Household Indebtedness Determinants in ASEAN Developing Countries

[1]Catherine S F Ho, [2]Siti Amanah Mainal
[1, 2]Arshad Ayub Graduate Business School,
Faculty of Business Management, Universiti Teknologi MARA, Shah Alam, Selangor.

ABSTRACT

Household indebtedness problem is known to have caused economic slowdown and even financial crisis resulting in global financial instability. High level of household debt not only results in social and family predicaments but also emotional and psychological stress. This study analyses the determinants of household indebtedness in five ASEAN countries: Malaysia, Singapore, Thailand, Philippines and Indonesia. The two major group of determinants include macroeconomic fundamentals: interest rate, inflation rate, housing price and employment rate; and country specific factors: household income, working age population, retiring age population, consumer consumption and household savings. The study applies econometric analysis to ascertain the significance of the macroeconomic fundamentals and country specific determinants on household indebtedness. Unit root tests were carried out to prevent spurious regression. Empirical evidence suggests that in developing ASEAN countries, the level of household debt is significantly affected by macroeconomic fundamentals including interest rate, inflation rate and unemployment rate but the country specific factors are not found to be significant.

Keywords: Country Specific Factors, Household Indebtedness, Macroeconomic Factors

JEL Classification: E20, E21

INTRODUCTION

Household indebtedness has escalated substantially in many developed and developing economies over the recent decades. Household debt has become more serious as many bankruptcy cases and social problems arise due to the inability to repay the huge commitment by households. It is therefore vital to investigate the factors that lead to the rise in these debts. There are many issues that would arise when household debt increases in the context of household repayment difficulties, financial insolvency stress and

Correspondence: [1]catherine@salam.uitm.edu.my

bankruptcy. In addition, financial and social problems usually surface in households with large debt burden. Bankruptcy can be seen among young executives and most of them are below the age of thirty-five (Azmi & Madden, 2015). The ease of acquiring and uncontrollable use of credit cards has brought about many side effects when it resulted in excessive expenditure incurred. This is because it is convenient for users to pay with credit cards without considering affordability. As young adults have just started to work and earn only a fixed salary, easy credit results in excessive spending without their realizing the consequences of their actions.

Many cases of family breakups or divorces are also related to individual and household debt crisis. Heads of households become stressful and emotional due to debt problems as they struggle to pay back borrowings, which may lead to family misunderstandings. In addition, the relationship between family, friends, and relatives would also be affected by stress and emotional changes such as temper flare-ups, lack of communication, preferring to be left alone and not getting along with those around them as well as reduced self-esteem. With the lack of understanding and communication, there are many issues of divorce and family breakups.

Loss of employment is another negative effect of rising household debt. The ability of the individual to find a job is much reduced as employers may seek financial clearance of the candidate if they have ever filed for bankruptcy. Even if it has been a long time since one was declared bankrupt, one must still disclose the information or they might risk having their employment terminated for trying to hide personal history. In the general case of buying or renting property, the owner may also check the tenant's credit record before the lease offer. Many rental property owners are not willing to provide housing to individuals with a history of bankruptcy due to the higher level of default risk involved.

Among the lower income households with lower salary per month, it is not uncommon to find them resorting to borrowing from illegal sources. This group has a higher possibility of borrowing illegally because of their financial hardship, especially in developing ASEAN countries. When borrowers are unable to pay their debts, the creditors may try to get back their money in a criminal manner and this includes extortion, threat to murder, kidnapping, and other means.This would lead to social problems as well as a rise in crime rates.

The decline in consumption by households can decelerate the country's economic system in times of inflation when consumer income does not keep up with rising costs. Households which have higher debt would need to save more in order to reduce their liability. When prices of goods increase, they consume less and hence less money is

being circulated in the financial system, which may lead to economic slowdown. The weak demand from households reduces total spending, leading to jobs disappearing and therefore higher unemployment rate while human resources are not appropriately utilized, drastically affecting the economy as a whole.

