

Macro Note

ASEAN: Contextualizing The Issue Of Household Debt In Selected ASEAN Economies

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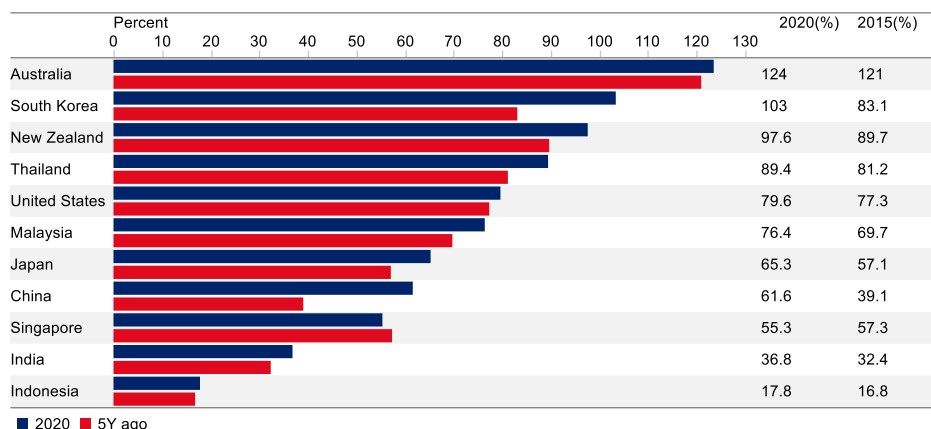
- Household debts are on the rise in ASEAN economies but remains at an acceptable rate of increase.
- Our empirical analysis suggests that interest rates cycle, household income, and inflation are the key factors in determining the future trend of household debts in ASEAN-4.
- Pursuing non-inflationary sustainable rate of economic growth remains an imperative policy strategy for policymakers in the region to keep a lid on potential negative ramifications from rising household debts. Financial deepening, together with enhancements to monitoring and prudential functions of associated risks, is also another important strategy to be considered.

Understanding Household Debt in ASEAN

Rapid increase in household indebtedness has been gaining attention as one of possible systemic economic risks in the very near future, if left unchecked. The pandemic has made it even more alarming for some countries that already have elevated levels of household debt prior to COVID-19. Through this note, we set out to understand better and contextualize the most recent trend of household debt, decipher factors leading to the rise in these debts, and analyze the possible future trajectory and their associated risks in selected ASEAN economies in the region.

Figure 1. Household Debt as Percentage Of GDP

Source: IMF, Macrobond, UOB Global Economics & Markets Research



For one, household debt has become a more serious risk as many bankruptcy cases and social problems evolve due to the inability to repay the huge commitment. Furthermore, financial and social problems would typically ensue for households with large debt burden. Prolonged low interest rates environment especially during the COVID outbreak and relatively easier access to credit through the rapid increase of digitalization could have partially brought to

surface many of these mentioned negative side effects when consumers indulge on excessive spending without carefully considering their ability to payback the debts in due course.

However, those so-called negative side effects of rising household debt may not fully justify that the future course of consumer spending is going to be gloomy because of the risk of rising household debt, nor does it imply that higher, but not unsustainable, household debt is necessarily a bad thing that must be tackled ferociously. Better understanding of what can be considered as an acceptable level of household debt for given macroeconomic fundamentals and with some forecasts of what the future may hold for these economies, we closely look at the trade-off between risks and opportunities associated with household debt in the region. Before we delve further into empirical and a more rigorous econometrics exercise and analysis, it is apt for us to establish the long-standing economic theory on this issue and then focus on selected ASEAN countries.

Theories on Household Debt

The level of household debt can be explained by macroeconomic theories, specifically, the life-cycle hypothesis. One observation underpinning these theories is that overall global consumption has increased at a much faster pace than disposable income while domestic savings have remained relatively constant. And theorists argued that such drastic increase in consumption demand is fuelled through relatively cheap credit, prolonged or otherwise. The **life-cycle hypothesis** proposes that household savings and consumption reflect the life-cycle stage of households and that consumption is a linear function of available cash and the discounted value of future income (Ando and Modigliani, 1963). If income were to increase later on in the future during working years and decline at retirement, household tend to borrow when they are young, save during their middle age, then draw most down during retirement (Yilmazer and Vaney, 2005). Thus, the amount of household debt will increase during the younger age of the household.

Other key determinants of household debt include interest rates, inflation, and household income which are influenced by employment and working age population.

