

# ECONOMIC IMPACT OF HIGH HOUSEHOLD DEBT IN THAILAND

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## 1. INTRODUCTION

Concern over household debt in Thailand has been mounting significantly after its level reached 80 percent of GDP at the beginning of 2015. Such a high level of household debt could harm the Thai economy in several ways. Both consumption and debt-default are the main channels through which risk from high household debt can be transmitted to the economy.

With regard to the consumption channel, high household debt implies that households have to pay heavy principal and interest payments every month. Hence, the spending of such households becomes more constrained, which leads to a decrease in household consumption. In particular, consumption of non-durable goods is adversely affected by a higher household debt burden.<sup>1</sup>

Another means through which high household debt can pose risks for the economy and the financial market is the debt-default channel. Households with a high debt level are more vulnerable to both in-

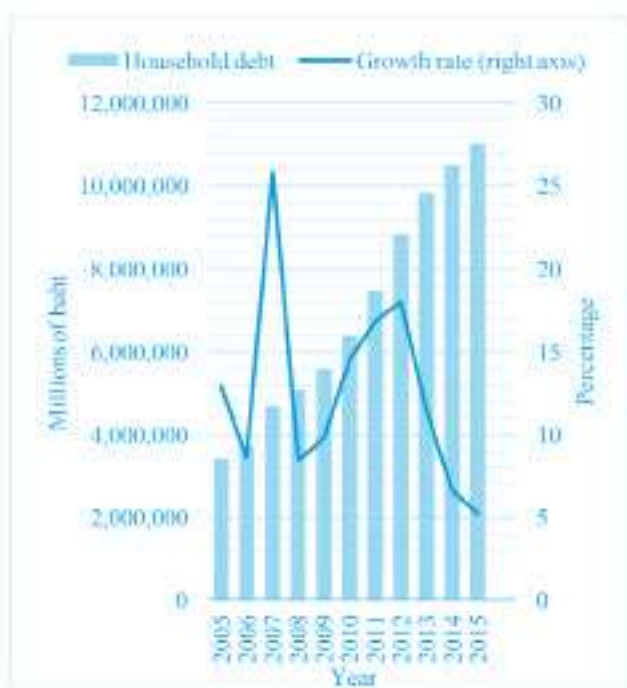
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<sup>1</sup> Muthitacharoen, Athiphat, Phacharaphot Nuntramas and Pasit Chotewattanakul. 2014. *Rising household debt: implications for economic stability*. Bank of Thailand Symposium 2014.

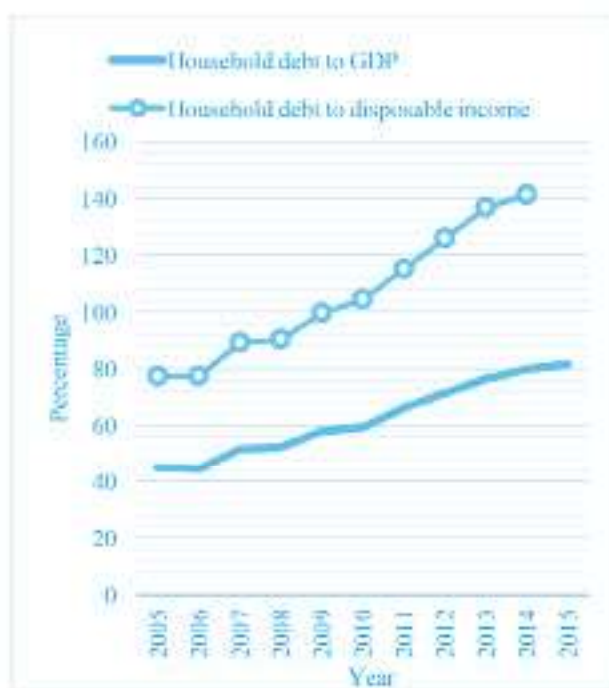


Figure 1: Amount of Thailand's household debt



Source: Bank of Thailand data.

Figure 2: Household debt to GDP and disposable income



Source: Bank of Thailand and Office of the National Economic and Social Development Board's data and authors' calculation.

come and interest rate shocks.<sup>2</sup> If household income happens to decrease dramatically, the households concerned may find themselves unable to repay their debts. In addition, a slight increase in interest rates may significantly increase the total amount of the debt payment for each period. In a situation where many households are highly indebted, debt default might be so pervasive that it could trigger financial tumult.