A study by Drentea & Reynolds (2012) concluded that depression, anxiety and anger are common experiences of too much debt within the households. Meanwhile, social implications such as psychological distress (Brown, Taylor & Wheatley, 2005); marital instability (Sullivan, Warren & Lawrence, 1995); divorce (Fisher & Lyons, 2006) and even suicide contemplation (*Meltzer et. al, 2011*) can be the results of too much household debt. Excessive household debt triggered the global financial crisis in the United States that resulted in severe worldwide financial instability. Lund & Roxburgh (2010) revealed that the debt issue is not just particular to any one country but is a global problem with high leverage levels in various sectors of developed and developing countries. In the current challenging financial environment, household debt is still escalating, hence causing high levels of financial anxiety. The challenge of paying down debt, be it housing, automotive, education or credit cards can be overwhelming especially in a weak financial environment.

Meanwhile, the household debt situation in some emerging ASEAN countries has also denoted substantial increase for the past few years (Nakornthab, 2010). In emerging ASEAN countries, the increasing trend of household debt relative to disposable income has been worrisome. According to the McKinsey Global Institute, Malaysia emerged as the country with highest household debt in the region with 146% of household debt to income; South Korea at 144%; and Thailand at 121% in 2014 (McKinsey Global Institute, 2015). U.S. household debt to income ratio was 130% when the subprime crisis began.

Recent statistics from the World Bank Data (2015) also revealed that Malaysia and Thailand have the highest proportion of the household debt to GDP at 124% and 155%, respectively. The rate for Singapore, the Philippines and Indonesia are 129%, 39% and 38%, respectively as shown in Figure 1. This information explains that total loan taken by households in Malaysia is on average 1.24 times its GDP. This figure is high relative to the other developed countries including Japan and Germany. The Philippines and Indonesia seem to have relatively lower debt and this could be due to their slower rate of growth or credit culture. There is however greater risk of not being able to pay off debt if the rate of growth continues to increase tremendously. On the one hand when households spend using borrowed money, it would directly boost the economic growth but at the same time it would also slow down the economy when households

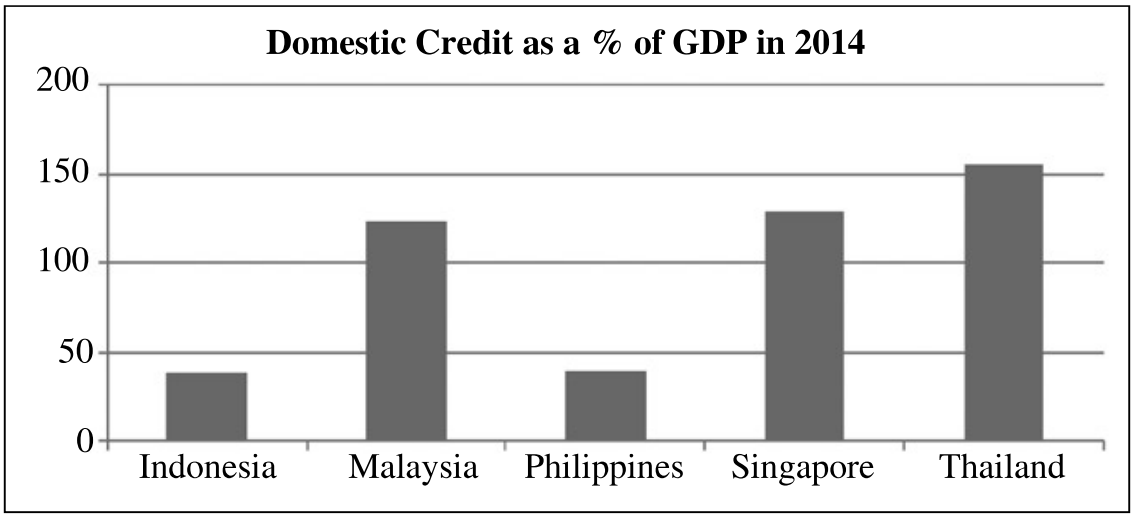

Figure 1: Household Domestic Credit as a Percentage of GDP in 2014
Source: World Bank Data (2015)

are unable to payback their loans. It has always been a double edged sword and thus ensuring sustainable leverage level of households in each country is vital for the management of a country's economic fundamentals.