1. The increase in household borrowing is **highly correlated to the interest rate** and a study (Debelle, 2004) conducted in the US concluded that a rise in household debt in the 1990s was predominantly driven by the interest rate factor. When interest rates are in down cycle, banks would be offering cheaper loans, households would typically increase their total borrowings. It is expected that there is a negative relationship between interest rates and household debt.
2. **Inflation rate is also one of the determinants** of household consumption and debt. 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 is not eroded as quickly. If inflation rates have fallen, the associated decline in nominal borrowing rates have allowed households to borrow larger amounts for a given limit of debt services.
3. **Household income** also plays an important role in influencing the level of household debt. Household debt is closely related to household income since household's demand for housing is positively related to income (Crawford and Faruqui, 2011). Furthermore, the largest and most significant negative shock to household income is unemployment and it would be difficult to maintain mortgage payments through a period of joblessness. Another factor that influences household debt is the **working age population** and the higher percent of working age population resulted in and increase in household debt (Turinetti and Zhuang, 2011).

Our Empirical Findings and Analysis on Selected ASEAN Economies

We conducted our own empirical analysis on selected ASEAN economies, namely Singapore, Malaysia, Thailand, and Indonesia (Figure 2). Table 1 below summarizes what are the key variables found to be statistically significant in affecting the household debt in each economy based on our regression estimates and analysis.

Table 1. Key Variables Statistically Found to Drive Household Debt in ASEAN-4

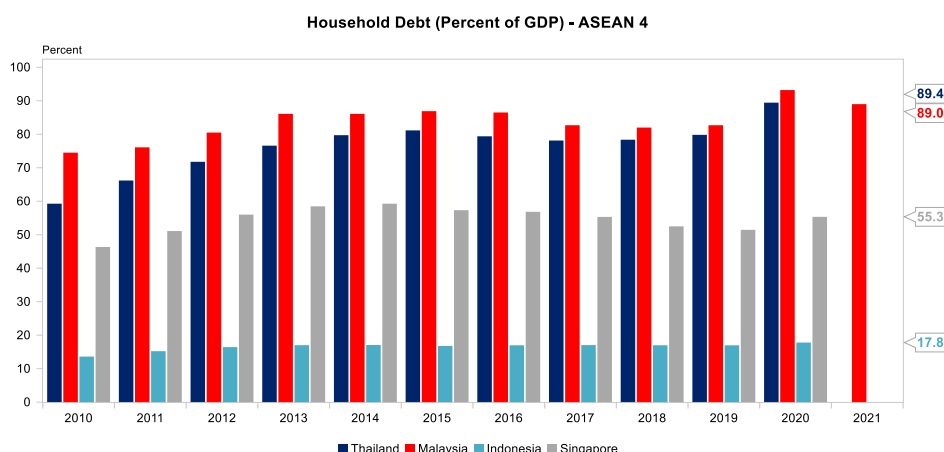
Source: UOB Global Economics & Markets Research

	Household income (+ relationship)	Interest rate (- relationship)	Inflation (- relationship)	Others
Singapore	✓	✓	✓	Unemployment rate
Indonesia	✓	✓	✓	real estate prices
Malaysia	✓	✓	✓	Unemployment rate
Thailand	✓	✓	✓	real estate prices

Firstly, we establish the stylized facts based on theories and more established empirical findings that an economy with younger population tend to have longer runway to grow assets (Table 2). More obviously, as all of the ASEAN countries in our study have more than 50% active labor force viz. total population, this actually underpins stronger support for rising employment income in the future. Lastly, the bigger the population would of course mean that the rise of household debt could be slower compared to a smaller, and perhaps a more open economy. The table illustrates this point when we compare the case for Indonesia vs. Singapore, for example.

Figure 2. Household Debt Trends in ASEAN-4

Source: Bank Negara Malaysia, IMF, Macrobond, UOB Global Economics & Markets Research



We are now ready to focus the study using a more rigorous framework and covering periods up to the post-COVID data. We adapt the econometrics framework by Ho, Yusof, and Mainal (2016). Comparable, usable, and available data are thus far only available for Singapore, Malaysia, Thailand, and Indonesia. Running a general-to-specific methods of regression (with R^2 to be as high as more than 92% for Thailand and Indonesia, a good indication that our models have high goodness-of-fit) unveils some interesting results. We present our regression results in the Appendix I-IV.

