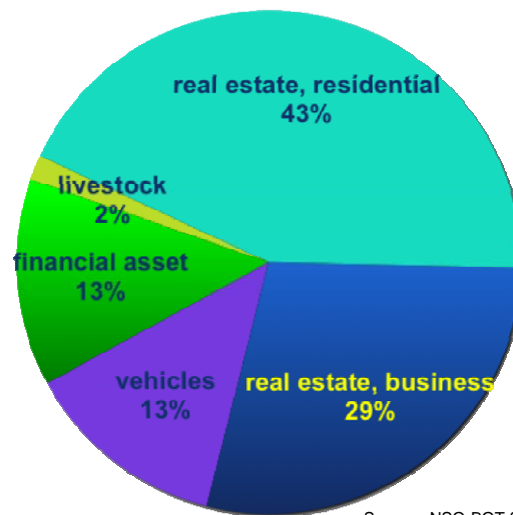
Figure 2.3: Composition of Aggregate Household Assets

Many young households, in Thailand and abroad, tend to save in real estate assets as their first risky asset. As they age, households tend to hold other risky assets, such as stocks. In addition, the Thai economy has a large SME sector. This is reflected in the large share of business real estate held by households. The large share of real estate in the household asset portfolio also indicates that households would be particularly vulnerable to swings in real estate prices. We note that the value of business real estate should, in principle, also include the value of crops, orchards and any other assets fixed to the land.

Figure 2.4: Composition of Aggregate Household Financial Assets
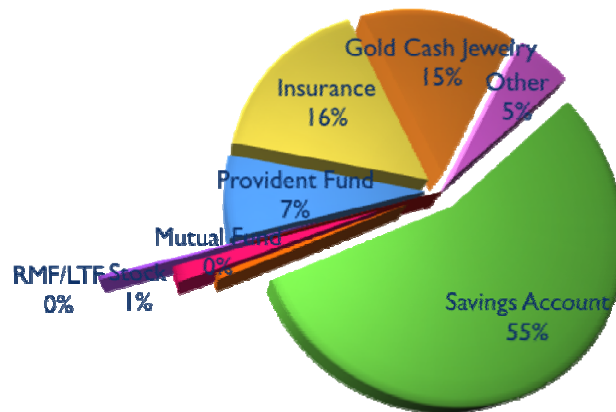
We examine the composition of household financial assets. It is notable, and perhaps unsurprising, that households hold more than 50 percent of their financial assets in savings account. A considerable 15 percent is held in gold, cash, and jewelry. This suggests that there is considerable room for savings mobilization and expansion in the variety of savings instruments in actual use.

Raw household survey data tends to under-measure consumption and income as many households have incentives to under-report. In our case, this is also true of household assets and debt. Formal financial sector data from commercial banks, specialized financial institutions (SFIs), and cooperatives show that household savings hold savings deposits equivalent to at least 100 percent of GDP.[7] Adjusting for this, we find estimate total household assets to be at least 260 percent of GDP. Real estate is left unadjusted. On the debt side, aggregate outstanding loans to households from commercial banks, SFIs and cooperatives account for roughly 50 percent of GDP.[8] With the adjusted figures, household asset still exceeds household debt although at a smaller multiple of five.

In order to provide a frame of comparison, we compare Thai household leverage, defined as the share of total debt to total assets, to other countries. The international data shows that Thai household leverage is in line with many countries. Emerging market economies generally do not report household balance sheet data. A notable exception is India, which reports a very high leverage ratio in comparison to Thailand.

It is tempting to infer that developed economies tend to exhibit higher leverage. In theory, perfect financial access implies that assets and debt are unrelated in the short run. Debt or financial access depends only the household's permanent income or ability to repay. In reality, imperfect information means that banks base their lending on collateral. As a result, the levels of debt and asset are closely tied. Rising financial access will mean that the levels of debt and asset can become de-linked.

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[7] See www.bot.or.th for data on savings deposits in commercial banks and SFIs.

[8] See www.bot.or.th for data on loans to households from commercial banks and SFIs.

Figure 2.5: International Comparison of Household Financial Leverage
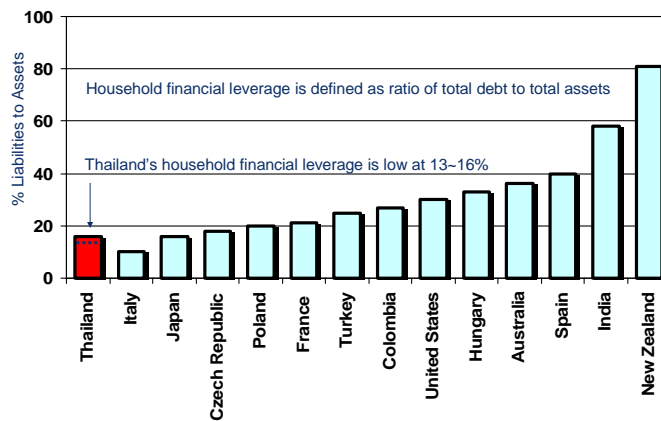
Source: CEIC,IMF staff calculations based on data from central bank, National Statistical Office of Thailand. Note: Data for Columbia, India and Japan are as of end-2004; Thailand end-2006.

Examining the macro balance sheet alone, however, is not enough to infer overall stability as macroeconomic figures could mask distributional issues and hide vulnerabilities of certain segments of the population. At the microeconomic level, households also tend to show a leverage show below one. In other words, households tend to hold more assets than debt.

Figure 2.6: Histogram of Household Leverage
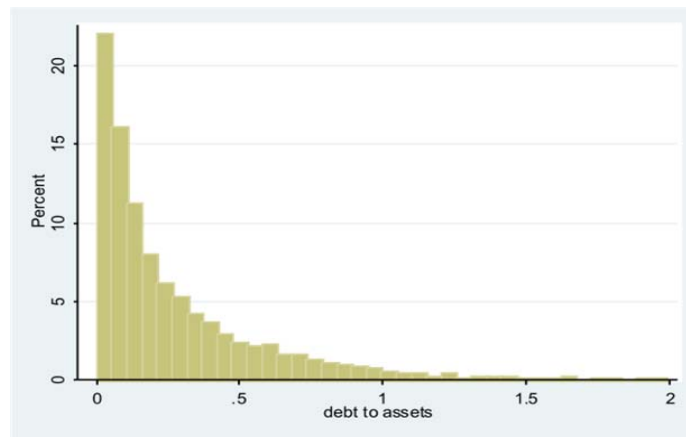
Source: NSO-BOT SES 2006Q4

Household wealth, or net worth, is defined as total assets minus total debt. We find that households tend to hold positive wealth. Positive wealth implies that should household liabilities are called in, households will remain solvent as they hold sufficient assets to cover their liabilities. However, not all assets are liquid and may be subject to a decline in price during fire sales. In addition, assets such as real estate are sometimes difficult to divide up to facilitate sales. As a result, households with positive wealth may be solvent but nevertheless illiquid.

In regards to the wealth distribution, wealth is highly concentrated within the top wealth quintile of households. The top quintile accounts for more than two-thirds of aggregate wealth. The top two quintiles together account for 88 percent of aggregate wealth. It would be interesting to observe whether this distribution will persist into the future given continued economic growth, rising financial access, educational reform and greater economic openness.

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Figure 2.7: Household Wealth by Quintiles
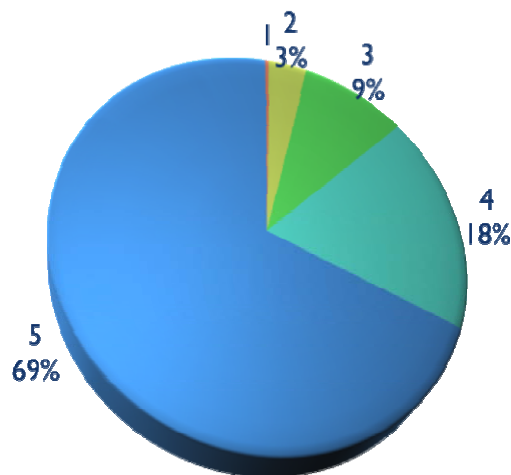
The top wealth quintile holds more than two-thirds of aggregate household wealth
Source: NSO-BOT SES 2006Q4

The Life Cycle theory predicts that households tend to borrow when young, save during middle age, and dissave after retirement. Our data suggests that the household balance sheet roughly follows the predictions of the said theory. Households tend to accumulate wealth up until middle age after which there tends to be de-accumulation of wealth. Panel data, as opposed to cross-section data, would be better suited to verifying the theory.

Consistent with the Life Cycle Hypothesis, the diagram below indicates that young household show high leverage as they borrow and seek to accumulate assets. Older households show stronger balance sheets as they retain assets after repayment of debt. These stylized facts illustrate the dynamism of the balance sheet. A leveraged or weak household balance sheet may simply reflect the household's goals of a strong balance sheet and wealth accumulation in the future. If so, this holds certain implications for Thailand's aggregate balance sheet. As Thailand's society begins to age in the coming decades, the aggregate leverage may stabilize, ceteris paribus. Of course, all else is not equal and it should be noted that the rise in financial access will tend to see more highly leverage balance sheets as credit becomes less reliant on collateral.

Figure 2.8: Household Balance Sheet by Age
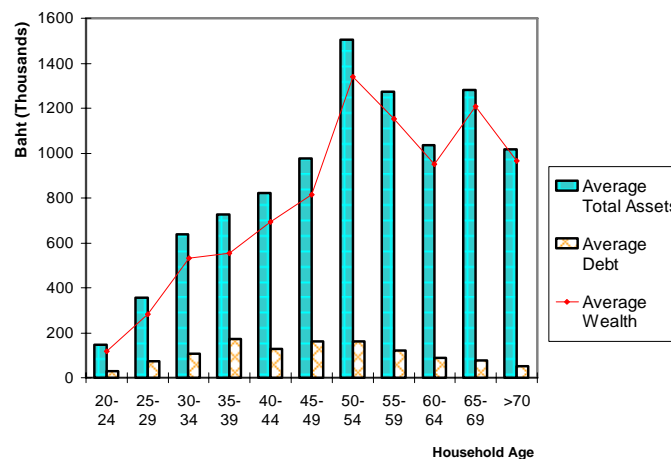
Figure 2.9: Household Balance Sheet by Income Deciles
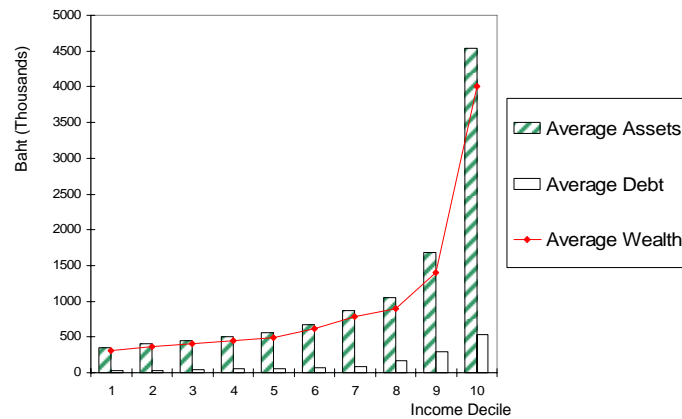
Source: NSO-BOT SES 2006Q4

The distribution of household assets and wealth is highly skewed with high-income households holding a considerable share of total assets and wealth. Household debt, however, is significantly less skewed. It is noteworthy that low-income households show a higher degree of leverage than rich households and suggests that they are possibly more vulnerable to shocks. High debt or high leverage in and of themselves are not necessarily harmful. After all, debt provides households with the means to smooth consumption, to invest in business, and to acquire large assets, such as real estate. The risk of leverage is that high leverage may amplify certain shocks to the household. If the household lacks insurance or some means to absorb the shock, the household will exhibit stress in the form of reduced consumption or delayed payments on loans. In the following section, we discuss measurement of shocks and stress.

2.5 Shocks and Stress

High debt or high leverage in and of themselves are not necessarily harmful. After all, debt provides households with the means to smooth consumption, to invest in business, and to acquire large assets, such as real estate. The risk of leverage is that high leverage may amplify certain shocks to the household. If the household lacks insurance or some means to absorb the shock, the household will exhibit stress in the form of reduced consumption or delayed payments on loans. In this section, we discuss measurement of shocks and stress.