For this paper, the authors studied the effect of household debt on the consumption of various products and the implications for the Thai economy. Following the introduction, the household debt situation in Thailand is explained in the second section. In the third part, the impact of household debt burdens on each type of household consumption is studied based on a model used by Muthitacharoen, Nuntramas and Chotewattanakul.<sup>3</sup>

<sup>2</sup> Schembri, Lawrence. 2016. *Connecting the Dots: Elevated Household Debt and the Risk to Financial Stability*. Speech at Guelph Chamber of Commerce, February 24.

<sup>3</sup> Muthitacharoen, Nuntramas and Chotewattanakul, *op. cit.*

The fourth section contains an assessment of the impacts of household debt on financial stability, and the conclusion of the study is presented in the last section.

## 2. OVERVIEW OF HOUSEHOLD DEBT SITUATION IN THAILAND

Thai household debt has grown rapidly from about 3.5 trillion baht in 2005 to 11 trillion baht in 2015 (Figure 1). During the same period, the ratio of household debt to GDP, which is one of the indicators of financial soundness used by the International Monetary Fund (IMF), surged from 45 percent to more than 80 percent; in addition, the ratio of household debt to disposable income also rose dramatically, from 77 to 141 percent (Figure 2), which indicates that the growth of loans continually exceeded that of income.

Improved financial access in Thailand, the low borrowing-interest-rate environment, the government's stimulus programs and such events as extensive flooding in 2011 played a major role in the country's debt accumulation situation. Automotive



loans and personal loans accelerated at a much faster rate than that of other types of loans during the period 2011-2012 (see Figure 3), because people were spending money to repair the damage caused by the devastating floods at that time, and many people bought cars in response to the government’s “first-car” tax subsidy scheme.

Even though auto loans and personal loans gained share in household debt during the past five years, mortgage loans still constitute the largest proportion of household debt. Their share in household debt in the Thai commercial banking system hovers around 40-50 percent; next in importance are automotive loans at 25 percent and personal loans at 20 percent of the total. The remainder of loans have been used for private business. The share of mortgages in the entire financial system is lower (about 35-40 percent) as non-banks in Thailand mainly provide funding for automotive leasing, hire purchase and personal loans.

The persistently increasing trend in debt creates financial constraints on households in all eco-

nomical classes,<sup>4</sup> according to the household survey undertaken by the National Statistical Office (NSO). The debt-service ratio (DSR), which measures the share of income that is used for repayment of loan principal and payment of interest, is a widely used metric for determining the difficulty of repayment. DSR is measured as follows:

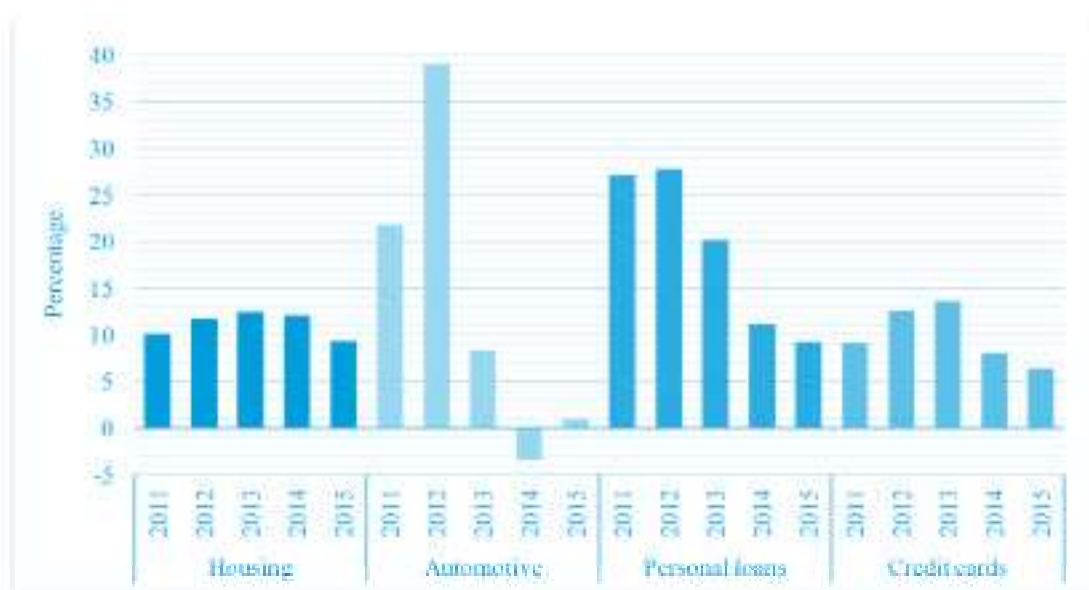
$$DSR = \frac{\text{Principal payment} + \text{debt payment}}{\text{Income}}$$

