# Thailand's household sector balance sheet dynamics: evidence from microeconomic and macroeconomic data

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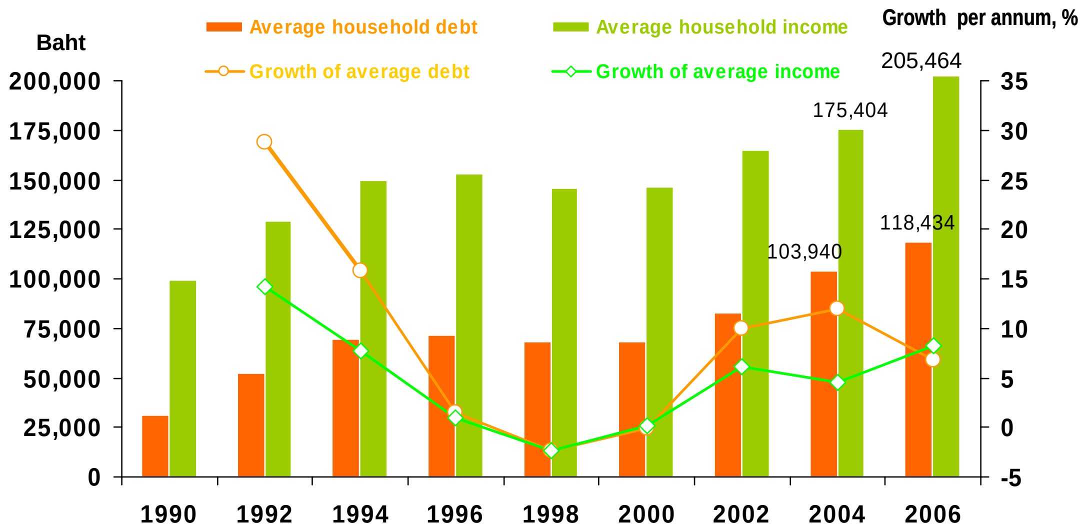
## 1. Introduction

In the past few years, Thailand's average household debt has risen rapidly to unprecedented levels amid strong economic growth. The debt-to-income ratio has doubled since the pre-crisis years. This increase has been a widespread phenomenon. Debt has risen across all income and age groups across the country. A central economic debate of the day is whether we, as a society, should be concerned about the rising and unprecedented level of debt borne by the household sector. However, a balanced debate should focus on both sides of the household balance sheet. The purpose of this paper is to place concerns over household debt in perspective by constructing the household sector balance sheet.

Figure 1

**Thailand's household debt**




Source: Socioeconomic Survey, National Statistical Office, 1990-2006H1.

Rising household indebtedness is not necessarily a problem in itself, as it may simply reflect intertemporal decision-making on the part of households and the resulting desire to smooth their consumption over time. In principle, debt can be good for households. It allows households to bring forward future income and to afford expensive durables such as real estate, vehicles, refrigerators or home business equipment. It also allows households to maintain their standards of living in the face of unexpected shocks such as illness or unemployment.

Most macro-prudential indicators for the household sector at present do not point to an alarming level of debt or deterioration of household credit quality. Despite recent sharp increases, Thailand's level of household debt, expressed either as a share of GDP, or of disposable income, is still lower than or at least comparable to those of other regional and advanced economies. Regarding credit quality, the rates of non-performing loans for consumer credits, albeit remaining relatively high as a result of the crisis legacy, have been declining steadily.

Nevertheless, risks are present. Increased leverage renders household consumption and its ability to service its debt become more sensitive to future adverse income and interest rate shocks. As such, the issue has important and wide-ranging implications on five levels: the household's financial health, financial sector stability, the macro-economy, the integrity of the social fabric, and the appropriate responses of policy-makers.

Unfortunately, debate concerning the sustainability of household debt has been dominated by debt growth figures. However, a sound analysis of household debt should occur within the context of the household balance sheet. The household balance sheet is composed of both liabilities and assets. The liability side includes household debt such as mortgage, home business, vehicle leasing and informal loans. The asset side includes household real estate, financial wealth, vehicles, and home business equipment. This paper seeks to measure aggregate household debt and household assets using data from household surveys and financial institutions. We define household debt as any debt incurred by the household, regardless of source or purpose. As a result, loans borrowed from informal sources are also included. We find that different sources produce dramatically different measures of household debt. We reconcile the different measures to obtain an estimate of the household sector's financial position. International comparisons and the level of household assets suggest that Thailand's household sector position at the macroeconomic level is not precarious.

