A Synopsis of Thailand’s Flow of Funds

Flow of funds can reveal interesting information on economic situations both for research and policy implementation. Unfortunately, there has not been a wide adoption of flow of funds data for economic analysis nowadays, partly because the concept of flow of funds accounts (FFA), which conveniently compile and organize flow of funds data in one place, and their applications are not well known. This document provides an example of data applications from FFAs for basic analysis of financial and macroeconomic situations for a given country. More details about the framework of FFAs can be found in a CFSP Concept Note by Marco Cagetti, “Creating Flow of Funds Accounts”.

Herein, we use Thailand as a case study for several compelling reasons. First, Thailand experienced a recent financial crisis in 1997, which caused several important changes in the economy and financial markets, including switching from a fixed to flexible exchange-rate regime and developing improved money and stock exchange markets. Second, Thailand has experienced a few booms and busts since the financial crisis. Third, Thailand is now an emerging economy and has been expanding international trade and financial integration in the last decade in preparation for the official launch of the ASEAN Economic Community (AEC) in 2015. All of these factors result in important impacts on flow of funds that we can observe from Thailand’s FFAs. Finally, Thailand is used as a case study because of data availability. Thailand’s FFAs have been developed and published annually for many years, covering the time of the financial crisis as well as the pre-crisis, recovery, and growth periods. There are five main sectors: General Government (GG), Financial Corporations (FC), Non-financial Corporations (NFC), Households and Non-profit Institutions Serving Households (HH & NPISH), and the rest of the world (RoW). NFC data are also disaggregated as state enterprises (BSE) and privately incorporated (BINC) for some series in some years. The primary data used in this document are from the FFAs published by Thailand’s National Economic and Social Development Board (NESDB), with some supplemental data from other sources.

Overview of Thailand’s Financial Market

We begin by looking at the overall picture of Thailand’s flow of funds. Figure 1 summarizes total financial surplus, which is financial asset acquisition net of liability incurrence or financial uses minus financial sources, for each sector. A sector with a positive surplus can be thought of as a lender providing funds to deficit sectors with negative surpluses, which are fund borrowers. We can see from the figure that the household sector was the only main lender for the whole period of our study, including during the tough time of financial crisis. Interestingly, the patterns of flow of funds of the private business sector (BINC) and intermediaries (FC) were largely affected by the financial crisis. The figure shows that funds flowed out of BINC and to FC during the financial crisis. Similarly, the government and the rest of the world ran surpluses before the crisis and switched to deficit flows during the crisis years. For the most recent years, the figure shows that
Thailand has been accumulating foreign financial assets, as deficits of the rest of the world mean that funds are flowing from the rest of the world to domestic sectors.

**Figure 1:** Thailand’s flow of funds by sectors between 1993 and 2010. The vertical axis is in unit of million Thai Baht.

The bottom graphs of Figure 1 also reveal tough financial market conditions during the financial crisis. We can see that FC’s uses and sources of funds dropped significantly and became negative during the financial crisis, revealing the difficult liquidity circumstance faced by FC, as it had to dramatically liquidate stock of financial assets and could not lend normally inasmuch as available funds in the financial market shrank. The facts that sources of funds of BINC and the household sectors became negative also denote credit crunch during the crisis, as these private sectors were unable to get loans from financial institutions but required to pay back their liabilities carried over from previous years. Figure 2 below shows uses and sources of funds of each sector through loan instruments, and Figure 3 illustrates flow of funds between the financial corporation sector and the other sectors from 1995 to 2001.
**Figure 2:** Flow of funds of each sector through loans. The vertical axis is in unit of million Thai Baht.

![Graph showing flow of funds through loans](image)

**Figure 3:** Flow of funds between FC and the other sectors from 1995 to 2001. Each axis shows FC’s surplus against the sector on that axis in the unit of million Thai Baht. FC’s surplus increases when moving away from the center, and the middle point of each axis (the point on each corner of the light red diamond) is zero. Therefore, points outside the light red diamonds indicate flow of funds from FC to the corresponding sector on the axis, and points inside the red diamonds mean funds flowing to FC.

![Graph showing flow of funds between sectors](image)

We see clearly from Figure 3 that there was a significant shift of funds intermediated in Thailand’s financial market in response to the financial crisis. FC provided funds to non-financial corporations (NFC) in 1995-1997, but the reverse direction of flow can be observed at the trough of the crisis in 1998 and continues several years after. In addition, the figure reveals that FC instead intermediated funds toward the government sector and the rest of the world after the outbreak of the crisis, during which the household sector was still a net supplier of funds to FC. In
fact, HH & NPISH’s surplus against FC as well as total surplus notably increased in 1998 as immediate response to the crisis. This may be because Thai households wanted to increase their precautionary savings for their internal insurance against shocks when the country’s financial market could not function properly. Thailand’s financial market started to recover in 2001, which is evident in Figure 1: funds began to flow to FC, and the sector could intermediate funds to other sectors.

Next, we further examine roles of FC as financial intermediaries from flow of funds data. Each line in Figure 4 presents each sector’s sources of funds from FC as percentage of that sector’s total liability incurrence. A high percentage for a given sector implies that the sector is more dependent on the financial sector, highlighting that FC plays an important role on intermediating funds in financial market.