This study therefore aims to investigate the significant fundamental and country specific determinants that influence household debt for a group of developing ASEAN countries, Malaysia, Singapore, Indonesia, the Philippines and Thailand.

LITERATURE REVIEW

The level of household debt has increased through the last decade and has led to drastic consequences on the economy when the ability to repay debt falls. General consumer consumption and appetite for financing can be explained by the macroeconomic and life-cycle theories of consumer behaviour. Keynesian economists postulate that increasing consumption results in increasing economic activity and growth, a macroeconomic effect. Creative innovations to consumption practices over the past few decades have however potentially proved hazardous. Overall global consumption has increased at a much faster pace than disposable income while domestic savings have remained relatively constant or even declined. It can be narrowed down to have been caused by a drastic increase in consumption through relatively cheap credit and households are consuming beyond their means. Macroeconomic fundamentals in accordance with Keynes which are included in this study are interest rate, inflation rate, unemployment rate, house price index and consumer consumption.

The life cycle theory hypothesizes that household savings and consumption reflect the life-cycle stage of the household and that consumption is a

linear function of available cash and the discounted value of future income (Ando & Modigliani, 1963). If income increases during working years and declines at retirement, households tend to borrow when they are young, save during the middle age and spend down during retirement (Yilmazer & Devaney, 2005). Thus, the level of household debt would increase during the younger years and decline later. For the life-cycle model, this study includes household disposable income, working age population, retiring age population and household savings. The concerns over the rising household debt and its determining factors are also examined by Soman & Cheema (2002), Debelle (2004), Hurst & Stafford (2004) and Dynan & Kohn (2007). The next section provides a summary of literature on various determining factors of household indebtedness.

INTEREST RATES

The increase in household borrowing is highly related to interest rates. Barnes & Young (2003) who conducted a study on the United States (U.S.) concluded that much of the rise in household debt in the 1990s can be explained by the interest rate factor. This factor also contributed to the increase in U.S. household debt especially during the early 1970s. Wadhwani (2002) stated that at any given household income, a decline in nominal interest rates eventually allows an increase in the maximum amount a financial institution could lend to households. This means that the decline in interest rate can significantly raise the amount of household borrowings. When banks offer cheaper borrowing, it would indirectly increase total borrowings by individuals and households. Much of the boost in household borrowing can thus be explained by the combination of declining interest rates, in both real and nominal terms and financial deregulation. Households would reduce their borrowing relative to the unexpected rise in interest rates later (Barnes & Young, 2003; Turinetti & Zhuang, 2011). It is expected that there exists a negative relationship between interest rate and household debt.

INFLATION RATES

Inflation rate is also one of the determinants of household consumptions and debt due to its effect on purchasing power. Debelle (2004) examined the influence of inflation, taxes and debt-service constraints on aggregate household debt levels and discovered that changes in inflation and liquidity constraint can result in changes in debt. The study found that lower inflation rates resulted in smaller upfront payments on mortgages, thus inflation rates declined less rapidly over the life of the loan, as the real value of the debt is eroded more slowly. Borrowers tend to spend as they have higher purchasing power, hence this behaviour would provide upward pressure on household debt levels. In summary, the decline in inflation has two effects on household borrowing. Firstly, the reduction in borrowing costs has allowed a greater number of households to borrow and therefore increase the

average level of debt per household. Secondly, with lower inflation, the real value of the debt (which is fixed in nominal terms) is not eroded as quickly. Thus, if inflation rates fall, the associated decline in nominal borrowing rates allows households to borrow larger amounts for a given limit of debt service. On the other hand, there exists negative relationship between purchasing power and the level of household debt since people are more likely to save when inflation rates increase, resulting in lower household debt.