## 2. Data

Tackling these issues requires analysis and data at the microeconomic level. As such, this paper analyses and synthesizes findings from three sources: the National Statistical Office's Socio-economic Survey (2004), a Bank of Thailand Household Survey on Household Attitudes towards Debt and Savings (2004).

An in-depth study of the household sector requires household data at the microeconomic level. As such, this paper relies on two household surveys: the National Statistical Office's socio-economic survey and the Bank of Thailand survey on household attitudes towards debt and savings. Details of the surveys follow.

### 2.1 The Socioeconomic Survey (SES)

The Socioeconomic Survey (SES), conducted by the National Statistical Office (NSO), collects information on household income, expenditures, debt, and household characteristics, covering country-wide samples of private, non-institutional households both in municipal and non-municipal areas. It is Thailand's preeminent source of microeconomic information of households. The survey is usually conducted every other year, except after the 1997 crisis to 2002 where it was conducted on annual basis but with a substantially smaller number of household samples in the odd year. Under the NSO methodology on collection period, all the sample households were divided into twelve equally representative sub-samples, with each sub-sample being interviewed during the period of one month.

The (SES) is Thailand's most comprehensive and representative household survey. In 2004, the survey covered approximately 34,000 households. The survey sample was generated from a stratified three-stage sample design in which regions are selected first, provinces second, and clusters of households last. Given the standard stratified design, household sampling weights are calculated for use in obtaining estimates of population parameters. We use the SES survey to produce estimates of household debt and household real estate.

## 2.2 Survey on Household Attitudes toward Debt and Saving (HADS)

In order to improve our understanding of household debt, the Bank of Thailand carried out a survey on Household Attitudes toward Debt and Saving (HADS). The survey was conducted during June 2004 and covered 2,800 households in all five regions of Thailand. The aim was to gather a national database with a more qualitative nature to complement the quantitative data from the SES. The questionnaire is divided into 5 parts, (1) respondent and household characteristics, (2) household financial position with emphasis on debt holdings and perceived debt burden, (3) attitudes towards on borrowing and default, (4) attitudes towards savings, and (5) financial literacy.

The survey sample was generated from a stratified three-stage sample design in which regions are selected first, provinces second, and clusters of households last. Given the standard stratified design, sampling weights are calculated for use in obtaining estimates of population parameters. The National Statistical Office's Sampling Department provided and implemented the sampling methodology as well as providing maps of sampled household blocks.

We use the HADS survey to produce estimates of informal debt and the macroecononomic level. The HADS survey is notable in that it requests each household's total amount of informal debt. Prior to the HADS survey no such information existed.

## 2.3 Financial sector data

We also utilize data from financial sector institutions in measuring household debt and assets. Financial institutions include commercial banks, special financial institutions, finance firms, cooperatives, the village fund, the Bank of Thailand, and the stock market.

To construct aggregate household debt, we sum up loans to households issued by commercial banks, special financial institutions, finance firms, cooperatives, the village fund and transfers to the asset management committee. This is by no means a simple exercise given the large universe of household credit providers in Thailand.

Measuring household financial assets is somewhat easier; we simply sum up household deposits in commercial banks, special financial institutions, and cooperatives. We assume that all the deposits in the special financial institutions are household deposits. This is a reasonable supposition given that the special financial institutions, such as the Government Savings Bank (GSB), the Government Housing Bank (GHB), and the Bank for Agriculture and Agricultural Cooperatives (BAAC) were set up by the government to provide financial services to low-income households. Household assets in the form of mutual funds, stocks, and treasury bonds are included. Household assets in the form of mutual funds and treasury bonds are reported by financial institutions.

Furthermore, household assets in the form of real estate is estimated using average housing prices obtained from mortgage loan appraisals in the Bangkok metropolitan area. We note that actual amounts of stock and real estate assets in the ownership of households are not reported by the financial institutions. Using flow data on share purchases, we estimate Thai households as holding 32 percent of stock market capitalization directly, in addition to those held through mutual funds. We use household survey data and mortgage loan appraisal data from banks to estimate household assets in the form of real estate and stocks. Table 1 summarizes available data on the household balance sheet at the micro and macro levels.