If DSR is high, the spending of the households may be constrained due to the fact that they have to expend a large portion of their income to pay their debts. Empirical evidence suggests that, if a household’s DSR reaches 40 percent, that

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<sup>4</sup> In this study, households are divided into five groups equally according to their expenditure per capita. The first economic quintile refers to the 20 percent of households with the lowest level of annual consumption, and the fifth economic quintile refers to households with the highest level of spending on consumption annually.

Figure 3: Year-on-year growth of household debt in commercial banks' portfolio



Source: Bank of Thailand data.

household will have difficulty in paying its debts.<sup>5</sup> Commercial banks also set the critical rate of DSR at 40 percent. Credit approval for households with a DSR exceeding that threshold would be unlikely.

As of 2015, average DSR of each economic quintile stood at around 12-16 percent, which was well below the 40-percent threshold. This number indicates that Thai households in general still have the ability to cope with the repayment burden, and that debt accumulation in the past should be inconsequential. However, the average DSR presented above might be misleading because households without any debt would also be included. DSR is therefore inclined to understate the actual risk of household debt.

Distribution of DSR in each economic quintile as shown in Figure 4 illustrates that about half of Thai households are in debt to varying degrees. Moreover, vulnerable households with DSR exceeding 40 percent constitute about a tenth of the total number of households. Although the share of indebted households exhibits a decreasing trend over time across all groups, the total level of debt is still

on the rise. This means that households which are already indebted accumulated more debt recently, and thus, they need to be closely monitored.

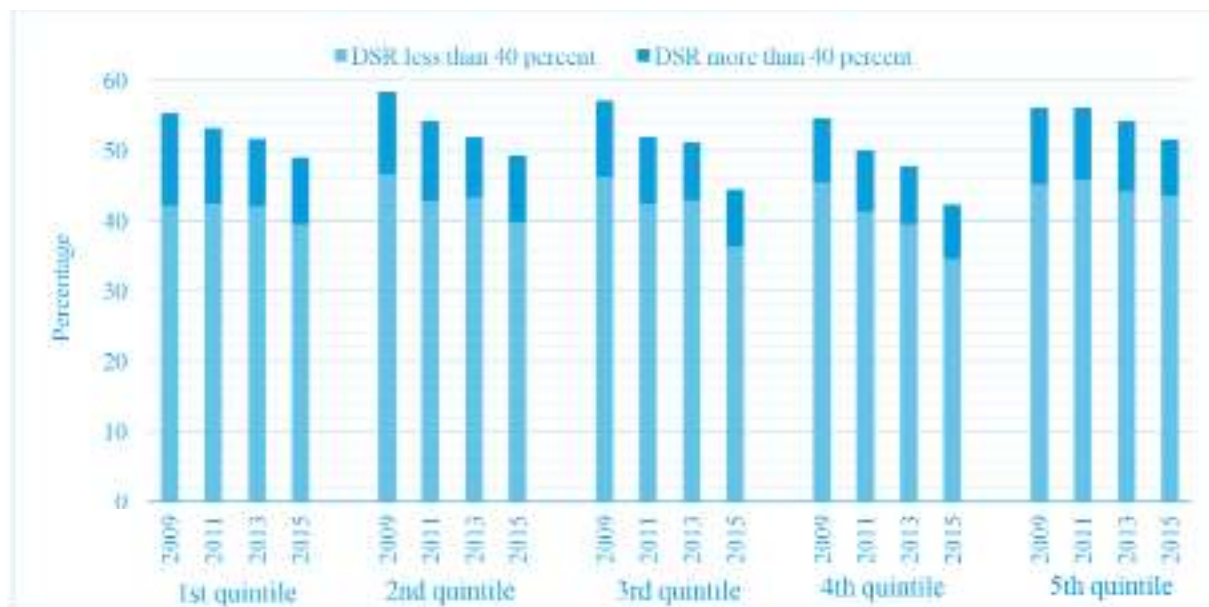
In terms of geographical distribution, about half of the vulnerable group is concentrated in the northeastern region of Thailand, followed by the northern and central regions. Not only do their DSRs exceed the threshold of 40 percent, but they also have a smaller “cushion” as they own less liquid assets and have an uncertain income stream.<sup>6</sup> If a negative shock were to happen, they would be among the first to show signs of financial distress, which could spark a debt-default chain reaction in the extreme case.