HOUSEHOLD INCOME

According to Crawford & Faruqui (2012), household debt is closely related to household income since household demand for housing is positively significant with income. When household income increases, household debt would increase especially for households with mortgages. On the other hand, Girouard, Kennedy & Andre (2007) reported that households with the highest income would always engage in borrowing exceeding 80 percent of income resulting in higher borrowing than the lower household income group. Household income is positively related to household debt since the highest household income group demands more borrowing. However, the largest proportion of total debt is collectively owed by the lower household income group.

Debelle (2004) investigated the characteristics of household debt in Sweden and found that 40 per cent of total debt is from the high income households. In the U.S. three quarters of the highest income household group has mortgages compared to the 14 per cent of the lower income group. The highest debt to income ratios is from the lower end of the income distribution which consists of new home-buyers from younger households. This is because these are new younger families that have just started paying for their mortgages. Furthermore, the largest and most significant negative shock to household income is unemployment as it would be difficult to maintain mortgage payments through a period of joblessness.

HOUSE PRICES

Researchers have also found that one of the other significant determinants of household debt is house prices and this is a common factor that influences the rise of household debt for most countries. A study by Turinetti & Zhuang (2011) indicated that house prices measured by housing price index has positive effect on household debt. When house prices increase, household debt would also increase. In order to purchase a house, consumers need to take up loans and hence household debt is directly affected. In addition, Meng & Mounter (2009) concluded that during a period of rising house prices, households would have to borrow more due to higher house cost. Another research by Jacobsen & Naug (2004) indicated that when houses are sold at a higher price, household debt would

rise. The strong growth in debt is often attributed to rising house prices and high turnover in the housing market resulting in increasing household debt. Furthermore, Nickell (2004) also found that there is an empirical relationship between household debt and house prices whereby a rise in house prices increases household spending, leading to an increase in household debt.

UNEMPLOYMENT RATE

Another important determinant of household debt is the unemployment rate experienced by each country. A study by Hurst & Stafford (2004) found that households that experienced unemployment between 1991 and 1996 and who had zero liquid assets going into 1991 were 25 per cent more likely to refinance their mortgages compared to others. This means that when the unemployment rate rises, it would increase household debt due to lack of financial sources to repay their borrowings in the shorter term.

Similar to Turinetti & Zhuang (2011), there is an indirect correlation between unemployment rate and household debt across countries as stated by Bloxham & Kent (2009). The study found that if unemployment rate declines, household debt increases due to higher spending of the households. Reducing unemployment represents higher ability of each household to pay back their borrowings, thus increases in unemployment rate results in declining household debt. Generally, the literature review provided mixed findings on the effects of unemployment on debt levels.

WORKING AGE POPULATION

The percentage of working age population to total population measures the impact of demographics on the household debt. A higher percentage of working age population resulted in an increase in household debt according to Turinetti & Zhuang (2011). The increase in working age population is likely to lead to higher consumption and borrowing, hence increasing household debt. Furthermore, *Girouard et. al, (2007)* postulated that household debt would increase among young households or households in the middle age groups, consistent with the predictions from the life cycle theory of consumers' behaviour. This means that working age households would increase their borrowing, leading to a rise in household debt. Employment during working age improves household ability to repay debt accordingly.

RETIRING AGE POPULATION

Retiring age population is another determinant of household debt whereby a higher percentage of retiring age population relates to a lower level of household debt, as the retiring age population is assumed to be more conservative about consumption and borrowing than others (Turinetti & Zhuang, 2011). Countries with a higher

percentage of retiring age population would find a fall in household debt due to the barriers of payment ability for their debt. A study by Yilmazer & Devaney (2005) indicated that the likelihood of holding debt decreases as the age of the household increases. In contrast, Marmon (2003) found that the easy availability of credit and rising medical costs are cited as the reasons for today's older households maintaining high levels of debt. It is also argued that retiring age population would sometimes face higher debt especially in terms of their medical cost if they lack savings, thus increasing household debt. In summary, the findings are not conclusive as to the effects of retiring age population on debt.