Table 1

**Thai household sector balance sheet data availability**

| Household balance sheet statistics | Currently available | Additional data available from 2007 onwards |
|---|---|---|
| Aggregate debt | **Formal household debt** from formal sector data (e.g. commercial banks, specialized financial institutions, cooperatives, village fund).<br>**Total household debt** aggregated from the SES.[1] | **Informal debt** to be aggregated from the SES 2006. |
| Aggregate financial assets | **Saving deposits** from formal sector data (e.g. commercial banks, specialized financial institutions, cooperatives), **bonds**, **stocks** (imputed), **mutual funds**, **government pension fund**. | **Stocks** directly owned by households may be aggregated from SES 2006Q4.[2] |
| Aggregate non-financial assets | **Real estate sssets** estimated from (1) housing rent reported in the SES and (2) mortgage housing valuation from major financial institutions. | **Real estate, vehicles, livestock**, **home business assets** can be aggregated from household-level data from the SES. |
| Household-level debt | SES, 1996-2006 every two years, National Statistical Office. | **Formal and informal debt**, SES, 2006 onwards, *yearly basis*, National Statistical Office. |
| Household-level assets | | **Financial, real estate, vehicles, livestock home business assets** from the SES) 2006.<br>A detailed breakdown of financial assets (e.g. **savings account, stocks, pension, cash, gold**) will be available for the SES 2006Q4.[3] |

[1] The Socioeconomic Survey (SES) is Thailand's most representative household survey. The 2006 survey covers 48,000 households across the country. [2] This estimate may under-measure as high-income households are difficult to survey. [3] Detailed information on financial assets to be attained from a special SES survey module jointly implemented by the National Statistical Office and the Bank of Thailand. The sample covers approximately 12,000 households across the country.

Source: Compiled by author.

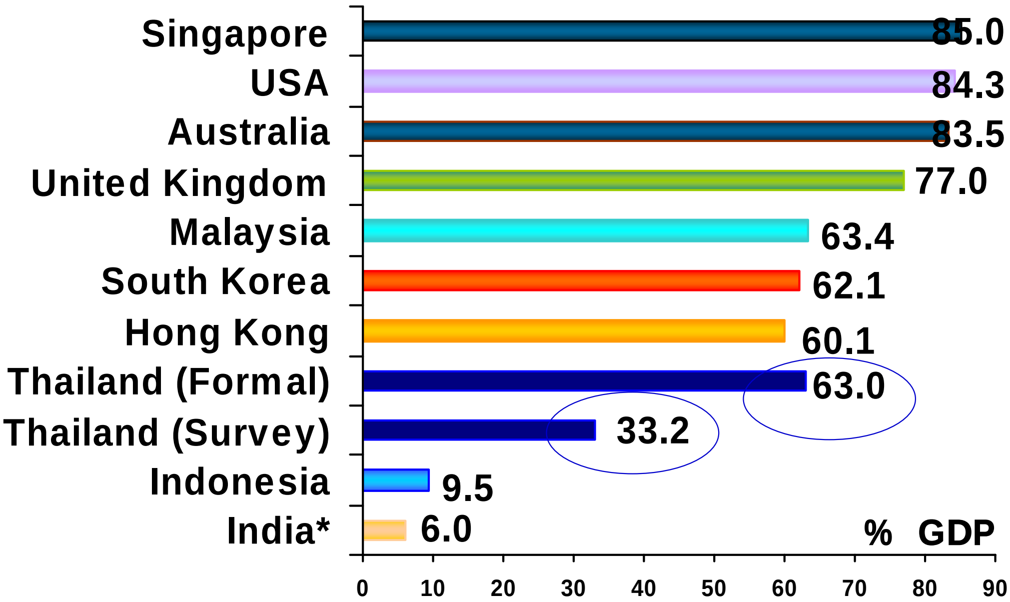
## 3. Measuring household debt

Measuring Thailand's household debt poses a number of problems. First, many households borrow from moneylenders in the informal economy. Informal loans do not appear in official databases on financial transactions. Informal loans should not be ignored give the large size of the informal sector. Fortunately, household survey data offer a solution, albeit imperfect, since household debt figures obtained from surveys and financial institutions are not compatible. In this section we suggest a method for estimating Thailand's overall household debt, formal and informal, and a way to reconcile survey and formal sector data.