A shock is an exogenous event which impacts the household. They are often difficult to predict. Examples includes drought, flooding, illness or unemployment. Households are asked if they experienced any unusual economic shocks in the sense that the economic status of the household over the past 12 months was better or worse than usual. Unemployment, illness and low crop prices are cited as examples during the survey. Household expectations regarding the coming 12 months were also requested in order to gauge whether shocks are short or long lasting.

Figure 2.10: Economic Shocks

- Households are asked 2 questions:
a) For the past 12 months, what was the economic condition of the household like compared to the average experience (e.g. unemployed, ill, low crop prices)?
b) For the next 12 months, what would the economic condition of the household be compared to the average experience?

Past \ Future	worse	stable	better
worse	Neg/ L 12.9%	Neg/ S 10.7%	Neg/ S 4.5%
stable	Stable 3.0%	Stable 50.2%	Stable 11.2%
better	Pos/ S 0.4%	Pos/ S 2.6%	Pos/ L 4.5%

Source: NSO-BOT SES 2006Q4

Long negative shocks are defined as shocks that occurred in the past 12 months and are expected to last into the coming 12 months. Short negative shocks are defined as shocks that occurred in the past 12 months but the outlook looks stable or positive. The converse is true for positive shocks. No shocks are defined as households that experienced no shocks in the past 12 months. In theory, long shocks are more likely to have larger effects on households as long shocks will tend to diminish household permanent income. We find that approximately 65 percent of households experienced no shocks. Approximately 28 percent experienced negative shocks while the remainder saw positive shocks.

Households were also asked to report whether the interest rate on their interest burden had changed during the last 12 months. The following graph shows that 19 percent experienced a decline in interest rates while 9 percent saw a rise. The diversity of experience despite the tightening interest rate cycle during the time frame is notable and suggests that households may face different borrowing interest rate changes

during a similar time period depending on their loan instruments and the type of financial institutions used.

Figure 2.11: Interest Rate Shocks

Q: During the past 12 months, how did the household rate of interest on its debt service change?

Interest Rate Change	#HHs	Share of indebted HH	Shock
Largely decreased	120,196	1.02%	Positive shock 18.85%
Decreased	2,101,749	17.83%	
Unchanged	8,514,783	72.24%	No shock 72.24%
Increased	904,054	7.67%	Negative shock 8.70%
Largely increased	145,839	1.02%	
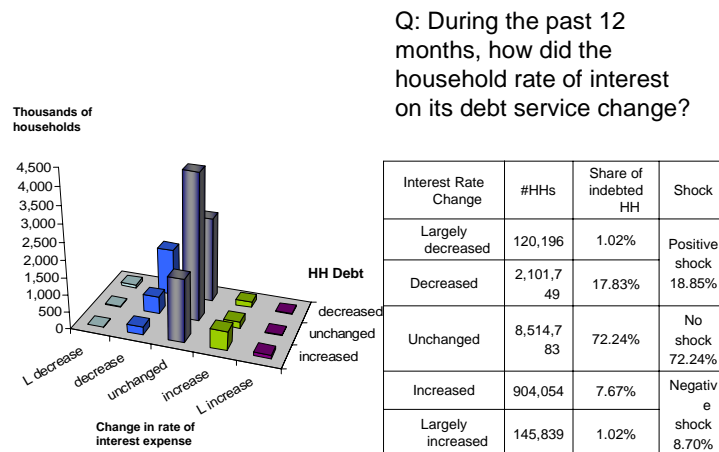
Source: NSO-BOT SES 2006Q4

A negative shock is harmful if the household does not possess the means to absorb it. In this case, a negative shock may cause the household to cut back its on consumption. In the permanent income framework, households with credit constraints find their consumption linked with income. A drop in income results in a corresponding drop in consumption. However, a household with assets on which to draw or with access to emergency credit can detach its consumption from volatility in income. As we are interested in analyzing to what extent shocks translate into consumption volatility, we ask households to report on extreme consumption stress, or cash-flow stress, in which households find themselves unable to afford important goods such as rent, water, electricity and schooling.

Figure 2.12: Cash-flow Stress

- Households are asked whether they experience any problems paying the usual household expenses (e.g. house rent, water, electricity, school fees) in the past 12 months.

- If the answer is other than "no problem", the household is considered to be experiencing cash-flow or consumption stress.

- Households under cash-flow stress can divided into those experiencing problems for less than 3 months and those experiencing problems for more than 3 months.

Source: NSO-BOT SES 2006Q4

Approximately 9 percent reported experiencing cash-flow stress for less than 3 months in the past 12 months whereas 1 percent experienced stress for more than 3 months.

In the absence of implicit cross-insurance, shocks may result in loan repayment delay. The Bank for Agricultural and Agricultural Cooperatives is a good example of cross-

17

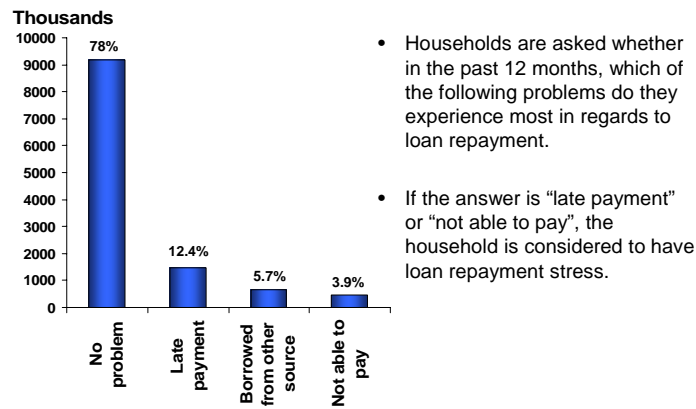insurance. Weather shocks, such as flood or drought, that can be verified, usually result in loans being given a grace period so as to offset the shock and allow households to repay when ready. We therefore ask if households were late in loan repayment or were not able to repay at all in the last 12 months. The following figure reports the results.

Figure 2.13: Loan Repayment Stress

- Households are asked whether in the past 12 months, which of the following problems do they experience most in regards to loan repayment.

- If the answer is "late payment" or "not able to pay", the household is considered to have loan repayment stress.

Source: NSO-BOT SES 2006Q4

Figure 2.14: Loan Repayment Stress, Cash-Flow Stress, and Shocks
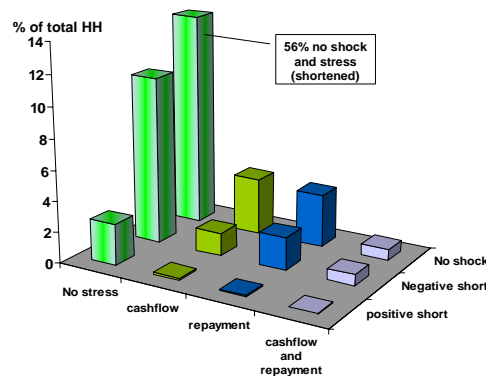
Source: NSO-BOT SES 2006Q4

A simple cross-tabulation of loan repayment stress, cash-flow stress and short shocks show that negative shocks do tend to be correlated with incidents of stress. It is interesting to note, however, that there is significant number of instances in which households *without* shocks experience either cash-flow or loan repayment stress suggesting problems of financial literacy in the former case and strategic default in the latter.

2.6 Econometric Models of Household Risk Management

In order to understand how shocks, leverage, financial access and household stress interact we construct two econometric models using ordered logistic regression with survey weights. Ordered logistic regression is particularly suited to the data in hand as information on cash-flow stress and loan repayment stress are qualitative in nature and contain information on the ordering of the degrees of the stress.

2.6.1 Cash-Flow Stress Model and Results

We are interested in how consumption stress, or cash-flow stress, depends on leverage, shocks and financial access.

Cash-Flow Stress = f(leverage, shocks, leverage*shocks, financial access, controls)

The dependent variable, cash-flow stress, takes on the value of 0 if the household reports no cash-flow problems, 1 if the households report problems for three months or less, and 2 if problems persist more than 3 months.

The independent variables of interest include leverage (i.e. the ratio of debt to assets), interest shock, the interaction between interest rate shock and leverage, and financial access. There are three proxies of financial access. The first is distance. The household estimates distance to the primary financial institution for savings. Household are asked to report distance in terms of kilometers from the following ranges: less than 1 km; 1-5 km; 6-10 km; 11-20 km; 21-30 km; more than 30 km. The second proxy is past refusal of credit. Households are asked if they have ever been refused credit from a financial institution. The third proxy is access to emergency funds. The second and third proxies are arguably subject to the problem of endogeneity. However we attempt to circumvent this problem by letting households discuss their financial access in the general sense without a specific time frame. The shocks, however, take place within a specific time frame.

Controls include socioeconomic variables such as type of household income, occupation (household occupation accounting associated with the main source of household income), education attainment of the household head, household age (i.e. age of the household head), rural-urban.

The ordered logistic regression results, as reported in the following table, show that cash-flow stress depends on interest-rate shocks interacted with leverage. Leverage and interest rate shocks by themselves do not seem to matter. The higher the leverage the more the household will be vulnerable to interest rate shocks. Economic shock also matters and do not interact with leverage. As expected, long shocks affect households more so than short shocks.

The three proxies of financial access are all significant at the 85 percent levels. The associated signs suggest that financial access augments the ability of households to smooth consumption. In regards to the controls, education and employment are positively correlated with low stress. Household age and rural, however, are not significant.

Table 2.1: Ordered Logistic Regression of Cash-Flow Stress

```
                                     Number of obs    =      6192
                                     Population size  =      6192
                                     Design df        =       291
                                     F( 36,    256)   =    197.35
                                     Prob > F         =    0.0000
```

stress	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf. Interval]	
leverage	.0005652	.0004492	1.26	0.209	-.0003188	.0014493
lvg*shkintrst	**.0029782**	**.0008418**	**3.54**	**0.000**	**.0013215**	**.0046349**
shkintrst	.0051812	.1463103	0.04	0.972	-.2827794	.2931417
lvg*shkecon	.0003048	.0007855	0.39	0.698	-.0012412	.0018508
shkeconlong	**.8144939**	**.1465127**	**5.56**	**0.000**	**.5261351**	**1.102853**
shkeconshort	**.6604052**	**.1536761**	**4.30**	**0.000**	**.3579476**	**.9628627**
hhincome	**-.0000259**	**6.73e-06**	**-3.85**	**0.000**	**-.0000391**	**-.0000127**
distancebank	-.0890395	.0562473	-1.58	0.115	-.1997427	.0216637
creditrefsed	**.4535892**	**.1851966**	**2.45**	**0.015**	**.0890945**	**.8180838**
loanemrgncy	**-.6122172**	**.1977872**	**-3.10**	**0.002**	**-1.001492**	**-.2229424**
_Ijob_11	.2642548	.385855	0.68	0.494	-.4951655	1.023675
_Ijob_19	.0622653	.7014011	0.09	0.929	-1.318197	1.442728
_Ijob_21	.5671425	.3202778	1.77	0.078	-.063212	1.197497
_Ijob_22	.8318832	.1912056	4.35	0.000	.4555619	1.208204
_Ijob_31	-29.05342	.5800816	-50.09	0.000	-30.19511	-27.91174
_Ijob_32	.6979885	.2583851	2.70	0.007	.1894479	1.206529
_Ijob_41	1.33495	.2346159	5.69	0.000	.8731906	1.796709
_Ijob_42	1.454298	.3946093	3.69	0.000	.6776475	2.230948
_Ijob_50	.8727246	.2350744	3.71	0.000	.410063	1.335386
_Ijob_60	.9772802	.2278232	4.29	0.000	.5288901	1.42567
_Ijob_71	.5940313	.2229526	2.66	0.008	.1552272	1.032835
_Ijob_72	.0769655	1.01232	0.08	0.939	-1.915432	2.069363
_Iedugp_1	.0863831	.2365987	0.37	0.715	-.3792785	.5520447
_Iedugp_2	.0888321	.2832732	0.31	0.754	-.468692	.6463562
_Iedugp_3	.0177484	.3185679	0.06	0.956	-.6092409	.6447376
_Iedugp_4	.0217886	.3434515	0.06	0.949	-.6541753	.6977526
_Iedugp_5	.1331178	.8632827	0.15	0.878	-1.565952	1.832187
_Iedugp_6	-.5636582	.4198049	-1.34	0.180	-1.389897	.2625806
_Iedugp_7	-1.06193	.4220086	-2.52	0.012	-1.892506	-.2313534
_Iedugp_8	.0297556	.681223	0.04	0.965	-1.310993	1.370504
_Iedugp_9	-30.75374	.7753683	-39.66	0.000	-32.27978	-29.2277
hhage	-.005417	.0049358	-1.10	0.273	-.0151315	.0042974
rural	.0560964	.1664119	0.34	0.736	-.2714272	.38362
/cut1	2.006056	.4842896	4.14	0.000	1.052901	2.95921
/cut2	4.120815	.5014374	8.22	0.000	3.133911	5.107719

2.6.2 Loan Repayment Stress

We are interested in how loan repayment stress, or cash-flow stress, depends on leverage, shocks, and financial access.