Debt creation in the future may not be as rapid as had been the case previously due to several factors. First, many households are approaching their debt limit. Because financial institutions widely use the 40-percent DSR threshold as one of the factors in loan approval, households with a DSR approaching or exceeding this rate may find it difficult to acquire further loans.

<sup>5</sup> Muthitacharoen, Nuntramas and Chotewattanakul, *op. cit.*

<sup>6</sup> *Ibid.*

Figure 4: Distribution of debt-service ratio (DSR), by expenditure quintile



Source: National Statistical Office's Socio-economic Survey, with authors' calculations.

Second, negative income prospects worry financial institutions concerned about the possibility of default. In response, credit conditions are tightened for the approval of new loans. As the domestic economy is sluggish and international trade is projected to be poor for a prolonged period, credit conditions tend to remain strict unless the situation improves. Data from the Senior Loan Officer Survey, which quarterly surveyed commercial banks, credit cards and personal loan companies under the supervision of the Bank of Thailand, showed that financial institutions have been more cautious about loan approvals over the past three years, and will continue using the strict standard into the foreseeable future.

Finally, as the prices of commodities remain low and inflation is weak, there is naturally less demand for loans both for consumption and for operating self-employed businesses. As for the future, IMF has projected that credit expansion might grow roughly at the same rate as nominal GDP growth.<sup>7</sup>

### 3. EFFECT OF HOUSEHOLD DEBT ON CONSUMPTION

Although new debt creation may not increase rapidly, high levels of debt overhang may adversely affect households' purchasing power after its stimulus impacts wear off. A considerable amount of debt does not generate higher income or more assets for borrowers. This is the case when people borrow money to purchase consumption goods instead of investing in valuable assets. They end up therefore with a higher debt repayment burden but not higher debt serviceability.

Moreover, not all assets increase the wealth of borrowers; for instance, the value of such underlying assets as automobiles depreciates quickly. Unlike real estate, the value of which usually increases over time, automobiles do not have the same impact on the net worth of buyers as do houses and land. Consequently, acquiring these kinds of assets using a financial lease or hire purchase arrangement does not necessarily raise the buyer's purchasing power via the wealth channel.

Higher debt burdens are also exacerbated by income volatility. Because more than 30 percent of

<sup>7</sup> International Monetary Fund. 2016. IMF Country Report No. 16/139.

the Thai labor force is in the agricultural sector,<sup>8</sup> the income of many households hinges on the movement of agricultural prices, which is especially important currently as agricultural prices tend to be subdued at a time when the global economy is not exhibiting a strong recovery following the so-called Great Recession which started in 2008. If they postpone repayment of debt until their income becomes adequate, the amount of debt will rise further in the form of higher interest. Since these households have to repay both principal and interest to creditors, their purchasing power becomes even more constrained. Under this gloomy circumstance, the consumption of these households is unlikely to be unaffected.