We address the problem of estimating informal debt by using household survey data in which households are asked to report all their household debt regardless of their sources. A difficulty arises because the survey does not ask households about amounts of informal loans.[1] Rather, each household is asked about total outstanding debt which should include both formal and informal loans. Next, households are asked to specify their primary and secondary loan sources from a list which includes commercial banks, Special Financial Institutions, cooperatives, and "private persons outside the household." Informal debt is defined as loans from "private persons outside the household". Using this information, we estimate the upper and lower bounds for informal household debt. The lower bound is defined as the sum of household debt for those households borrowing from informal sources alone. The upper bound is defined as the sum of household debt for those households borrowing from two sources of which one source is informal. We find that informal loans account for 15-30 percent of household debt. Low income households are more reliant on informal loans.

Figure 2

**International comparison: household debt to GDP**




Note: data from 2003, * denotes data from Q2 2003 Thai data from NSO SES 2004 and BOT 2004.

Source: NSO, CEI C, HSBC.

The SES reports aggregate household debt to be approximately 33 percent of GDP in 2004 whereas the household debt figure from financial institutions comprises 63 percent of GDP in 2004. The two figures can be reconciled to arrive at a third and more accurate measure of total household debt. We bear in mind that each source has its own particular advantage: the survey data contains information on informal loans; formal sector data, as opposed to survey data, has less risk of under-reporting and therefore is a better measure of household debt from formal sources.

[1] The Socioeconomic Survey for 2006 will ask households to report household debt amounts from informal sources.

It is not surprising that the two measures differ significantly. Households tend to under-report. In addition, the distribution of household debt is highly skewed with rich households accounting for a major share of debt. Rich households are also likely to be under-sampled in survey data. As a result, the formal sector statistic exceeds the survey statistic. We take the view that true level of household should be around 73 percent of GDP given that formal sector debt accounts for already 63 percent with an additional portion arising from informal sources. An additional 10 percent for informal loans is added, given that informal loans are concentrated in low-income households.

## 4. Measurement of household financial assets

We utilize data from financial institutions, such as commercial banks, special financial institutions[2], finance firms, cooperatives, the village fund[3] and the Bank of Thailand, and the stock market in order to measure aggregate household financial assets. Financial institutions are required by law to report the state of their balance sheets. Aggregate financial assets comprised 130 percent of GDP in 2005 and significantly exceeds overall household debt. Most of household financial assets are in the form of commercial bank deposits. This is to be expected given the Thai economy's reliance on the banking sector. However, household assets in the form of stocks have been expanding in line with of capital market development. In comparison, household holdings of treasury and corporate bonds remain low. Provident fund holdings are also negligible.