Loan Stress = f(leverage, shocks, leverage*shocks, financial access, controls)

The dependent variable, loan repayment stress, takes on the value of 0 if the household reports no loan problems, 1 if the households report loan repayment delay, and 2 if the household is unable to cannot make loan repayments.

The independent variables of interest include leverage (i.e. the ratio of debt to assets), interest shock, the interaction between interest rate shock and leverage, and financial access. There are three proxies of financial access. The first is distance. The household estimates distance to the primary financial institution for savings. Household are asked to report distance in terms of kilometers from the following ranges: less than 1 km; 1-5 km; 6-10 km; 11-20 km; 21-30 km; more than 30 km. The second proxy is past refusal of credit. Households are asked if they have ever been refused credit from a financial institution. The third proxy is access to emergency funds. The second and third proxies are arguably subject to the problem of endogeneity. However we attempt to circumvent this problem by letting households discuss their financial access in the general sense without a specific time frame. The shocks, however, take place within a specific time frame.

Controls include socioeconomic variables such as type of household income, occupation (household occupation accounting associated with the main source of household income), education attainment of the household head, household age (i.e. age of the household head), rural-urban.

The ordered logistic regression results, as reported in the following table, differs somewhat from the results from the cash-flow stress. Loan stress depends on interest-rate shocks interacted with leverage. The higher the leverage the more the household will be vulnerable to interest rate shocks. However, leverage and interest rate shocks by themselves now matter. Economic shock also matters but does not interact with leverage. As expected, long shocks affect households more so than short shocks. In comparison to the results on cash-flow stress, shocks have a greater effect on loan repayment. This is not surprising given the reasonable assumption that households are more willing to be in arrears rather than under consumption stress. Furthermore, a good financial sector should allow households to share risk by allowing households experiencing shocks to be able to be late in their loan repayments.

The three proxies of financial access are not all significant. Distance to the nearest savings institution is no longer significant. However, financial access as proxied by past refusal of credit and access to emergency loans are still significant and suggests that financial access augments the ability of households to smooth consumption. The fact that distance to the nearest savings institution is no longer significant suggests that in preventing loan stress, it is access to lending and re-financing that is important.

In regards to the controls, education and employment are positively correlated with low stress. Household age and rural, however, are not significant.

Table 2.2: Ordered Logisitic Regression of Loan Repayment Stress

```
                                      Number of obs    =      6192
                                      Population size  =      6192
                                      Design df        =       291
                                      F(  35,    257)  =     95.66
                                      Prob > F         =    0.0000
```

loanstress	Coef.	Linearized Std. Err.	t	P>|t|	[95% Conf. Interval]	
leverage	.0013154	.000518	2.54	0.012	.0002959	.002335
lvg*intrstshk	.0033552	.0017998	1.86	0.063	-.000187	.0068975
shkintrst	.7890854	.1015378	7.77	0.000	.5892439	.988927
shkeconlong	1.310813	.1030494	12.72	0.000	1.107996	1.51363
shkeconshort	.9664561	.0985402	9.81	0.000	.7725142	1.160398
hhincome	-8.30e-06	3.40e-06	-2.44	0.015	-.000015	-1.61e-06
distancebank	-.0146542	.0362727	-0.40	0.687	-.0860443	.0567359
creditrefsed	1.00174	.1093808	9.16	0.000	.7864621	1.217018
loanemrgncy	-.3160547	.1721845	-1.84	0.067	-.6549394	.0228301
_Ijob_11	-.0491527	.2092686	-0.23	0.814	-.4610245	.3627191
_Ijob_19	.5867376	.3521331	1.67	0.097	-.1063129	1.279788
_Ijob_21	.3003099	.1895775	1.58	0.114	-.0728069	.6734268
_Ijob_22	.3243809	.1434606	2.26	0.024	.042029	.6067329
_Ijob_31	.1179931	.75443	0.16	0.876	-1.366838	1.602824
_Ijob_32	-.0156306	.1837852	-0.09	0.932	-.3773473	.3460861
_Ijob_41	.927028	.2359673	3.93	0.000	.462609	1.391447
_Ijob_42	.6899325	.3570373	1.93	0.054	-.0127703	1.392635
_Ijob_50	.2307492	.1430453	1.61	0.108	-.0507854	.5122838
_Ijob_60	.5377358	.1460426	3.68	0.000	.2503021	.8251695
_Ijob_71	.2237024	.1512533	1.48	0.140	-.0739866	.5213915
_Ijob_72	.1179773	.5374476	0.22	0.826	-.9398	1.175755
_Iedugp_1	-.0107163	.1765524	-0.06	0.952	-.3581979	.3367654
_Iedugp_2	.063388	.2094574	0.30	0.762	-.3488555	.4756315
_Iedugp_3	-.2628203	.2225949	-1.18	0.239	-.7009203	.1752797
_Iedugp_4	-.0363192	.2306431	-0.16	0.875	-.4902593	.417621
_Iedugp_5	-.4020358	.717314	-0.56	0.576	-1.813817	1.009745
_Iedugp_6	-.2041438	.272714	-0.75	0.455	-.7408057	.3325982
_Iedugp_7	-.5098605	.2627076	-1.94	0.053	-1.026908	.0071873
_Iedugp_8	-.5119991	.4484667	-1.14	0.255	-1.394649	.3706504
_Iedugp_9	-28.71712	.8021878	-35.80	0.000	-30.29594	-27.13829
hhage	-.0025039	.0032631	-0.77	0.443	-.0089262	.0039183
rural	-.0529619	.1118878	-0.47	0.636	-.2731738	.1672501
/cut1	1.563502	.3226836	4.85	0.000	.9284127	2.198592
/cut2	2.686731	.3254453	8.26	0.000	2.046206	3.327256
/cut3	3.919546	.3308636	11.85	0.000	3.268357	4.570735

3 Financial Access of Thai Households: Concept, Measurement and Policy Issues

1. Introduction

Financial sector is an important driving force for economic and social development. It mobilizes savings, allocates funds to finance economic activities, disseminates information for the market as well as providing crucial mechanism for risk management (Barth and Calari 2006; Demirgüç-Kunt 2006). A well-developed and inclusive financial sector presents opportunities for individuals to save, borrow, transfer funds and insure against unforeseen shocks, helping them to smooth consumption over time, invest in income generating economic activities, as well as to better integrate into society as active economic and social agents (Claessens 2005, FSA 2000).

Financial sector development has been widely advocated as an key driver for promoting economic growth, better income distribution and poverty alleviation (Barth and Calari 2006; Beck and de la Torre 2006; Claessens 2005, World Bank 2005a). However, if financial services are not optimally distributed among households, skewing heavily towards the better-offs, there is no assurance that a deeper financial system is one that has more access or benefits the poor (World Bank 2005b). Without adequate access to financial services, households and entrepreneurs are not able to reap benefit from development in the financial sector.

It is well established that financial exclusion impedes economic growth and increase poverty and inequality (Beck, Demirgüç-Kunt, and Peria 2006; FSA 2000, Honohan 2007). Therefore, promoting inclusive financial sector, i.e. financial sector that is able to provide services to all individuals, should be a key component in financial sector policy and national development agenda (UNDP 2005). In recent years, particularly following the International Year of Microcredit in 2005, importance of financial access has indeed been increasingly recognized in the international development arena. In order to effectively assess and promote inclusive financial sector, it is vital that we know the current state of financial access.

Data on financial access, however, remains relatively scarce[9] (Barth and Calari 2006; World Bank 2005a; World Bank 2005b; UNDP 2005). In this regard, progress in data collection is a crucial step towards promoting financial access. Greater availability of data is important for policymakers in the policy formulating process, and for the private sector in identifying market segments that are currently underserved in order to develop appropriate product innovations and expand their clientele. The World Bank, the International Monetary Funds (IMF), the UK Department for International

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[9] Important initiatives of financial access data collection include the pioneering work by the FinMark Trust in collecting data on financial access in Africa since 2003 (FinMark Trust: 2005)

Development (DFID), and other development agencies have been accelerating their data collection and publication of relevant data analyses, as well as developing a clearer framework for financial access data collection in this area (World Bank 2005b).

Chapter 3 of this paper aims to contribute to the research in this area with specific reference to Thailand. It tries to answer the following questions: how financial access can be viewed and measured; who are excluded from access to financial services in Thailand; what are the main barriers; and how to enhance financial access for the Thai households. In doing so, the study first puts forward an analytical and measurement framework, based on Sen's capability approach. Second, it tries to measure current state of financial access in Thai households. And finally, the study proposes direction for policy discussion in promoting financial access in Thailand.

The remainder of Chapter 3 is organized as follows. Section 2 conceptualizes the notion of financial access from human development perspective and presents analytical and measurement framework for assessing financial access, based on Sen's capability approach. Section 3 outlines the methodology and scope of the statistical study. Section 4 presents key data and indicators for financial access in Thailand, based on the findings from the nationwide NSO-BOT survey conducted in the fourth quarter of 2006. Section 5 presents an overview of financial literacy. Lastly, summary of the statistic findings and some issues on policy direction are outlined in Section 6.

2. Conceptualization of Financial Access

2.1 Philosophical framework

According to Sen's capability approach, the fundamental objective of development is to enhance people's freedoms in terms of capabilities[10] (Sen, A. K. 1982; 1985; 1992; 1993; 1999b). The important constituents of Sen's capability approach are functioning and capability. Capability is a set of all possible combinations of doings and beings that a person can choose to achieve. Functionings are subsets of capability, referring to the achieved 'doings and beings' of a person which have been selected from the capability set (Sen, A. K. 1999b: 74-76). "A functioning is an achievement, whereas a capability is the ability to achieve. Functionings are, in a sense, more directly related to living conditions, since they are different aspects of living conditions. Capabilities, in contrast, are notions of freedom, in the positive sense: what real opportunities you have regarding the life you may lead" (Sen, A. K. 1987: 36).

Sen's capability approach indeed offers a multidimensional account of the concept of human well-being and development.

Firstly, the approach focuses on capability and functioning space, reflecting what a person can be and what he or she chooses to be, and not the means, which may or may not be translated to a sufficient level of well-being. In so doing, the approach shifts the emphasis of development discourse from focusing on means to focusing on an end of human well-being.

Secondly, capability approach addresses the issues of interpersonal diversities in converting means to ends of capability enhancement. An important characteristic of Sen's capability approach is a clear distinction between ends and means to human well-being and development. Capability set of a person is viewed as ends of human development, as it represents freedom to be and do what one values, while variables such as income, commodities, and services are considered as important means to achieving enhanced set of human capability.

However, by focusing on functioning and capability, Sen's capability approach does not necessarily deny the important contributions that variables such as income, services, and commodities can make to human well-being. In their study on India, Dreze and Sen stress that "we have tended to judge development by expansion of substantive human freedoms— not just by economic growth (for example, of the gross national product), or technical progress, or social modernization. This is not to deny, in any way, that advances in the latter

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[10] Sen's capability approach has been adopted most notably by the United Nations Development Programme (UNDP) as philosophical underpinning of the formulation of human development index (HDI), first introduced in 1990. The human development approach on UNDP also sees development as process of enhancing people's freedom.

fields can be very important, depending on circumstances, as 'instruments' for the enhancement of human freedom" (Dreze, J. and A. K. Sen 2002: 3).

Thirdly, capability approach emphasizes more on freedom to achieve, capability, than the actual achievement (functioning). Indeed, two people may have similar observed functionings, but they may have very different capability sets, hence different level of freedom and human development. To illustrate, A and B are both ill-nourished. A is starving due to lack of access to food and water, while B chooses to go on a hunger strike. Although A and B have the same functionings of 'being ill-nourished', B has the capability to be well-nourished. Therefore, from Sen's capability approach, B is better off than A in terms of human well-being, despite having the same functioning as A. This is because B has the freedom to be hunger-free, while A does not.