The effect of household debt on consumption through an increase in DSR is explored in this section. The empirical model follows that of Muthitacharoen, Nuntramas, and Chotewattanakul using data from the Socio-economic Survey (SES) conducted by the National Statistical Office from 2009 to 2013. The model used in this study is as follows:

$$\Delta \log C_{t,a} = \beta_{0,a} + \beta_1 \Delta DSR_{t-1} + \beta_{2,a} \Delta \log Y_t + \beta_3 \text{Central} + \beta_4 \text{North} + \beta_5 \text{Northeast} + \beta_6 \text{South}$$

where “*t*” means the period of time, and “*a*” denotes each type of goods.  $\Delta \log C_{t,a}$  is the change in the logarithmic value of expenditures on product *a* from time *t*-1 to time *t*.  $\Delta DSR_{t-1}$  is the change in DSR from time *t*-2 to *t*-1.  $\Delta \log Y_t$  is the change in the logarithmic value of income from time *t*-1 to time *t*. The variables Central, North, Northeast and South are dummy variables to control regions compared to Bangkok. Each  $\beta$  refers to the coefficient of each variable from the regression analysis.

In this study, the model is used to evaluate the effect of increased DSR in the past on the change in current expenditures for each product. Data from the 2011 and 2013 SES are used to construct the change

in current expenditures and incomes; the 2009 and 2011 SES are used to construct the change in the DSR in the past period. In other words, this model evaluates how the change in DSR in the last two years affects each type of household consumption item. In addition to total expenditures, the types of items of consumption studied in this model are:

- Food
- Personal care items
- Clothes and shoes
- Health care
- Transportation
- Communication
- Furniture and household appliances
- Electrical appliances
- Household utilities
- Automobiles
- Motorcycles
- Travel

The pseudo-panel data have been constructed by summing households into district level. A regression method corrects for heteroskedasticity using a robust standard error.

The outcome of the model is shown in Table 1. The average effect of the increase in DSR to total expenditure is about 0.35 percent. In other words, when DSR increases by 1 percent the total spending of a household will decrease by 0.35 percent. Five expenditure types are, relatively, more sensitive to an increase in DSR, i.e. expenditures that exhibit a statistically significant decrease of more than 0.35. Other types of expenditure that are more resilient to an increase in DSR comprise food, health care, clothes and shoes, furniture and household appliances, electrical appliances, and motorcycles.

Expenditures impervious to an increase in DSR are necessary goods and services, such as food and health care, for which households cannot curb their expenditures. Other expenditures might be, to various degrees, essential for daily life from the consumers’ aspect. For instance, personal care items and clothes and shoes are affected less than average. This might be because there is modest room to

<sup>8</sup> Data are from the Thai Labor Force Survey, 2015.

**Table 1: Effect of 1 percent increase in debt service ratio (DSR) on consumption**

	Effect of 1 percent increase in DSR		Effect of 1 percent increase in DSR
<b>Total expenditure***</b>	- 0.3550		
Food	- 0.1624	Furniture and household appliances	0.1868
<b>Personal care items***</b>	- 0.3124	Electrical appliances	0.1848
Clothes and shoes	- 0.3337	Housing utilities***	- 0.3591
Health care	- 0.4038	Motorcycles	- 0.3221
Transportation***	- 0.4175	Automobiles***	- 1.2130
<b>Communication***</b>	- 0.4117	Travel*	- 0.6666

*Note: The effects are given as percentage increase/decrease in spending on each consumption type.*

*\*, \*\* and \*\*\* denote statistical significance at 90, 95 and 99 percent, respectively.*

*Source: Socio-economic Survey, with authors' calculations.*

decrease the amount consumed and a wide range of less expensive substitutes of lower quality or a less desirable brand. Households may also consider switching from purchasing an automobile to buying a motorcycle as that would be cheaper and suitable to their tighter financial conditions.

On the other hand, communication, transportation, travel and automobiles are relatively more sensitive to changes in DSR, which reveals that households decrease their spending on these kinds of goods when they have a high debt burden. For instance, households may take transport less frequently and to nearer places as well as carry out more transactions per trip. They may also cut their vacation budget when their DSR is on the rise.

The model shows that an increase in DSR leads to a very sharp drop in automobile purchases when the coefficient exceeds 1 percent, implying that households with high debt burdens may not be able to afford to buy a new car. This result is rather intuitive as purchasing a new car would significantly increase a household's debt burden over the medium term. Moreover, households that recently purchased a car may not buy new ones within a two-year period.