**Figure 4:** Sectors’ sources of funds from FC as percentages of their total liability incurrence. The vertical axis is in percentages.

Before 1997, we see from Figure 4 that FC had high shares in sources of funds of the private sector. During the crisis years, as explained above, BINC and HH & NPISH had problems expanding credit, while they still needed to pay back loans to financial institutions. Consequently, the denominators of the shares of sources of funds of household and NFC, which were composed mainly of BINC, are negative, and we have to omit these data points. Not surprisingly, we observe the less important role of FC for the private sector and the increasing role for the government after the crisis. NFC even turned to sources of funds from other sectors to pay back some parts of outstanding loans from FC in 2007 and 2009, as we can see from negative percentages in these two years. This may be because of a better-developed stock exchange market in Thailand that allowed NFC to raise funds directly from the market. In contrast, the shares of FC in GG’s sources of funds became higher than 100 percent from 2004 on, implying that the Thai government refinanced their outstanding liabilities by obtaining funds from FC to pay lenders from other sectors.
Household Sector

Previously, we saw that the financial surplus of HH & NPISH increased significantly during the crisis years, and a lot of funds flowed from this sector to FC. Now, Figure 5 also shows that households’ gross saving, which is equal to the sum of expenditures on physical or real capital formation and total financial surplus, to GDP ratio increased dramatically between 1998 and 2000. This fact enhances our conjecture that Thai households increased precautionary saving in response to the credit crunch experienced in the middle of the financial crisis.

**Figure 5:** HH & NPISH’s gross saving as percentages of GDP

Next, we examine further how the household sector saved. In Figure 6, we distinguish expenditures on real capital formation as gross capital formation and net purchase of land. The three series in Figure 6 sum to the sector’s gross saving plus liability incurrence, or a sector’s income plus borrowing net of consumption. This tells us how the sector stores its available funds...
left from consumption. We see clearly from the figure that households stored their funds in financial rather than real or physical assets. In fact, we see that the sector’s net purchase of land was negative in almost all the years, except for 2011. This means that households actually relinquished their land holding to other sectors, implying that land was not a preferred instrument in wealth accumulation of this sector during this period. We now look deeper to the sector’s financial flow of funds by instruments, summarized by the following figures.

**Figure 7:** HH & NPISH’s financial uses of funds by instruments. The top graph is in unit of million Thai Baht, and the bottom graph is in percentage of the total uses of funds of the sector.
Figure 7 shows that proportion of currency and deposits in households’ financial acquisition were generally lower in the post-crisis periods. In addition, we see that the sector acquired more shares and equities during the recovery years from 2000 to 2005. These phenomena could be a result of improvement in the stock exchange and other non-bank markets. It is also possible that households saw the opportunity to expand and diversify their portfolios of financial assets in light of an improving financial market environment. Figure 7 also shows that HH & NPISH liquidated non-share securities in 1997, 1999, and 2011. However, 2011 seemed to be different from the situations in 1997 and 1999. Figure 8 reveals that HH & NPISH acquired a combination of currency, deposits, and securities other than shares in declining proportions, implying a shift of the sector’s preference toward more risky assets. In contrast, it is unlikely that Thai households were less risk-averse in 1997 and 1999 at the trough of the financial crisis, as the Figure 7 indicates this sector’s high demand for currency and deposits in these two years. It is certainly an interesting topic for researchers and policymakers why households have recently moved toward risky assets, but it is beyond the scope of this document. Last but not least, Figures 7 and 8 also show high flow of funds through account receivables, but it is not trivial whether the receivables comprised mainly of unidentifiable residual instruments due to insufficient data availability or other meaningful instruments such as trade credits. If a majority of the receivables were actually riskless, our previous claim about the shift of households’ preference toward risk could also be incorrect.

On the liability side, the sole instrument for HH & NPISH’s financial sources of funds is undoubtedly loans or debt. Hence, there is no need to compare financial instruments for sources of the funds. However, it is still important to examine the overall trend of liability incurrence of this sector, as highly indebted households in aggregate can lead to concerns about lowering purchasing power, and thus falling aggregate demand, which in turn contributes to economic slowdown. More importantly, financial market could be in jeopardy if high debt is associated with increasing non-performing loans, as household debts are generally regarded as non-productive.
Earlier, we saw in Figure 2 that households’ sources of funds through loans have continuously and dramatically increased in recent periods. Now, Figure 9 above shows that the sector’s leverage ratios sharply increased for several years in a row and were highest in the most recent year of the data. At first glance, these pictures look concerning. However, a more careful look at all of the relevant graphs suggests otherwise. In Figure 1 we saw that households actually ran a surplus in all years, including the most recent years. This implies that the incurred liabilities in each year, at least in aggregate, were not used predominantly to finance their consumption or real investment. Therefore, there is only a minimal issue at most in regards to households’ purchasing power and inability to pay back debts. Nonetheless, the economy could potentially be at risk if the inclined liabilities of households were poorly used to invest in risky financial assets like share and equities, as we saw earlier in the uses of funds comparison by instruments. It is, therefore, important for Thai policymakers to carefully investigate all of the factors contributing to observed flow of funds in recent periods.