Fourthly, the approach explicitly recognizes that different individuals have different abilities to convert means to achieve an end according to their social and personal circumstances such as physical conditions, social conventions, geographic conditions, preferences, perceptions and awareness. For example, C and D may not be able to make use and benefit from an available bicycle (means) in the same degree due to their unique physical conditions. C, as an able person, may benefit from a bicycle to achieve capability to be mobile, while D as a disabled person is not able to make use of the same available bicycle to achieve the same capability.

And lastly, capability approach is able to account for the concept of well-being which may be geographically, culturally, and context specific, thanks to its multifaceted and under-specific nature. Sen does not specified a definite set of capability to be promoted, but argues that a set of human capability should be derived based of an act of reasoning, while taking into account unique personal, social, and geographical context of each individual.

While an enriched capability set may comprise numerous and diverse valuable capabilities which are context specific to each individuals, the basic set of valuable capability can be argued to include certain fundamental capabilities that are necessary in leading any enriched life such as capabilities to be well-nourished, to be sheltered, to be healthy, to be educated, to be employed, to be respectable in a society, to be an active economic agent, as well as capability to be financially included. Accordingly, important means to enhancing such human capabilities may include numerous means variables such as food, water, housing, health care, education, income as well as financial services.

2.2 Analytical Framework

Capability to be financially included[11] represents *opportunity and ability* to use financial services such as savings, borrowings, and transfer payments. Capability to use financial services is important to households' well-being, as it allow them to accumulate wealth, invest in productive or income generating activities, insure against unforeseeable events, manage risks, among others. In order to have capability to be financially included in a complete manner, household must have appropriate means and sufficient ability to use financial service. This is analogous to an example of A and B each having a bicycle. An individual needs both the means (bicycle) and the ability (in this example, an able-body and skills to ride a bicycle) in order to achieve capability to be mobile.

With regard to financial capability, financial access is considered as an important *means*, as it reflects opportunity to make use of financial services. Financial ability may be considered to include household's ability to save, repay loan, as well as ability to understand financial products and make informed financial decisions, reflected by sufficient level of financial literacy. In this study, the focus, particularly with regard to policy implications, will be on the financial literacy aspect of household's financial ability. Since financial literacy is crucial for empowering household to make informed decision and manage their financial matters appropriately, it is important to promote both financial access and financial literacy (Blacklock and Liew 2006). Diagram 3.1 illustrates this concept.

Diagram 3.1

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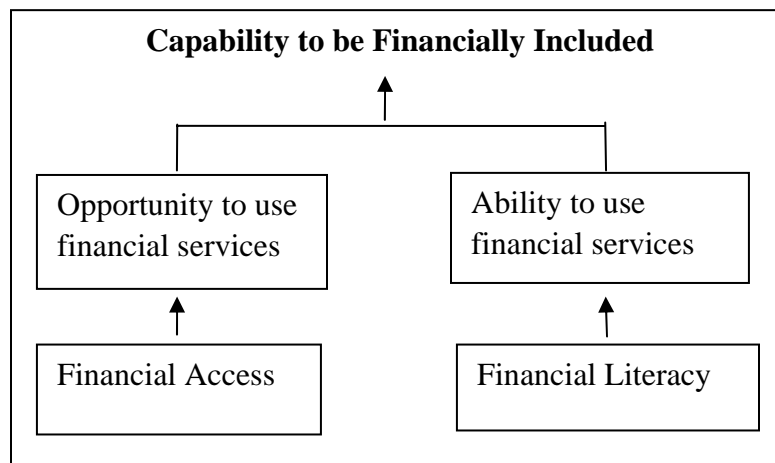
[11] In this paper, we use the terms 'capability to be financially included' and 'capability to use financial services' interchangeably.

An ideal financial sector is one that is able to provide individuals who have sufficient ability with appropriate opportunity to make use of the financial services. If a person who has the ability is deprived of financial access (means), he or she may not be able to fully realize his or her potential or contribute fully to the economic and social development. In contrast, if a person without sufficient ability to use financial services makes use of the financial services, particularly credit services, inappropriately; he or she may be exposed to the risk of being overly indebted. Indeed, widespread over-indebtedness in the household sector can potentially have adverse impact on financial stability of the system. Thus, it is crucial that availability of financial services is in line with financial ability of individuals in a society in question.

Therefore, it is suggested that two important and related prerequisites for achieving capability to be financially included are financial access and financial literacy. Financial access provides individuals with opportunities to make use of financial services, while financial literacy equips individuals with the abilities to reap benefit from available opportunities. Indeed, financial access and financial literacy are vital to enhancing capability to be financially included, and thus are crucial for individual well-being and overall development.

2.3 Measurement framework

Conceptually, it can be stated that individuals who have access to financial services include those who currently use financial services and those who, for personal reasons, choose not to use the available services (World Bank 2005a).

Diagram 3.2

Financial Access = Usage + Self Exclusion

A person who does not use financial service may either be a person who has access to financial services but chooses not to use them (self exclusion) or a person who does not have financial access due to existing barriers. It is important to recognize the distinction between households who exclude themselves from using the available services and households who have no financial access. This distinction can be made by acquiring information regarding the reasons why households do not use financial services (non-usage). If there is no demand for financial services despite the availability, then that person belongs to the self exclusion group, but if the non-usage is a result of barriers to access, then the households belong to the non-financial access group.

Indeed, in order to distinguish between individuals belonging to self exclusion and non access groups, we need to understand the reasons behind the non usage. However, in practice, it may be difficult to obtain and measure such information. Due to the ambiguity and complexity in defining concepts of access that differ from usage, it has been proposed that current users provide the basis for developing indicator of access (World Bank 2005a:2). Consequently, in many cases, usage is employed as a proxy for financial access.

In our study, we examine financial access in two levels. First, we employ usage as a proxy for measuring financial access when examining the overall state of financial access in the system. It is assumed that everyone has demand and the ability to use basic financial services such as saving products from any one kind of financial institution. Therefore, proportion of the self exclusion is said to approach zero, and non usage is assumed to be the result of lack of opportunity to use financial services. All main types of financial institutions, including commercial banks, specialized financial institutions (SFIs), non-bank institutions, cooperatives, and village funds, are discussed in the overview assessment.

Second, we investigate access to savings accounts and loan services in commercial banks and SFIs in detail. Here, we assess financial access by looking at both usage and self exclusion. We try to distinguish between those who exclude themselves and those who lack opportunity to use financial services. In doing so, we will better understand the barriers to access basic financial services from commercial banks and SFIs. With more insights into obstacles and barriers to financial services, we will be better equipped to improve financial access, with particular reference to the banking sector.

3. Data and Methodology

In this study, we try to measure degree of financial access and financial literacy using the data from National Statistics Office's Household Socio-Economic Survey (SES) and the newly designed questionnaire for measuring financial access and literacy, attached to the SES. The nationwide survey was conducted by the National Statistics Office in the fourth quarter of 2006.

The survey covers 11, 162 sampled households from all regions and provinces of Thailand: with 705 households from Bangkok and the vicinity; 3,208 households from the central region; 2,759 households from the northern region; 2,954 from north-eastern region; and 1,536 from the southern region. Approximately 6,980 sampled households are from the urban area and 4,182 households from rural areas.

We further divide households into six employment sectors, namely; agricultural sector (1,880 sampled households); entrepreneurs, trade and industry (2,585 sampled households); professional, technical and managerial (1,368 sampled households), labour worker (474 sampled households); economically inactive/unemployed (1,923 sampled households); and others (2,932 sampled households).

We also examine financial access and financial literacy by income group. In this regard, we divide households into five income quintiles as follows.

Table 3.1: Households by Income Quintile

Income Quintile	Mean Income per Month (Baht)
Quintile 1: Lowest Income Group	3,860.32
Quintile 2: Low Income Group	7,765.35
Quintile 3: Middle Income Group	12,283.92
Quintile 4: High Income Group	20,090.05
Quintile 5: Highest Income Group	55,180.88
Overall Average	*19,836.10*

Important limitations of this statistical study are as follows. First, the study presents the current status of financial access in Thai household sector. It does not offer time series data and analysis. Second, in our statistical study, we try to investigate main barriers from households' perspective. Barriers on the provider's side are not examined in this work.

4. Financial Access of Household Sector in Thailand

Analysis of financial access is carried out in two main levels. Firstly, in section 4.1, key indicators and overview discussion of household financial access are presented, looking at degree of household access to different types of financial institutions and number of products currently used. Secondly, in sections 4.2 and 4.3, more detailed indicators and analyses of financial access to savings and loans, particularly in commercial banks and SFIs are discussed.

4.1 Overview of Household Financial Access

In the overview assessment, we assume that degree of financial access can be approximated by usage of financial services. We assume that all individuals would need and choose to use basic financial products such as savings products or loans from any one kind of financial service provider. Usage is suggested to provide adequate basis for measuring financial access, at least at the overall level.

In order to facilitate cross country comparison and policy discussion, we try to report our statistical findings in accordance with a set of financial access indicators developed jointly by the World Bank, DIFD, FinMark Trust[12] (Chidzero, Ellis, and Kumar 2007, World Bank 2005a). First, we examine access from institutional dimension, and second we examine the depth of access, approximated by the number of products used by households.

4.1.1 Access to Financial Institution

Before examining financial access from the institutional dimension, it is important to clarify the terminology used in this chapter to refer to different types of financial institutions. There is no single definition for formal financial institutions; however, a useful way to categorize them is to examine their legal status and/or supervisory framework (World Bank 2005b:4).

For the purpose of our study, formal financial institutions or formal sector refers to financial institution with clear legal status and is supervised or examined by the Bank of Thailand, namely commercial banks, specialized financial institutions (SFIs), finance companies, credit fonciers, credit card and personal loan companies. Semi-formal financial institutions or semi-formal sector refers to financial institutions that have legal status, but is not supervised or examined by the Bank of Thailand, namely, cooperatives, credit unions, and village funds. Informal financial institution or informal sector refers to financial institutions that have no

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[12] The set of core indicators include 'the banked' (the percentage of total adult population with bank account); 'the formally included' (the percentage of total adult population which uses the services of any formal financial institution); 'the financially served' (the percentage of total adult population which uses any formal and /or informal financial institution); 'saving' (the percentage of adult population who keeps money in formal instruments, allowing them to safeguard and accumulate money); 'loans and credit' (the percentage of adult population who has obtained/have outstanding loan or credit facility from a formal institution) (World Bank 2005a:7). Another core indicator that is beyond the scope of this paper is an indicator for payment service.

legal status and are not overseen by authorities, namely savings groups, money lenders, as well as other unspecified financial providers such as pawn shops.

We are interested to know the proportions of households who use financial services from the formal, semi-formal, informal sectors, and who do not have financial usage at all. We assume that all households fall into one of the following categories, namely, those who use services from banks and bank like institutions, those who use services from other formal institutions but not from banks or bank like institutions, those who use services from semi-formal institutions but not by formal institutions, those who use services from informal institutions only, and finally, those who do not use financial services from any institutions. We separate households along the strand of financial service providers, ranging first from formal sector, semi-formal sector, informal sector, and no access.

In improving financial access, the aim is to move all households towards the left hand side of the access strand (figure 3.1), hence towards more formal financial institutions. Access to basic services in banks in the formal sector opens up new opportunities for households to make use of other services available in the formal financial institutions such as payment services, debit and ATM cards, and insurance, among others, and allows them to be better protected legally. While informal institutions are able to offer services to the poor who are not able to gain access to formal sector, they are said to be relatively inefficient and can potentially be abusive. It has been argued that the longer people rely on an informal sector, the longer they remain poor (Barth and Calari 2006).