AGGREGATE CONSUMER CONSUMPTIONS

Girouard et. al, (2007) examined the relationship between household balance sheet and consumer durables expenditure. They concluded that consumer consumption has positive relation with household debt. When households increase their expenditure, their debt would also increase. On the other hand, Jakubik (2011) applied gross domestic product (GDP) as a measurement of consumer consumption and confirmed that consumption influenced household insolvencies. The study confirmed that an increase in household insolvency is caused by a decline in nominal wages as well as an increase in unemployment and consumption. Household spending is positively related to household debt so when households spend more, household debt automatically increases.

HOUSEHOLD SAVINGS

Berry, Williams & Waldron (2009) postulated that household savings is the balance between current income and current consumption. The theory of modern savings explains that household spending is related to their expected permanent-income. If household income increases now rather than in the future, households start to save now. Household savings and household debt are therefore negatively related to each other since when households increase their savings, their borrowings decrease.

There are many factors which lead to reduced household savings, such as interest rate, unemployment rate, and rising asset prices. Harris, Loundes, & Webster (2002) stated that household disposable income is the most important factor influencing household savings. Higher income increases household savings and it leads to decreasing household debt. There is therefore negative relation between household savings and household debt. Nevertheless, the ability of incurring debt increases when income and savings increase. In summary, the compilation of findings from the literature review has been mixed and it prompted this study to explore the effects of macroeconomic and country specific factors on household indebtedness, especially in ASEAN developing countries.

Table 1: Variables and Measurement

VARIABLES	PROXY	MEASUREMENT	EXP RELATION
Household debt (HHD)	Loan outstanding to households	$(HHD_1-HHD_0)/HHD_0$	-
Interest rate (IR)	Bill Lending Rate	IR_1-IR_0	-
Inflation (INF)	Consumer Price Index (CPI)	$(CPI_1-CPI_0)/CPI_0$	-
Housing price index (HPI)	Housing Price Index	$(HPI_1-HPI_0)/HPI_0$	+
Unemployment (UR)	Unemployment Rate	UR_1-UR_0	+/-
Household income (HDI)	Household Disposable Income	$(HDI_1-HDI_0)/HDI_0$	+
Working age (WAP)	Working Age Population	$(WAP_1-WAP_0)/WAP_0$	+
Retiring age (RAP)	Retiring Age Population	$(RAP_1-RAP_0)/RAP_0$	+/-
Consumer Consumption (CC)	Gross Domestic Product (GDP)	$(GDP_1-GDP_0)/GDP$	+
Household savings (HS)	Household saving	$(HS_1-HS_0)/HS_0$	+/-

DATA AND METHODOLOGY

The investigation on household debt of five ASEAN countries which include Malaysia, Indonesia, Singapore, Philippines and Thailand is from 1990 to 2012. Time series secondary data was collected from Central Banks, Department of Statistics, World Bank (WDI), EIU Country Data, Global Market Information Database (GMID) and International Monetary Fund (IMF). The data series for each factor and their expected relation are shown in Table 1.

This study investigates the effects of macroeconomic as well as country related determinants on household debt as follows:

$$HHD_{it} = c + d_1IR_{it} + d_2INF_{it} + d_3HPI_{it} + d_4UR_{it} + d_5HDI_{it} + d_6WAP_{it} + d_7RAP_{it} + d_8CC_{it} + d_9HS_{it} + \lambda$$

In order to ensure that the variables exhibit stationarity so as to prevent the model from producing spurious regression results, the variables were transformed through the measure of computing the percentage changes. This study utilised the Augmented Dickey-Fuller (ADF) unit root tests to confirm that the time series applied in this study is stationary and the results are presented in Table 2. Variance Inflation Factor, White tests and Newey-West corrections were performed for any issue relating to multicollinearity, autocorrelation or heteroscedasticity.