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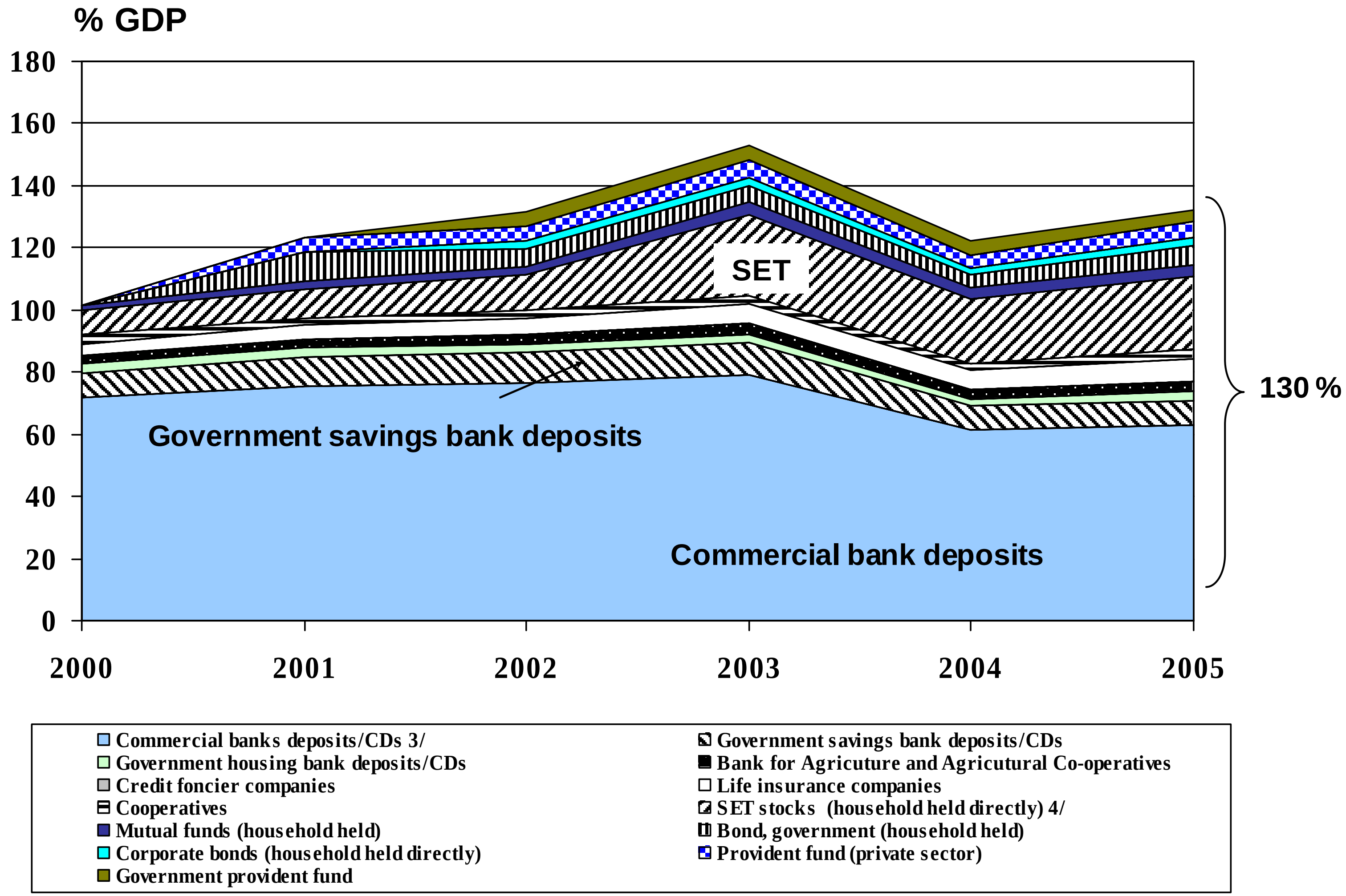
[2] Government financial institutions, such as the Government Housing Bank, the Government Savings Bank and the Bank for Agricultural and Agricultural Cooperatives, with social objectives such as poverty alleviation and housing affordability.

[3] A government microfinance program.