To summarize this section, the result supports the view that high debt burdens affect the purchasing power of households as they decrease overall consumption. Increases in households' DSR affect each type of expenditure differently. Necessary expenditures, such as on food and health care, tend to be less affected by increases in DSR, while households tend to save money by cutting expenditures on less necessary items, such as on travel and cars.

#### **4. IMPACTS ON FINANCIAL STABILITY**

Thailand experienced a severe financial crisis in 1997. One of the major causes of that crisis was a surge in capital inflows to finance investment in real estate as well as other sectors, massive external debt accumulation and the subsequent inability to repay international debts following the collapse of the Baht starting in July that year.<sup>9</sup> As has been seen in the previous section, current debt burdens

<sup>9</sup> For additional information, see Santiprabhob, Veerathai. 2003. *Lessons Learned from Thailand's Experience with Financial-Sector Restructuring*. Thailand Development Research Institute.



**Table 2: Credit quality, by type of loan**

Loan type	Delinquency	Percentage of credit outstanding		
		2013	2014	2015
Housing	Special mention loans	1.8	2.1	2.2
	Non-performing loans	6.0	5.1	3.4
Auto lease/ hire purchase	Special mention loans	6.3	6.8	6.6
	Non-performing loans	4.4	5.5	6.1
Credit card	Special mention loans	1.8	1.9	1.8
	Non-performing loans	25.7	14.7	12.7
Personal loans	Special mention loans	1.8	2.8	5.0
	Non-performing loans	7.7	6.9	7.0
Commercial loans (self-employment)	Special mention loans	2.3	3.5	3.2
	Non-performing loans	9.8	7.3	7.5
Total household debt	Special mention loans	3.2	3.6	4.1
	Non-performing loans	7.2	6.2	5.7

Source: National Credit Bureau data.

limit purchasing power and consumption in various categories; there are growing concerns that rising household debt might end up triggering a vicious cycle of debt default and pave the way for a new financial crisis.

According to National Credit Bureau data, some loan types face relatively higher default risk than others. Issuers of credit cards experience the highest risk, as non-performing loans<sup>10</sup> (NPLs) stand at almost 13 percent of total debt, although that figure has come down from the high of 26 percent in 2013 (Table 2). For personal loans, NPLs are 7 percent of the portfolio, with special mention loans<sup>11</sup> (SMs) having increased markedly from a mere 1.8 percent in 2013 to 5 percent in 2015, a situation which indicates that the credit quality of loans with less or no-collateral assets deteriorate rapidly.

Although some loan types are at higher risk of default, the risk that a financial crisis might soon occur through the debt-default channel is still

containable, according to statistics. NPLs as a proportion of overall household debt in Thailand's entire financial system have improved gradually, from 7.2 percent of total credit outstanding in 2013 to 5.7 percent in 2015. Moreover, SMs were still at the manageable level of 4 percent in 2015. NPLs net of provisions-to-capital ratio of commercial banks stood at 8 percent at the end of 2015, which indicates that banks still have ample capital to withstand debt defaults.

One explanation of low systemic risk of debt default is that financial institutions under the supervision of the Bank of Thailand must comply with regulations to ensure financial soundness. BASEL III, which was adopted by the Bank of Thailand, is aimed at reducing systemic risk by strengthening each financial institution's capability to tolerate an economic downturn. This includes provision for loss due to delinquencies, minimum tier-I and tier-II capital reserves, and regular publication of financial statements for all commercial banks and depository specialized financial institutions. If the credit quality of such institutions begins to deteriorate, they would have to bear higher costs for capital. Therefore, lending standards are adjusted to be stricter to better

<sup>10</sup> Non-performing loans (NPLs) are loans with delinquency exceeding 90 days.

<sup>11</sup> Special-mentioned (SMs) loans are loans with delinquency over 31 days but not exceeding 90 days.



reflect their risk management costs.

Although credit quality currently is not in bad shape, the high level of debt overhang exposes Thailand to the risk of economic recession. Our empirical evidence suggests that high level of debt relative to income results in a reduction of overall consumption. One research asserts that an increase in the household-debt-to-GDP ratio leads to lower GDP growth.<sup>12</sup> Another research indicates that a household-debt-to-GDP ratio exceeding 85 percent may lead to economic contraction.<sup>13</sup>

Therefore, deleveraging is required for Thailand to mitigate the risk of a recession. One measure that can be taken is to curb the granting of new loans by imposing stricter conditions and lowering the approval ratio. Senior Loan Officer Survey data indicate that financial institutions have tightened credit standards continually since 2013. This trend in stricter lending approval correlates with the loan quality that financial institutions have experienced.