Table 2: Unit Root Test for Five ASEAN Countries

VARIABLES	MALAYSIA	INDONESIA	THAILAND	PHILIPPINES	SINGAPORE
HHD	-3.150**	-3.513**	-5.287***	-3.565**	-3.360**
IR	-4.797***	-5.140***	-4.822***	-6.343***	-4.819**
INF	-6.673***	-5.049***	-5.319***	-7.575***	-4.586***
HPI	-2.657**	-3.739**	-5.073***	-3.365**	-5.376***
UR	-3.737***	-3.930***	-3.225***	-6.592***	-5.190***
HDI	-4.446***	-3.486**	-2.880**	-4.988***	-4.145***
WAP	-6.240***	-4.629***	-5.184***	-7.487***	-4.570***
RAP	-1.974	-3.366***	-5.183***	-4.523***	-2.714**
CC	-5.537***	-4.139***	-3.225**	-3.743***	-4.125***
HS	-3.828***	-4.669***	-6.269***	-4.262***	-3.079**

Note: ADF tests the time series with the null hypothesis that there exists a unit root and is not stationary. *, ** and *** denotes statistical significance at 10, 5 and 1%, respectively.

FINDINGS

The empirical evidence on the determinants of household debt for the group of ASEAN countries is provided in Table 3. Results for Malaysia indicate that disposable income and household savings have significant positive relation with household debt. When disposable income and household savings increase, households are in a better financial position to acquire assets, thus increasing the level of debt. In contrast, this study finds significant negative relation between consumer consumption and household debt where consumption falls when household debt increases. This may indicate that when

Table 3: Household Debt Results for ASEAN Countries

VARIABLES	MALAYSIA	INDONESIA	THAILAND	PHILIPPINES	SINGAPORE
IR	-0.043	0.212	0.032*	2.879*	0.001
INF	0.014	-1.667***	-0.022**	-37.177**	0.057
HPI	0.054	-0.387	0.032**	19.227	-0.474
UR	-	0.876	0.643**	-2.739	-0.256**
CC	-0.004*	-0.021	1.122	5.011	-0.369
HDI	0.160*	-	-0.021	12.467	-0.109
WAP	-2.516**	1.261	0.002	-6.297	-0.021
RAP	-0.001**	-5.411	-9.291	-110.462	-0.433
HS	0.276**	0.029**	-0.001	2.731	-0.124
C	-1.851**	0.590	0.544	4.650*	0.460**
Adj R^2	0.887	0.798	0.433	0.885	0.730
F Prob	0.002***	0.010***	0.062*	0.091*	0.025**

Note: p-value in parentheses; *** p<0.01, ** p<0.05, * p<0.1

households are facing difficulties, they need to reduce consumption and some may even resort to debt.

As for the evidence to support life-cycle hypothesis, retirement age population is found to be negatively related to household debt. When there are more people in retirement, there is less need for debt since they are depleting their savings during retirement with little need for additional borrowings. In contrast, it is interesting to note that the study also found negative relation between working population and household debt. As working age population increases, there is less household debt. This may be due to the inability to separate the working age population into younger newer families or middle age families which may have less need for debt. In summary, the results for Malaysia support the life cycle hypothesis with disposable income, savings, consumption as well as working and retiring age population significant in affecting household debt while macroeconomic factors including interest rate, inflation rate and house price index are not found to be significant.

The results for Indonesia indicate that inflation and household savings have significant relation to household debt. There is negative significant relation between inflation and household debt where higher inflation in this country reduces the households' ability to borrow which is in accordance with theoretical understanding (Debelle, 2004). On the other hand, higher level of savings increases household debt in Indonesia. Consistent with the results from Malaysia, higher savings level would enable households to acquire assets, some of which may be financed by borrowings, therefore resulting in higher household debt.

As for the evidence to support life-cycle hypothesis, retirement age population is found to be negatively related to household debt. When there are more people in retirement, there is less need for debt since they are depleting their savings during retirement with little need for additional borrowings. In contrast, it is interesting to note that the study also found negative relation between working population and household debt. As working age population increases, there is less household debt. This may be due to the inability to separate the working age population into younger newer families or middle age families which may have less need for debt. In summary, the results for Malaysia support the life cycle hypothesis with disposable income, savings, consumption as well as working and retiring age population significant in affecting household debt while macroeconomic factors including interest rate, inflation rate and house price index are not found to be significant.