Figure 3.1: Financial Access Strand
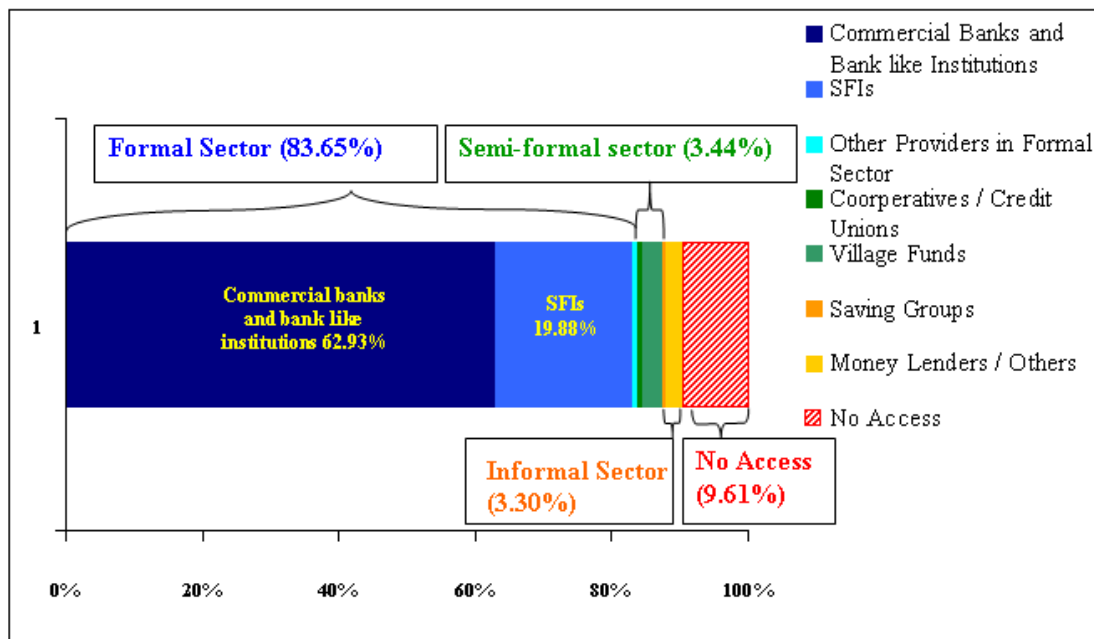
The Financially Served

From figure 3.1, we see that the proportion of households served by commercial banks and bank like institutions such as finance companies and credit fonciers is 62.93 percent. The proportion of those who are not served by the aforementioned institutions but are served by SFIs is 19.88 percent, while another 0.84 percent is served by other formal institutions and not by banks, bank like institutions or SFIs. Thus, the proportion of the formally included is 83.65 percent.

Within the formal sector, when examining further into the proportion of households in each income group, we find that majority of those with usage from commercial banks and bank like institutions are from middle, high and highest income groups (third, fourth and fifth income quintiles), accounting for 13.13, 16.39, and 18.81 percent, respectively, from to total of 62.93 percent.

The trend is reversed for SFIs. Majority of those served by the SFIs are from the lowest and low income groups (first and second income quintiles), accounting for 6.41 and 5.73 percent, respectively, while the middle, high and highest income groups account for 4.12, 2.68, and 0.98, respectively, from the total of 19.88 percent. Therefore**, it can be suggested that within the formal sector, lower income households who are not able to gain access to commercial banks and bank like institutions rely mainly on the services from SFIs.**

The proportions of those who are not served by the formal sector but are using financial services from the semi-formal institutions namely, corporative/credit unions and the village funds are 0.69 and 2.75, respectively.

The proportion of those who are not served by the formal and semi-formal sectors, but are served by informal institutions only is 3.3 percent. Of this, 0.61 percent is served by savings groups/community self-help groups, 2.69 percent is served by money lenders/others unspecified institutions only.

Proportions of those using financial services from semi-formal and informal sectors are largely from the lowest income groups. Such proportions decline as income level becomes higher, with the highest income group registering the smallest proportions of those using services from semi-formal and informal sectors. Thus, it can be observed that **low income households who are not able to get access to the formal sector, rely on services from semi-formal and informal sectors.**

The data indicate that the proportion of households who are financially served (by formal, semi-formal, and informal sectors) is 90.4 percent, while households with no financial access account for 9.61 percent of the population.

The Financially Excluded: The 9.61 Percent of Thai Households

Of the 9.61 percent of the households that do not use any financial services, 5.37 percent is from the lowest income group, 2.48 percent from the low income group, 1.25 percent from middle income group, 0.39 percent from high income group, and 0.12 percent from highest income group. Indeed, the proportion of the non usage declines as income level becomes higher. While positive relationship between income level and degree of financial usage can be causally observed, the causality is not established here.

From the occupational perspective, households that register highest proportions of no financial usage are (i) labour workers, with 24.89 percent of the households in this sector having no financial access; (ii) economically inactive/unemployed, with 21.48 percent of the economically inactive having no access, and (iii) agricultural workers, with 9.6 percent having no access.

From the geographical perspective, approximately 8.77 percent of those living in the urban areas do not use financial services, while the figure for the rural areas is 11.02 percent. While the proportion of the financially excluded in the rural areas is higher than in the urban as we may have expected, the proportion of the financially excluded in the urban area can be viewed as surprisingly high at 8.77 percent. **This may imply that there might be other more significantly important barriers to access than distance and traveling time to service provider.**

From the regional point of view, the proportion of households without financial usage is highest in the northern region, with 11.44 percent of households in the region with no financial services. There are no significant variations in the levels of financial exclusion among different regions. The lowest proportion of financially exclusion is found in Bangkok and the vicinity with only 2.55 percent of households without any financial services. **It can be observed that there is a significant disparity between degrees of financial usage in Bangkok and the vicinity and the rest of the country.**

It can be suggested that the significant variations in the degree of financial usage can be observed when examining financial usage from income and occupational dimensions, while distinctions are less striking from geographical and regional dimensions, with the exception of the disparity in the degrees of usage between Bangkok and vicinity and the other regions of the country.

In summary, it can be suggested that the main characteristics of households with no financial usage are (i) low income, (ii) labour workers, (iii) unemployed or economically inactive, (iv) agricultural workers, and (v) living outside Bangkok and the vicinity, particularly in the rural areas.

4.1.2 Depth of Access: Number of Products Used

In addition to identifying the coverage of financial institutions, it is also important to understand the depth of financial access. One way of examining this is by looking at the number of financial services used by households. The greater number of products used reflects deeper degree of financial access of households.

Figure 3.2 summaries the number of products used by Thai households. This is derived by asking the sampled households if they use each of the twenty-three financial products specified in the questionnaire[13].

Figure 3.2: Number of Types of Financial Services Used by Households

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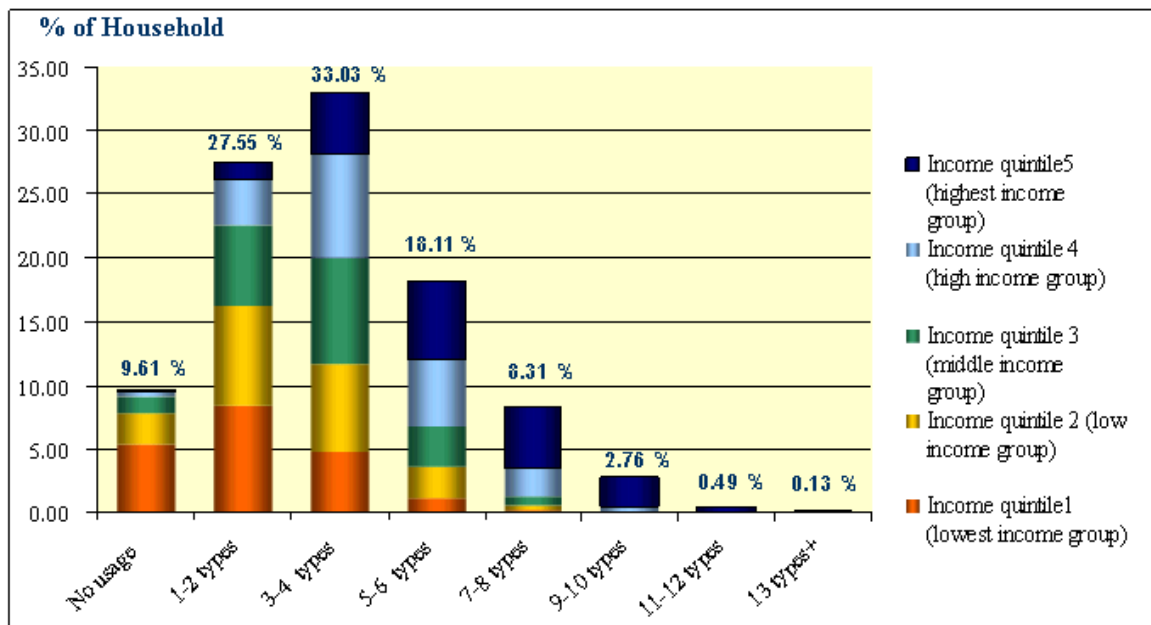
[13] These products include: savings account; fixed account; current account; retirement savings account; savings card; savings shares in cooperatives, savings shares in savings groups; bonds; equity/stocks; mutual funds; retirement mutual funds (RMF) and long term equity funds (LTF); insurance savings, mortgage, business loan, education loan; personal loan; hire-purchase loan; pawning; credit card; debit card; ATM card; fund transfers and payment services, and pooled-fund saving and borrowing within self-organized group in an informal sector ('len share' in Thai).

The average number of types of products used by households is 3.50. Approximately 33.03 percent, comprising mainly of middle to high income households (the third and fourth income quintiles), of the population uses 3-4 financial products, while approximately 27.55 percent of households, comprising mainly of lowest and low income households (the first and second income quintiles), are on the margin of financial access, using only 1-2 products. The highest income group (the fifth income quintile) uses more variety and larger number of financial products. Similar to the figure presented in the previous section, 9.61 percent of households do not use any financial products.

When examining depth of financial access from the geographical point of view, we find that majority of households in both urban and rural areas use 3-4 products, followed by 1-2 products. The mean number of products used is 3.71 in the urban areas, and 3.11 in the rural areas.

From the occupational point of view, it is found that the **majority of labor workers and the economically inactive use the fewest number of products, 1-2 products**, **while majority of those in professional, technical and managerial sector use highest number of products, 5-6 products**. Majority of households in other occupational sectors use 3-4 products on average.

To sum, it can also be suggested that the main characteristics of households with greater depth of financial access are (i) highest income group, and (ii) professionals, technical or managerial workers.

The main characteristics of households with medium depth of financial access are (i) medium and high income groups, (ii) work in unspecified employment, and (iii) work in entrepreneur, trade, and industry sector.

The main characteristics of those on the margin of financial access, using fewest number of products are (i) lowest and low income groups, (ii) labour worker, and (iii) unemployed or economically inactive. There is no distinctive variation in depth of financial access among each location and region.

4.2 Access to Savings Services

One of the most basic financial products can be said to be savings accounts. In this section, we examine proportion of households with and without access to savings access in detail. Access to loans and credit services is discussed in section 4.3. While financial functions such as insurance, payment and information dissemination are also important, they are beyond the scope of this study.

4.2.1 Overall Access to Savings Products

In examining proportion of households with access to savings products, firstly we separate households along a strand of access, ranging from households with saving products in financial institutions from formal, semi-formal, informal sectors, and those without any saving products at all. In this overview discussion, we employ usage as a proxy for financial access, assuming self exclusion to be towards zero.

Figure 3.3: Savings Strand:
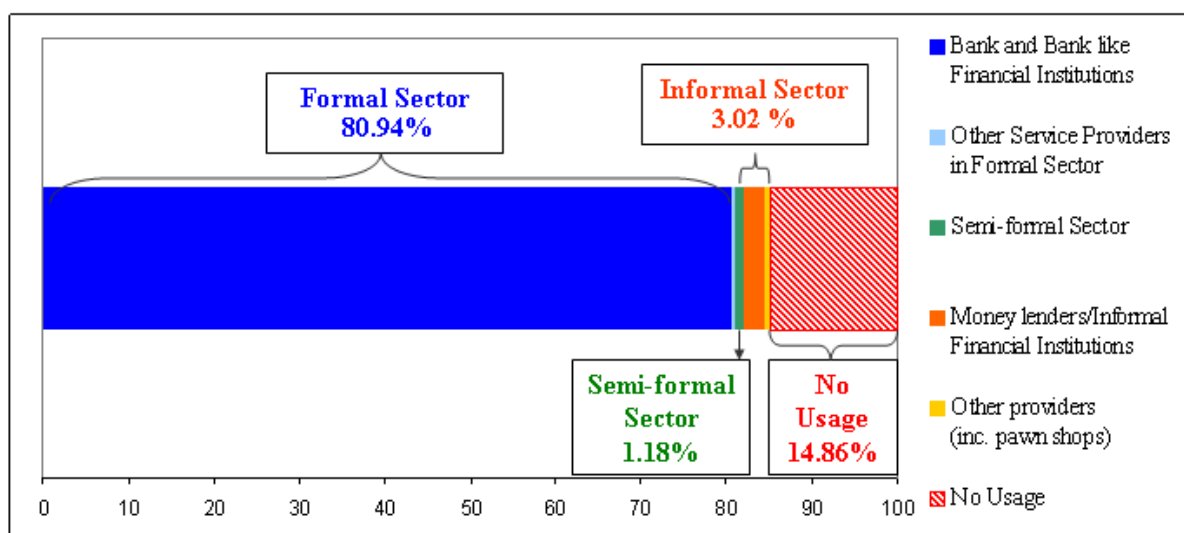
It is found that **approximately 85.14 percent of households have access to savings products**, while 14.86 percent of households do not use savings product from any financial institutions. Of this 14.86 percent of non access households, 7.18 percent is from the lowest income group, 4.20 percent from the low income group, 2.33 percent from the middle income group, 0.87 percent from the high income group, and an insignificant 0.29 percent from the highest income group.