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<sup>12</sup> Mian, Atif, Amir Sufi and Emil Verner. 2015. *Household Debt and Business Cycles Worldwide*. National Bureau of Economic Research.

<sup>13</sup> Cecchetti, Stephen, Madhusudan Mohanty and Fabrizio Zampolli. 2011. *The Real Effects of Debt*. BIS Working Papers No. 352.

In looking forward, financial institutions will likely tighten their lending conditions further as their concerns have not eased. Although preliminary data for household debt outstanding as of the first quarter of 2016 increased by about 0.35 percent from the end of last year, the household debt-to-GDP ratio fell slightly, from 81.6 percent to 81.1 percent during the same period.

A theoretical simulation by Eggertson and Krugman,<sup>14</sup> however, showed that deleveraging may precipitate an economic crisis if not done properly. If highly indebted households were to be deleveraged swiftly and sharply, the spending of debtors would drop significantly, and this would harm overall consumption in the economy. Such a situation would then be followed by deflation, which would aggravate the already-severe repayment burden of households in the real term. Consequently, the economy would suffer from less spending, which in turn would reduce overall income and debt serviceability in other sectors.

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<sup>14</sup> Eggertson, Gauti and Paul Krugman. 2012. "Debt, Deleveraging, and the Liquidity Trap: a Fisher-Minsky-Koo Approach." *The Quarterly Journal of Economics*, 1469-1513.



Eggertson and Krugman argued against the proposition that a high debt situation could not be corrected by generating more debt, because only a portion of the population is highly indebted. Therefore, other agents still in good financial condition may spend enough money to offset the reduction in consumption by those with a high level of debt. Eggertson and Krugman are for the proposition that the governmental sector should increase public spending during a period of deleveraging in order to counter a drop in private consumption while households pay off their debts. As a result, an economic crisis may be avoided, while those households with excess debts gradually improve their financial position.

Therefore, if the Thai economy undergoes a period of deleveraging, steady economic growth as well as stable and modest inflation are required in order to alleviate the ensuing economic crisis. While indebted households are not able to increase consumption during such periods, the other portion of households currently without debt or with low debt might be the key to stabilize domestic consumption. However, this scenario is unlikely to happen on its own as such households are more patient and tend to save rather than to spend.

Unless an unnaturally low interest scheme aimed at boosting consumption is acceptable, government spending would be needed to fill the spending gap. However, caution must be exercised while allocating public spending in order to ensure those expenses are translated into something beneficial to the economy in the medium to long term. IMF also encourages expansionary fiscal budgets granted for investment in infrastructure and social safety nets in order to better prepare Thailand for structural challenges, such as an aging society.

## 5. CONCLUSION

Thailand's household debt situation has been explored in many aspects in this article. The growth in household debt has been rapid and has exceeded the growth of income. Automotive loans and

personal loans are the type of loans that accelerated the most compared with other types of loans. Even if the average DSR is low across every economic class, that is, not exceeding the critical rate of 40 percent, about half of Thai households are in debt, and the number of households with DSR exceeding 40 percent are persistent at about 10 percent in every quintile.

Empirical evidence has revealed that increases in the debt burden, as reflected by DSR, affect each type of expenditure differently. Households with a high debt burden tend to cut or decrease the amount of unnecessary expenditures, such as for cars and transportation and communication expenses, before decreasing important expenditures, on such essential items as food and healthcare spending.

Debt quality is still quite solid due to strong prudential regulations. Nevertheless, Thailand may be at risk of a recession as many empirical studies point out that high household debt tends to have adverse impacts on economic growth. Deleveraging to mitigate economic risk should be done very carefully because deleveraging too rapidly could plunge the country into crisis as well. In practice, sectors with the ability to pay, such as the public sector, should play a key role in stabilizing domestic spending through fruitful investment while highly indebted households strengthen their financial position.