The results for Indonesia indicate that inflation and household savings have significant relation to household debt. There is negative significant

relation between inflation and household debt where higher inflation in this country reduces the households' ability to borrow which is in accordance with theoretical understanding (Debelle, 2004). On the other hand, higher level of savings increases household debt in Indonesia. Consistent with the results from Malaysia, higher savings level would enable households to acquire assets, some of which may be financed by borrowings, therefore resulting in higher household debt.

Macroeconomic fundamentals appear to be driving household debt in Thailand. Household debt is significantly affected by interest rate in Thailand and the Philippines. Higher interest rate is correlated to more borrowings in these countries. This indicates that when the economy is performing well, interest rate and consumer spending increase, resulting in higher household debt. The macroeconomic theoretical understanding may be more relevant for developed countries on which most literature is based while it has a different effect on developing countries. Since these countries are achieving high rate of growth and income, development comes with higher cost of borrowing but households in these countries still need to borrow to finance mortgages for the general population, resulting in positive relation between interest rate, house price index and household debt.

In addition, there is also significant negative relation between inflation rate and household debt for Thailand and the Philippines, similar to the results in Indonesia. Moreover, house prices and unemployment rate are both positively related to debt in Thailand. Higher house prices and higher unemployment push households in Thailand to borrow more. This is especially true when house prices increase, mortgage value would increase in line with prices and households would have to secure a higher level of debt as found by Hurst and Stafford (2004). It is however, surprising to note that household debt continues to increase even with lower employment. It is surprising to note that for Singapore only unemployment is found to be significant in affecting household debt. The other macroeconomic and country specific factors are all not found to have significant relation to household debt in this country. Cultural factor plays a significant role in household borrowings where it is not the cultural practice of the majority of Singaporeans to borrow unnecessarily for consumer consumption. The life-cycle hypothesis for household debt is nevertheless not supported by results from Indonesia, Thailand, the Philippines and Singapore.

In summary, the majority of ASEAN countries' household debt level is significantly related to macroeconomic factors including interest, inflation and unemployment rate. Country specific determinants are only significant in Indonesia and Malaysia. Household savings and household disposable income are found to be significantly related to debt in a positive manner. The

life-cycle hypothesis is only supported by the significant results in Malaysia but not in the others.

CONCLUSION

The rapid rise in household debt is an issue that needs to be seriously addressed globally. It has created tremendous problems for large and small economies and it can cause serious financial crisis that not only affects the country itself but it can be contagious to others too. Household debt has become a new challenge for ASEAN countries and it has become a regional problem that has drastic effects on the stability and sustainability of development for these economies. This study investigated household debt trends for ASEAN countries where Thailand and Malaysia recorded the highest percentages (155% and 124%) of household debt to GDP in 2014. These countries' alarming figures may indicate that households are borrowing more than what they earn and the lower income group is most at risk. The household debt level in these developing countries is related to macroeconomic factors including interest rate, house price index, inflation and unemployment rate. Meanwhile, household debt level is not so much affected by country specific factors including disposable income, consumption, working and retirement population and household savings, except for Malaysia.

It is important to address some limitations of the research where the availability of longer and more elaborate data would further enhance the reliability of the results. The study was also not able to separate the working age population group into early and late working age in order to clearly support the life cycle hypothesis, resulting in mixed results for some emerging countries. Future studies may be able to extend the research in some of these areas to provide comprehensive findings.

In essence, it is important to investigate factors that lead to the rise of household debt in each country. Better understanding of the determinants in this area with insight knowledge of the causes of unsustainability in household indebtedness is of great importance to policy makers and relevant authorities in these ASEAN countries. The appropriate authorities would be able to take necessary actions to influence and control household debt level before any drastic financial crisis sets in. Households must have the ability to manage and plan their financial expenditure effectively. Knowledge of how to plan household finance is important in order to ensure household debt is sustainable, thus reducing the burden in having to set aside large amounts of money to pay off debts, especially among youth.