Figure 3

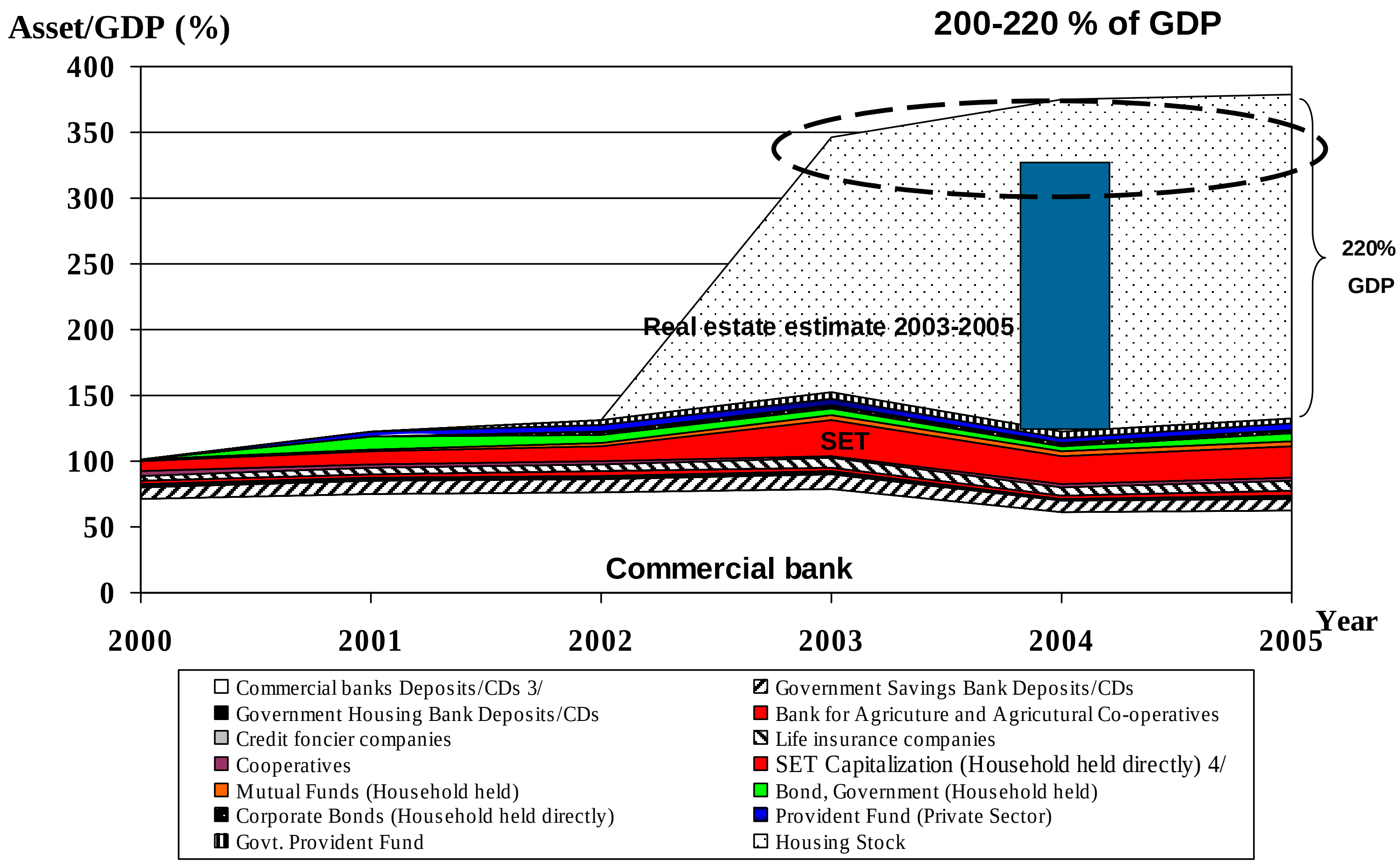
**Household financial assets**




Source: Bank of Thailand, Ministry of Finance, Bond Exchange, Stock Exchange of Thailand.

Figure 4

**Financial and housing assets of Thai households**




Note: Real estate assets are estimated.

Source: BOT, BEX, MOF.

## 5. Measurement of household real estate assets

We estimate household real estate assets using two approaches. The first approach entails using housing prices obtained from mortgage appraisals by commercial bank and specialized financial institutions. The prices are multiplied by the number of dwellings as reported by the National Statistical Office's Census. We find that real estate assets comprise 260 percent of GDP. However, this measure may have an upward bias as many poor households do not have access to mortgage loans. As a result, we use a second measure that is not vulnerable to this bias. We obtain imputed rent from the SES. Modelling housing assets as perpetual assets, we find that housing assets account for 180 percent. This figure, however, may be downwardly biased as rich households are under sampled. However, using both biased measures together allows us to mitigate the problem of bias by pitting one bias against the other. The two figures can serve as lower and upper bounds on the true value housing assets in Thailand. We find that Thailand's real estate assets should be in the range of 200-220 percent of GDP.

## 6. Conclusion

The question of whether Thailand's household debt is excessive remains. Combining all our measures of household debt and assets, we find that Thailand's household debt-to-asset ratio is in the neighborhood of 8 percent to 16 percent, which is not excessive by international standards. We emphasize that our measure of assets include only financial and real estate assets. Although not complete, our measure should capture most of household assets. Adding other household assets such as automobiles, motorcycles and home business equipment should lower the debt-to-asset ratio even more.

An international comparison of Thailand debt-to-asset ratio shows that Thailand's household debt ratio is comparable to other OECD economies. Measures of household debt-to-asset ratios among developing countries are not available. We caution that comparing ratios across a wide range of countries is not enough to discern whether a country's household balance sheet is in a precarious position. Different economies have varying degrees of financial access, financial literacy, and experience different types of shocks. International comparisons can therefore only provide a rough sense of whether the household sector position is fragile. It is also worth noting that debt and assets are intertwined. Households with financial access accumulate assets through borrowing. It would therefore be natural to see a rise in household debt preceding a rise in household assets. As Thailand is an emerging economy undergoing financial liberalization, its household sector position would probably see an increase in debt relative to assets for some time.

Figure 5

**Thailand's estimated ratio of household debt to household asset**

$$\frac{Debt_{household}}{Financial\ Asset_{household} + \text{Real}\ Estate_{household}} \cong [8.5 - 17]$$