It is found that 80.94 percent of households use savings products from the formal sector. Of this, approximately 80.23 percent use saving products from commercial banks and SFIs.

Approximately 1.18 percent of households use saving products from semi-formal sector, and not from formal sector. The other 3.02 percent use saving products from informal sector[14] only.

Furthermore, it is observed that of 80.94 percent of households who have access to the formal sector, 19.59 percent are from the highest income group, 18.7 percent from the high income group, 16.97 percent from the middle income group, 14.55 percent from the low income group and 11.12 percent from the lowest income group.

The trend is reserved for the semi-formal and informal sectors, where lowest income groups account for highest proportions. Proportions of households using services from the semi-formal and informal sectors decline as income level increases. Evidence shows that the **higher income groups are able to get access to savings products in the formal sector, while lower income groups tend to rely more on savings products from semi-formal and informal sectors.**

[14] This also includes other unspecified financial institutions.

4.2.2 Access to Savings Accounts in Commercial Banks and SFIs

Following findings in section 4.2.1, we find that 80.23 percent of households use savings services from commercial banks and SFIs. Of the 19.77 percent who do not use these services, 0.71 percent use savings services from other formal institutions, another 1.18 percent use the services from semi-formal institutions, and 3.02 percent from informal financial institutions, while 14.86 percent do not use services from any financial institutions.

In this section, we examine access to saving services from commercial banks and SFIs in more detail. Here, we use the complete measurement framework, as seen in diagram 3.2, distinguishing clearly between usage, self exclusion, and no access households.

Survey data show that approximately 80.23 percent of households use savings products form commercial banks and SFIs, 15.37 percent exclude themselves from the services voluntarily, while 4.40 percent lack access to savings accounts.

Figure 3.4: Access to Savings Accounts in Commercial Banks and SFIs
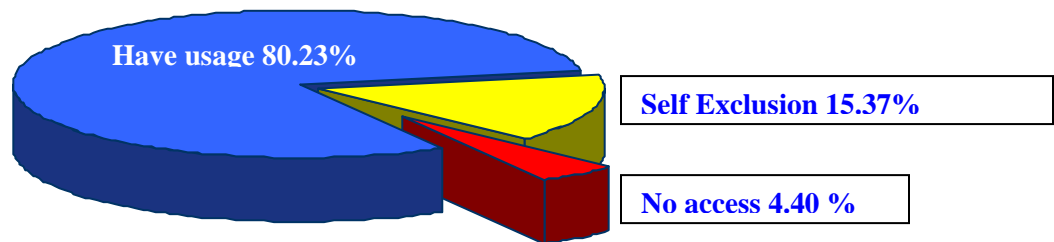
The Non Access

Who are they?

Of the 4.40 percent of households with no access to savings accounts from commercial banks and SFIs, 2.42 percent are from the lowest income households, 1.08 percent from the low income households, 0.59 percent from the middle income, 0.25 percent from the high income, and negligible 0.06 percent from the highest income households.

Approximate 3.57 percent of households in the urban areas are without access to savings in commercial banks and SFIs, compared to 5.81 percent in the rural areas.

Approximately 16.24 percent of those working as labour workers do not have access to savings products in commercial banks and SFIs, while the same is true for the 8.01 percent of the unemployed/economically inactive, the 4.84 percent of those in the agricultural sector, and 3.58 percent of the unspecified employees.

To sum up, it can be suggested that the main characteristics of the households with no access to savings accounts from commercial banks and SFIs are (i) low income, (ii) live in the rural areas, (iii) work as laborer, (iv) economically inactive/unemployed, (v) work in the agricultural sector, and (vi) work as unspecialized employees. Households with one or more of these characteristics are likely to face barrier to access most severely.

Access Barriers

There are different reasons deterring the 4.40 percent of households from having access to savings accounts in commercial banks and SFIs. We can separate this 4.40 percent of households according to their reasons for having no access. These reasons can be considered as their main barriers to access.

Table 3.2: Access Barriers to Saving Accounts

Barriers to Access	Percentage
1. Minimum deposit requirement too high	1.87
2. Distance and traveling time	0.52
3. Complicated product conditions	0.22
4. Feeling too intimidated to approach banks	0.22
5. Insufficient information	0.18
6. Having been denied by banks	0.04
6. Other reasons	1.35

The most significant barrier for the Thai households is the **unsuitability of product design i.e. minimum deposit requirement too high and complicated product conditions.** The second most important group of barrier is the **insufficient level of financial literacy and information provisio**n. This reflects in the reported lack of confidence to approach banks and problem of insufficient information. The third important barrier is **traveling time and distance to the financial service providers**. Evidence shows that the lowest income households face these barriers most severely.

The Self Exclusion

Approximately 15.37 percent of households exclude themselves from using saving products from commercial banks and SFIs. Of this 15.37 percent, 6.34 percent are from the lowest income households, 4.56 percent from the low income households, 2.75 percent from the middle income, 1.19 percent from the high income, and negligible 0.53 percent from the highest income households. Reasons for choosing not to use the savings services are as follows.

Table 3.3: Reasons for Self Exclusion of Savings Accounts

Reasons for Self Exclusion	Percentage
1. Expense higher than income (no savings)	10.01
2. No need	4.60
3. Inadequate/ unattractive returns/benefits from product	0.21
4. Inconvenient bank opening hours	0.11
5. Unsatisfactory customer service	0.01
6. Other reasons	0.44

Despite having no usage, this 15.37 percent of households can be considered as having financial access.

This may sound counterintuitive when 10.01 percent do not in fact have inadequate income. Of this 10.01 percent, we find that 4.40 percent are from the lowest income group, 3.03 percent from the low income group, 1.71 percent from the middle income group, 0.67 percent from the high income group, and 0.21 percent from the highest income group. It can be said that though this group of households, comprising mainly of lowest and low income households, belongs to self exclusion group, they may not have the choice whether or not to use the service, since they do not have sufficient income in the first place. They are considered to have the necessary means to having capability to be financially included, i.e. financial access, as they will be able to make use of financial services as soon as their personal circumstances allow then to have savings. However, they are currently deprived of capability to be financially included, as a result of lack of the ability to use the services, rather than due to lack of financial access.

These households do not have the ability to save even if there are no barriers to access. To enhance the usage of savings accounts for this group of households, policy should aim at improving households' income, earning power and reducing their daily expenses. This policy umbrella may include measures beyond financial sector policy alone, such as measures to promote tertiary education/training and employment opportunities as well as measures to improve welfare provision got low income households. These policies may

involve efforts from various related parties and government organisations and are beyond the scope of the current study.

Of those 4.60 percent who report to have 'no need' for saving products and the other 0.77 percent who have the opportunity but are not completely satisfied with the services offered are said to have financial access.

The Usage

Approximately 80.23 percent of households use saving products from commercial banks and SFIs. Of this 80.23 percent, 11.23 percent are from the lowest income households, 14.36 percent from low income households, 16.66 percent are from middle income households, 18.55 percent from the high income households, and 19.41 percent from the highest income households. Therefore, it can be suggested that income is positively related to usage of savings products from commercial banks and SFIs.

In order to continue improving the services available in the market, it may be useful to understand the problems currently faced by households who use the savings accounts. Of those who use the services, 90.48 percent report that they are satisfied with the services. Approximately 9.52 percent of users encounter some problems. These difficulties are reported in order of significance as follows: distance to the service providers; few number of branches, long waiting queue for services, low interest rates, unsuitable opening hours, high fees, unsatisfactory customer services/ insufficient information from staff, lack of confidence in the institution, and high minimum opening balance/complicated conditions.

4.3 Loans and Credit

4.3.1   Overall access to loan and credit

Overall access to loan and credit services is investigated in a similar manner to the overall assessment of savings products in section 4.2.1. Usage is employed as proxy for access in this subsection.

Figure 3.5: Credit Access Strand
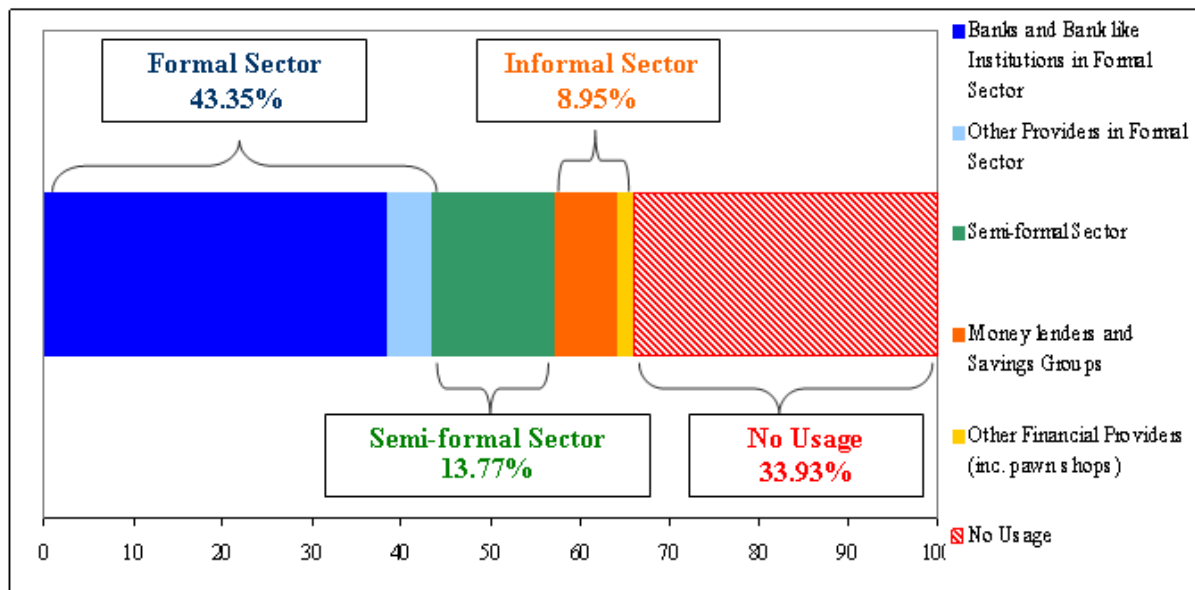
Approximately 33.93 percent of households do not use loans/credit products from any financial institutions. Of this 33.93 percent, 9.86 percent are from the lowest income group, 7.87 percent from the low income group, 7.17 percent from the middle income group, 5.51 percent from the high income group, and 3.52 percent from the highest income group.

From figure 3.5, it can be seen that 43.35 percent of households use loans/credit products from the formal sector. Within this 43.35 percent, 31.02 percent use loans and credit products from commercial banks and SFIs. The other 12.33 percent, who do not use services from commercial banks and SFIs, but use the services from finance companies, credit fonciers, credit card and personal loan companies.

Approximately 13.77 percent do not have loans from the formal sector, and use credit services from the semi-formal. The other 8.95 percent have loans/credit products from informal sector only. Evidence also suggests that the higher income groups are able to get

access to loans/credit products in the formal sector, while lower income groups tend to rely more on the semi-formal and informal sectors.