ACKNOWLEDGEMENTS

We would like to acknowledge the assistance of: Nur Atteya Darmila Osman, Noor Farahhin Razali and

Rosmawati Ismail, who have provided much assistance in the completion of this paper. ■

REFERENCES

Ando, A. & Modigliani, F. (1963). The "Life Cycle" Hypothesis of Saving: Aggregate Implications and Tests, The American Economic Review, 53(1), 55–84.

Barnes, S. & Young, G. (2003). The Rise in US Household Debt: Assessing its Causes and Sustainability, Bank of England Working Paper Series, Working Paper No. 206.

Berry, S., Williams, R. & Waldron, M. (2009). Household Saving, Research and Analysis, Quarterly Bulletin, (1), 191–201.

Bloxham, P. & Kent, C. (2009). Household indebtedness, Australian Economic Review, 42(3), 327–339.

Brown, S., Taylor, K. & Wheatley, P.S. (2005). Debt and Distress: Evaluating the Psychological Cost of Credit, Journal of Economic Psychology, 26(5), 642–663.

Crawford, A. & Faruqui, U. (2012). What Explains Trends in Household Debt in Canada? Bank of Canada Review, 3–15.

Drentea, P. & Reynolds, J.R. (2012). Neither a Borrower nor a Lender: The Relative Importance of Debt and SES for Mental Health among Older Adults, Journal of Aging and Health, 24(4), 673–95.

Debelle, G. (2004). Household Debt & the Macroeconomy, BIS Quarterly Review, 51-64.

Girouard, N., Kennedy, M. & Andre, C. (2007). Has the Rise in Debt Made Households More Vulnerable? Economics Department Working Paper No. 535, Organisation for Economic Co-operation and Development.

Harris, M. N., Loundes, J. & Webster, E. (2002). Determinants of Household Saving in Australia, Economic Record, 78(241), 207–223.

Hurst, E. & Stafford, F. (2004). Home is Where the Equity Is: Liquidity Contraints, Refinancing and Consumption, Journal of Money, Credit and Banking, 36(6), 985-1014.

Jakubik, P. (2011). Household Balance Sheets and Economic Crisis, Institute of Economic Studies (IES) Working Paper 20/2011, Charles University, Prague.

Lund, S. & Roxburgh, C. (2010). Debt and Deleveraging, World Economics, 11(2), 1–30.

Marmon, L. (2003). Older Americans going deeper in debt, AARP Bulletin Today. Retrieved June, 11, 2011.

McKinsey Global Institute (2015). Debt and (Not Much) Deleveraging, Report by McKinsey Global Insitute, McKinsey and Company, February 2015.

Meltzer, H., Bebbington, P., Brugha, T., Jenkins, R., McManus, S. & Dennis, M.S. (2011). Personal Debt and Suicidal Ideation, Psychological Medicine, 41(4), 771–8.

Nakornthab, D. (2010). Household Indebtedness and its Implications for Financial Stability, Research Studies RP80, South East Asian Central Banks (SEACEN) Research and Training Centre at http://www.seacen.org/GUI/pdf/publications/research_proj/2010/RP80/RP80_complete.pdf

Nickell, S. (2004). House Prices, Household Debt and Monetary Policy, Bank of England Speeches at http://www.bankofengland.co.uk/archive/Documents/historicpubs/speeches/2002/speech187.pdf

Soman, D. & Cheema, A. (2002). The Effect of Credit on Spending Decisions: The Role of Credit Limit and Credibility, Marketing Science, 21(1), 32–53.

Turinetti, E. & Zhuang, H. (2011). Exploring Determinants of U.S. Household Debt, Journal of Applied Business Research, 27(6), 85-91.

Wadhwani, S. (2002). Household Indebtedness, The Exchange Rate and Risks to the UK Economy, Bank of England Quarterly Bulletin, Summer 2002.

World Bank Data (2015). Domestic Credit to Private Sector (% of GDP) at http://data.worldbank.org/indicator/FS.AST.PRVT.GD.ZS

Yilmazer, T. & Devaney, S.A. (2005). Household Debt over the Life Cycle, Financial Services Review, 14, 285–304.