It is found that of 43.35 percent of households who have loans/credit services from the formal sector, 14.11 percent are from the highest income group, 10.11 percent from the high income group, 7.67 percent from the middle income group, 6.62 percent from the low income group and 4.86 percent from the lowest income group. The trend is reserved for the semi-formal sector, where lowest income group account for the highest proportion. Middle income group accounts for the largest portion in the informal sector. Evidence shows that the higher income groups are able to get access to loans and credit products in the formal sector, while middle and lower income groups who do not have access to the formal sector tend to rely on informal and semi-formal sectors.
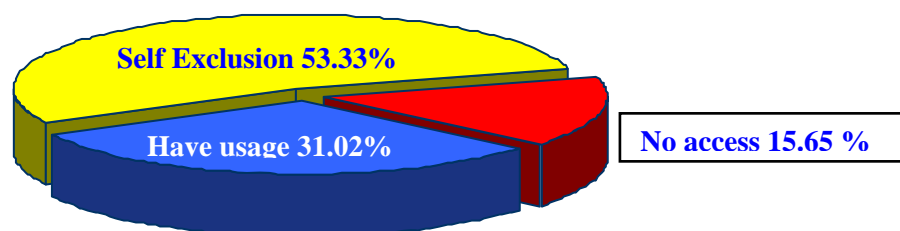
4.3.2 Loan and Credit Service in Commercial Banks and SFIs

Following the findings in section 4.3.1, we find that 31.02 percent of households have loan and credit products from commercial banks and SFIs. Of the 68.98 percent of the population who do not use the services from commercial banks or SFIs, 12.33 percent use services from other formal institutions e.g. financial companies, credit fonciers, credit card and personal loan companies, another 13.77 percent use services from semi-formal, and 8.95 percent from informal financial institutions, 33. 93 percent do not use services from any financial institutions.

In this section, we examine credit access from commercial banks and SFIs in more detail, using the complete measurement framework. We try to distinguish between households that belong to usage, self exclusion, and no access groups.

Survey data show that that approximately 31.02 percent of households have loan and credit products from commercial banks and SFIs, while the other 53.33 percent exclude themselves from the services in commercial banks and SFIs voluntarily, and approximately 15.65 percent report to have no access to the services.

Figure 3.6: Access to credit

The Non Access

Who are they?

Of the 15.65 percent of households with no access to loan and credit services from commercial banks and SFIs, 5.14 percent are from the lowest income households, 3.97 percent from low income households, 3.34 percent from middle income, 2.36 percent from the high income, and negligible 0.84 percent from the highest income households.

The ratios of households without access to loan and credit products from commercial banks and SFIs are similar for both urban and rural areas. Approximately 15.73 percent of households in the urban areas are without credit access, and the same is true for the 15.52 percent of households in the rural areas.

Approximately 31.86 percent of those working as labour workers do not have access to loans from banks. This is also the case for the 21.35 percent of unspecified employees, the 17.42 percent of those who are economically inactive or unemployed, and the 9.95 percent of households in the agricultural sector.

Therefore, it can be suggested that the main characteristics of the households who do have access to loan/credit from commercial banks and SFIs are (i) low income, (ii) work as labourer, (iii) employed in unspecified jobs, (iv) economically inactive/unemployed, or (v) work in the agricultural sector. Households with one or more of these characteristics are likely to face access barrier most severely.

Access barriers

There are different reasons preventing the 15.65 percent of households from having access to loan and credit products from commercial banks and SFIs. We can separate these 15.65 percent of households according to their reasons of no access, in other words, their main barriers to access.

Table 3. 4: Access Barriers to Credits

Barriers to Access	Percentage
1. Inadequate financial status/ lack of collateral	9.87
2. Feeling too intimidated/ inhibited to approach banks	1.94
3. Complicated product conditions	1.13
4. Insufficient information/understanding	0.91
5. Have been denied by banks	0.73
6. Distance and traveling time (too far/long)	0.11
7. Other reasons	0.96

The most significant access barrier for the Thai households is **inadequate financial status and/or lack of collateral** (9.87 percent of households). It can be argued that the second group of barriers is associated with **insufficient financial literacy**, reflected by the lack of confidence to approach banks and the lack of information and understanding of the financial product (2.9 percent of households). The third set of barriers includes **inflexibility and unsuitability of product design and distribution channel** (1.97 percent of households).

The Self Exclusion

Approximately 53.33 percent of households exclude themselves from using loan and credit products from commercial banks and SFIs. Of this 53.33 percent, 10.40 percent are from the lowest income households, 10.56 percent from low income households, 11.17 percent from middle income, 11.04 percent from the high income, and negligible 10.16 percent from the highest income households. It is found that the ratios of the self exclusion are relatively similar for all income groups. Reasons for choosing not to use the savings services are as follows.

Table 3.5: Reasons for Self Exclusion of Loans

Reasons for Self Exclusion	Percentage
1. No need	31.63
2. Prefer to borrow from other sources	20.24
3. Other reasons	1.46

The main reason for non-usage is the lack of demand for credits. In examining the proportions of those who claim to have no need for credits by income groups, we find that there are no significant variations among income groups. However, it should be noted that the low income groups account for slightly higher proportion than the high income groups in this group that report to have no need for credit.

The second main reason is the households' preference for other types of financial institutions. This may imply that there may be room for improvement in product design and distribution channel in order to increase usage of loan from commercial banks and SFIs for those with demand for credits. Majority of the 20.24 percent of households who report to prefer borrowing from other financial service providers have loans from semi-formal and informal sector.

Despite the current lack of demand and preference for alternative choices of services, households in this group can be argued to have access to credit service in commercial bank and SFIs.

The Usage

Approximately 31.02 percent of households have loan and credit products from commercial banks and SFIs. Of this 31.02 percent, 4.44 percent are from the lowest income households, 5.47 percent from low income households, 5.49 percent from middle income, 6.60 percent from the high income, and 9.00 percent from the highest income households. It can be suggested that level of income is positively related to usage of loan from commercial banks and SFIs.

Of those who use the services from commercial banks and SFIs, 89.95 percent report that they are satisfied with the services, while approximately 10.05 percent encounter some problems. These difficulties can be reported in order of significance as follows: inflexibility in repayment process; insufficient amount of loan received, inability to negotiate due to lack of alternative choices, complicated procedures and conditions, distance and travel time, loan approval time, unsuitable duration and type of loan, insufficient information regarding terms and conditions, and poor customer service.

5. Financial Literacy

Financial literacy is crucial in enabling individuals to make informed financial decision in order to enhance their well-being in a meaningful and sustainable manner (FSA 2005, Peachy and Roe 2006, SEDI 2004). Financial literacy has been defined as "the ability to read, analyze, manage, and communicate about the personal financial conditions that affect material well-being. It included the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy" (Vitt et al 2000:2 cited in SEDI 2004), and similarly as "the ability to make informed judgements and take effective decisions regarding the use and management of money" (Noctor et al 1992 cited in FSA 2005:13).

In promoting capability to be financially included, we need to enhance opportunity and ability to use financial services. Financial access concerns with the opportunity to use financial services and financial literacy has been suggested to be a key factor contributing to household financial ability. From analyses in 4.2.2 and 4.3.2, we find that the lack of financial literacy is reported to be among the main obstacles to financial access in Thai household sector. Therefore, **the importance of financial literacy in promoting capability to be financially included by enhancing financial access and financial ability should be stressed**. This section examines the level and nature of financial literacy of Thai households.

In constructing an indicator for financial literacy, we examine households' degree of awareness and understanding of a number of financial services and a relevant government policy. This is done in two main steps. First, we find out households' degree of familiarity of each of the twenty two products listed in the questionnaire[15]. If households have "never heard of the product", they are given zero point. If they "have heard of the product but do not know how it works", they are given one point. And finally, if they "understand how the product works" or are currently using the product, they are given two points. We repeat this exercise with twenty two products. Full score for this section is 44 points. Each of the product and service is given equal weight of one.

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[15] These twenty-two products include: savings account; fixed account; current account; retirement savings account; savings card; savings shares in cooperatives, savings shares in savings groups; bonds; equity/stocks; mutual funds; retirement mutual funds (RMF) and long term equity funds (LTF); insurance savings, mortgage, business loan, education loan; personal loan; hire-purchase loan; pawning; credit card; debit card; ATM card; fund transfers and payment services.

Second, we ask if households are aware that currently there are government deposit guarantee schemes for savings accounts. If the answer is positive, households are given one point, and zero otherwise. Putting the two exercises together, we have a full score of 45 points. The higher the score implies the higher degree of financial literacy.

It is important to note that different financial products and services may carry different degree of importance for different households.   It can be argued that unique weight may need to be given to each product according to its importance. For example, households who are net savers without the need to borrow may not need to understand how loan products work as well as they need to understand how the saving products work. Consequently, it may be suggested that more weight could be given to understanding savings products and less weight given to understanding loan product for this household.   This approach may be able to take into account the unique situations and needs of each household more accurately.

However, the main difficulties in implementing this approach lie in the process of designing the criteria for determining appropriate weight for each product. First, we need to acquire more in-depth information in order to understand different profiles and needs of each household at a particular time in order to be able determine appropriate weight for each product according to their importance to each household. Second, these weights may also need to be revised and adjusted periodically as financial needs of each household change over time.   And finally, even if we are able to acquire more information and able to revise the weight given to each product periodically, currently we do not have a well-established criterion to determine suitable weight for each financial product, any type of criteria proposed at present may involve degree of ambiguity and subjectivity.

Given the difficulty and ambiguity in assigning different weight to each of the financial product and service and given that our focus is on household's overall knowledge and understanding of the financial sector, in this study we give equal weight of one to the twenty-two financial services listed in the questionnaire. It is argued that understanding and awareness of key financial products and financial regulations are important for all households regardless of their current financial needs. Even if households do not need to use certain products today, they may face a situation in the future where they may need to make use of such services. Wide-ranging and deeper understanding of available financial services and regulations is crucial in helping households to better manage their financial affairs and make more informed decision at all times. Therefore, the main focus of this exercise is to evaluate households' overall awareness, familiarity and understanding of products and services available in the market.

Figure 3.7 summaries the points scored by Thai households. The scores can be divided into three main ranges: the lower range spans between 0 and 14 points; the middle range between 15-29 points, and the upper range between 30-45 points.

Figure 3.7: Financial literacy of Thai Households
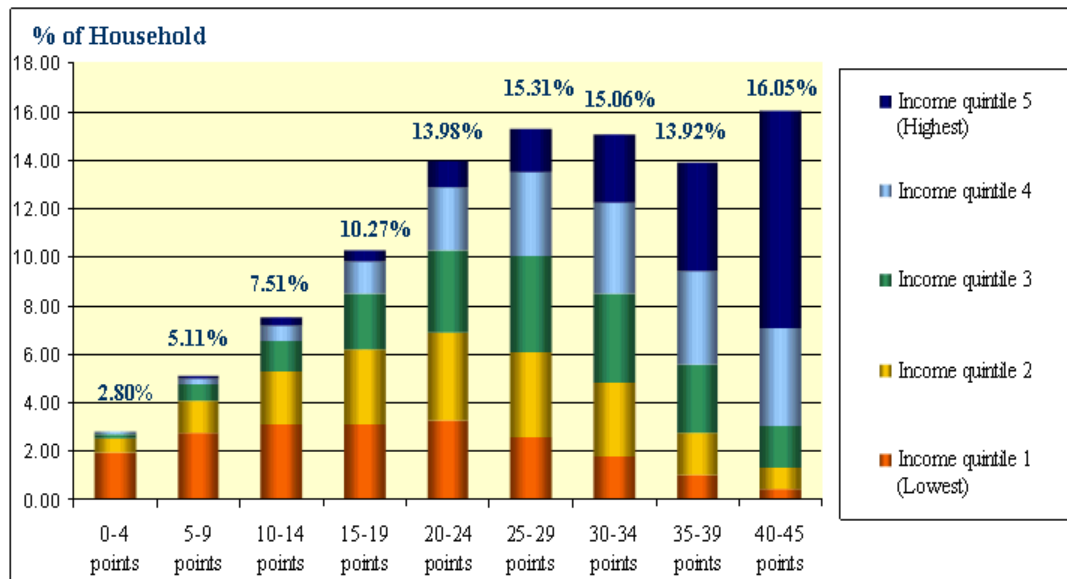
The average score for all Thai households is 27, in the middle range.   Evidence shows that financial literacy is not evenly distributed among income groups. The average score for the lowest income group is 18, and 23 for the low income group, 27 for the middle income group, 31 for the high income group, and 36 for the highest income group. A distinctive positive relationship between levels of income and financial literacy can be observed, with financial literacy increasing with income level.

Majority of lowest and low income households score between 20-24 points, while majority of middle income group score between 25-29 points and majority of top two highest income groups score between 40-45 points.

While the top two income quintiles, the high and highest income groups, account for the highest portions (3.99 and 8.99 percent, respectively) of the 16.05 of households in the highest score range, the bottom two income groups, lowest and low income groups, register the smallest portions in the range (with only 0.45 and 0.89 respectively).   The reversed pattern is observed in the lowest score range.

Evidence also suggests a clear disparity in the level of financial literacy between urban and rural households. We find that the mean score for households in urban areas is 29 points, and 24 points for the rural areas. Majority of urban households score between 40- 45 points, while majority of rural households score between 25-29 points.

In terms of regional variation, we find that the average score for households in Bangkok and the vicinity is 33, while all other regions in the country score less than 30 points. There is a

marked difference in the average scores between households in Bangkok and the vicinity and households in all other regions, but not among these regions.

It is found that occupations with the highest level of financial literacy are those who work in professional, technical and managerial sector with average score of 38 points, followed by entrepreneurs, trade and industry with 29 points and other unspecified employees with 28 points. Occupational sectors which register the lowest level of financial literacy are the labour workers, with average score of 20 points, agricultural workers, and the economically inactive have the same average scores of 23 points.

It can be suggested that the main characteristics of households with satisfactory level of financial literacy (have the awareness and understanding of majority of the services) are (i) the highest and high income households groups, (ii) live in Bangkok and the vicinity, (iii) work in professional, technical, and managerial sector.

The main characteristics of households who have medium level of financial literacy (have the awareness but do not always have full understanding of majority of the services) are (i) middle income, (ii) live in urban areas outside Bangkok (iii) work in the entrepreneur, trade and industry sector, and (iv) work in unspecified employment.

Characteristics of households who have low level (inadequate awareness and understanding of majority of the services) of financial literacy are (i) low income, (ii) live in rural areas (iii) work as labour workers, (iv) economically inactive/unemployed, or (v) work in the agricultural sector. These characteristics are indeed similar to those of the non access.

6. Summary and Policy Issues

The main statistic findings in chapter 3 can be summarized as follows.

- **The Financially Served**: 90.39 percent of Thai households use financial services.

- **The Formally Served**: 83.65 percent use services from formal financial institutions.

- **The Financially Excluded**: 9.61 percent do not use any financial services

- **Depth of Access:** Majority of Thai households use 3-4 financial products, and average number of product used is 3.5 products.

- **Access to Savings**: 80.94 percent have access to savings products in the formal sector.

- **No Access to Savings**: 4.40 percent lack financial access to savings products from commercial banks and SFIs, their main barriers include minimum deposit requirement, distance and traveling time, production conditions, lack of confidence, insufficient information, and banks' denial.

- **Access to Loan/Credit**: 43.35 percent have access to loans/credit in formal sector

- **No Access to Loan/Credit**: 15.65 percent have no access to loan and credit products from commercial banks and SFIs, their main barrier are inadequate financial status/ lack of collateral, feeling too intimidated/ inhibited to approach banks, complicated conditions, insufficient information/understanding, bank's denial, and distance and traveling time.

- **Main Characteristics of the Financially Excluded**: low income, live in rural area, unemployed or economically inactive, work as labour worker and agricultural worker.

- **Main Characteristics of Households with Inadequate Financial Literacy:** (i) low income (first and second quintiles), (ii) live in the rural areas (iii) work as labour workers, (iv) unemployed, or (v) work in the agricultural sector.

Section 2 of this chapter proposes that capability to make use of financial services, i.e. capability to be financially included, requires *opportunity and ability* to use financial services. Financial access is suggested to be the main instrument for providing opportunity for households to use financial services, while financial literacy is the key variable to enhance household's ability to make use and maximize benefit from the given financial services.

From the survey results, we find that majority of households are able to gain access to financial services in the formal sector. Approximately 4.40 and 15.60 percent of households lack access to savings account and loan/credit services from commercial banks and SFIs, respectively. The main access barriers are found to be: (i) insufficient financial literacy and information; (ii) income and collateral constraints for loan products; and (iii) unsuitability of product design including distributing channel.

In improving financial access for those who lack sufficient financial understanding and knowledge on financial products, policy should aim to promote **financial education,** particularly for the household sector. Furthermore, it is crucial to **improve the quality and availability of information on financial products provided to the public**. More comprehensive and easily accessible product information will assist households in making appropriate financial decisions, helping them to compare and select products more efficiently as well as allowing them to prepare for loan application process more effectively. This will address the problems of lack of confidence and inadequate information that currently deter households from accessing financial services.

The policy direction for improving access for majority of the non-credit access households, the 9.87 percent of households who report to have inadequate financial status and lack collateral, may need to address the problem of *information asymmetry*. With better knowledge and understanding about financial ability of household, following improved data availability; collateral requirement may play a less significant role in loan application. In order to distinguish between those who have the ability and those who do not have the ability, we need to look at their past and present creditworthiness as well as their future income potential.

One of the important policy directions that may address the problem of information asymmetry and thus help promote financial access for the creditworthy households who currently lack the access is to **improve data on household credit records**. In this regard, one possible policy direction is to **expand the role of credit bureau to include credit information from all types of financial institutions**, covering formal, semi-formal and informal financial institutions. Some households, who are not able to gain access to credit from formal institutions, may have good credit history with cooperatives and/or savings groups. If this credit information can be made available to formal financial institutions, it may help these households to gain access in the formal sector.

For households whose main barrier is the unsuitability of product design, policy should aim to encourage **innovations in product design, distributing channel and/or business model** that can offer credit services to these households in a sustainable and commercially viable manner.

In this regard, government may choose to accelerate their efforts in **collection and dissemination of data and analysis on financial activities and financial access** in a comprehensive and systematic manner. Such data are also important for the private sector in identifying market segments that are currently underserved in order to develop suitable services and expand their clientele. This can be also helpful for new market player in developing efficient business model and appropriate product innovations.

In addition to the above policy issues, it is imperative that government ensure that **consumers are well informed and are protected** against any unfair or abusive treatments from financial service providers.

4 Conclusion and Policy Implications

The results in chapter 2 show that the household balance sheet is strong at the macro level. However, highly leveraged households are vulnerable to interest rate shocks. Households, regardless of leverage, are vulnerable to economic shocks. The regression results also strongly show that a vibrant financial sector goes hand-in-hand with a resilient household sector. Financial access helps households smooth their consumption, lowering cash-flow stress, and maintain loan repayment in the face of shocks.

It may seem paradoxical that financial access helps household stability while high leverage weakens it. After all, high leverage is the apparent outcome of financial access and high debt. It is not immediately apparent that high financial access necessarily results in high leverage, as high wealth households, which have high financial access, exhibit low leverage due to large accumulation of assets. Financial access helps households to accumulate wealth as shown by the experience of the developed economies.

Nevertheless, financial access may raise leverage in the short-run as households take on debt in increasing multiples of their assets or collateral in order to accumulate wealth in the long-run. Financial access therefore can be a double-edged sword, if not well-implemented. It can help and hurt household stability. The key for policymakers is not to restrict the rise in the financial access; but to develop a financial sector that is able to provide opportunities to all households that have adequate ability to use financial services in an appropriate manner, enabling households to effectively use financial services to manage risk, generate income and accumulate wealth.

It is suggested in chapter 3 that policy direction to enhance financial access and improve financial ability of the financially underserved households may include (i) promotion of financial education (ii) improvement in product information provision for consumers (iii) enhancement of data on credit history/record (iv) encourage innovation in product designs, distributing channels, and business models that better suit the needs and characteristics of the underserved households and (v) enhancement of consumer protection measures.

Promotion of Financial Literacy

Financial literacy allows households to make sound judgment and optimize their opportunities in enhancing their well-being in a sustainable manner. Promoting financial literacy is particularly important for the financially excluded. From the survey, it is found that lack of financial literacy represses households from gaining access to financial services. Furthermore, financial education is also important for those who already have access to financial services, helping them to benefit from the services in a meaningful and sustainable manner and to have better market discipline. Moreover, as households increase their leverage and become exposed to interest rate changes, households themselves should understand and anticipate interest rate changes. Therefore, improvement in financial literacy is vital in

promoting capability to be financially included, particularly in an environment where risk and risk management are becoming more complex and demanding.

Efforts and initiatives to enhance financial literacy may include development of partnerships between government sector, private sector, and university/colleges/school in promoting financial education and implementing regular campaigns or events on current financial issues of interest to increase awareness of important financial issues or concerns.

Product Information Provision for Consumers

Information regarding product features, terms and conditions, including interest rate and fee charged by financial institutions should be provided to the public in a clear, comprehensive, and standardized manner in order to enhance households' understanding of the financial product, allowing them to make effective service comparison and appropriate financial decision. In this regard, government and private sector may choose to develop a minimum set of information which is to be presented in a standardized format and disseminated to the public in a clear and systematic manner.

Enhancement of Credit Information

Key to efficient and optimal credit provision is data on households' past and present credit record as well as their future income potential. It is seen from chapter 3 section 4.3.1 that 9.87 percent of Thai households lack access to credit due to inadequate financial status and lack of collateral. Better credit history information may reduce information asymmetry in the credit market and allow financial institution to evaluate and manage credit risks more efficiently, thereby reducing the importance of collateral requirement.

Expansion of the role of credit bureau to cover credit information from financial institutions in formal, semi-formal and informal sectors may be useful in improving the quality and coverage of credit data. This will help creditworthy households, who are currently deprived of the financial opportunity, to gain access to appropriate financial services in the formal sector, while enhancing market discipline for those who already have access to credit services.

The ideal financial sector is one that is able to offer appropriate opportunities to all financial users who have the ability to use financial services. For savings products, the distinction between those with and without the ability is relatively clear. Households who have adequate money to save and necessary documents such as identification card can be said to have the ability to use savings products. However, mechanism for judging household's credit worthiness and ability to repay loan is much less clear-cut. This is largely due to insufficient data on household's credit history and inadequate understanding of household's ability to pay.

Having sufficient credit data and efficient credit screening mechanism will help ensure that households who have adequate ability will get the appropriate financial opportunity and those who lack the ability will be given alternative options, according to their ability. Giving credit access to households who lack sufficient ability to repay may pose risks of becoming over indebtedness to the households themselves, and consequently to the stability of financial sector. However, if opportunity is denied from those who have promising potential, resources may not be optimally allocated, impeding individual well-being enhancement and retarding overall economic and social development. Therefore, it is crucial that financial sector is able to provide appropriate opportunity to all households according to their abilities, in order to maximize benefit from financial services and minimize risks from inappropriate financial usage

Development of Suitable Services

Households' access to financial services can be enhanced by development of financial products, distributing channels and business models that are able to optimally serve the needs of different household groups. Survey results from chapter 3 indicate that 4.40 percent of households lack access to savings account from commercial banks and SFIs, mainly due to high deposit requirement, inadequate financial literacy and information, and distance; while 15.56 percent of households lack access to loans and credit services, as a result of inadequate financial status/collateral and insufficient financial literacy.

In order to overcome these barriers, it is important to facilitate development and innovation of appropriate product design, distributing channel, and new technology that can lower transaction costs for both household users and financial institutions. With lower cost and increased efficiency in the system, financial institutions may have more capacity to extend their services to the financially excluded.

Research on development of business model that can offer financial services to the underserved in a commercially viable manner will help enhance opportunities for those who currently lack the access as well as new business opportunities for financial institutions. Consultative Group to Assist the Poor (CGAP 2006 cited in Peachy 2006) has argued that there are increasing tendency for commercial banks to move towards serving the lower income groups. The first reason is that there is an increase in competition in the conventional commercial and upper retail markets. The second reason is that there is an increased recognition and data available regarding the underserved market segments.

Financial sector policy that allows entry of niche market players to serve those who are currently deprived of the opportunity to use financial services and lower transaction costs will enhance the efficiency and improve access in the financial system. A sound supervisory framework is crucial in maintaining household and financial stability.

Consumer Protection

It has been suggested that government has important role in informing and protecting the public (Knight 2006). Establishment of financial consumer protection and financial advisory units that offer advice and suggestions on financial and investment decisions to households regarding opportunities and risks involved may help to empower and protect households in their financial dealings. Such protection and advisory units can assist households to gain access to suitable financial services as well as be protected against any possible unfair and/or abusive financial arrangements.

Monetary Policy

It is very probably that household leverage will increase as financial access rises. Households will become increasingly sensitive to the effects of interest rate changes as amplified by leverage. In this respect, monetary policy transmission may become more effective or more potent. As such, large and sudden changes in interest rate changes should use sparingly lest they adversely affect the household sector. Due to the increased effectiveness of monetary transmission, smaller changes in interest-rates in the future may become just as effective as larger changes in the past. Effective communication on the part of the central bank can also go a long way in shaping household expectations and preparing households for future interest rate changes.

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