We found that **interest rates, especially the lending rates, all have negative relationship with the household debt**, i.e. when interest rates are falling or when country(s) are on rate-cutting cycle, household debt tend to rise, and vice versa. We found that interest rate elasticity is very elastic in Malaysia and the least elastic in Indonesia. High interest rate elasticity would mean that for a given interest rate movement, household debt will react swiftly and in a relatively larger quantum.

We also found that higher income would generally lead to higher household debt. The findings are generally in sync with a well established theory that as people earn more income, they tend to borrow more to finance their future liabilities for a more immediate consumption.

This would have significant policy implications that in order for leverage or level of household debt to rise sustainably, policies must be aimed to create a non-inflationary and sustainable economic growth trajectory that will support steady increase in the overall household income.

Specific evidence during COVID-19 pandemic is one stark example that for **countries that could embark on timely fiscal stimulus and keep household income from falling drastically did not see a dramatic rise in household debt** (as in the case of Malaysia) viz an economy that perhaps hit-hard by external sector (such as tourism) which was unable to be fully cushioned by the fiscal stimulus (as in the case of Thailand). Figure 3 is derived from Asian Development Bank Institute (ADBI) most recent study that conducted a survey to analyze the effects of COVID-19 pandemic on household income. Amongst the ASEAN-4, the proportion of Indonesian households seeing their household income decreased by more than 26% was the highest at 2/3rd of the total surveyed, followed by Thailand at 56%, while Malaysia saw slightly more than 1/3rd with household income down by 26% and more during the height of the pandemic.

Figure 3. ADBI Survey of Impact from COVID-19 Pandemic on Household Income

Source: Asian Development Bank Institute, UOB Global Economics & Markets Research

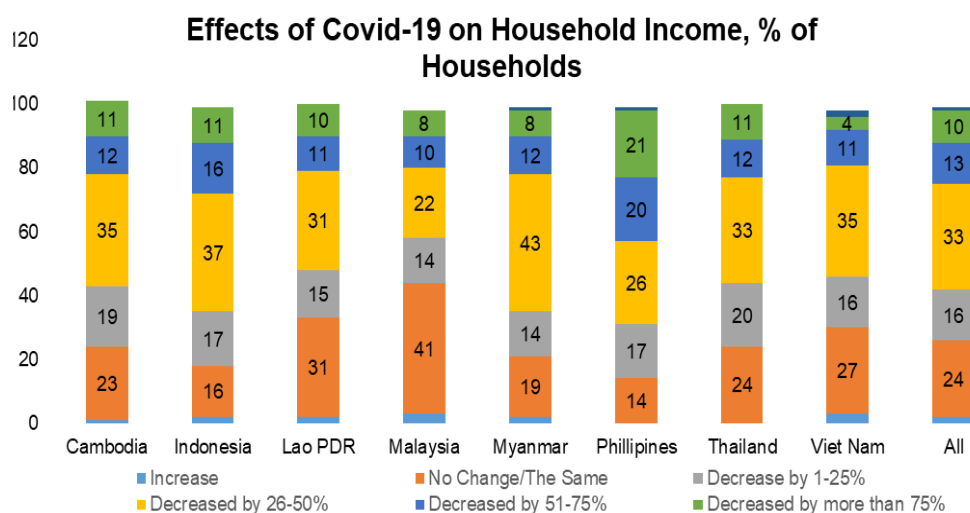


Table 2. Key Demographical Indicators Of Selected ASEAN Economies

Source: Official statistical sources from each country, UOB Global Economics & Markets Research

Singapore									
Economic and Population Indicators	2017	2018	2019	2020	2021	2022F	2023F	2024F	2025F
Total Population Size (Number)	5,612,253	5,638,676	5,703,569	5,685,807	5,453,566	5,330,000	5,290,000	5,290,000	5,320,000
Growth from Previous Year (%)	0.1	0.5	1.2	-0.3	-4.1	-2.3	-0.8	0	0.6
Resident Population Size (Number)	3,965,796	3,994,283	4,026,209	4,044,210	3,986,842	-	-	-	-
Citizen Population Size (Number)	3,439,177	3,471,936	3,500,940	3,523,191	3,498,191	-	-	-	-
Non-Resident Population Size (Number)	1,646,457	1,644,393	1,677,360	1,641,597	1,466,724	-	-	-	-
Median Age of Population									
Median Age of Resident Population (Years)	40.5	40.8	41.1	41.5	41.8	-	-	-	-
Median Age of Citizen Population (Years)	41.3	41.7	42	42.2	42.5	-	-	-	-
Total Size of Labor Force (Thousands)	3,657.0	3,675.6	3,742.5	3,713.9	3,607.6	-	-	-	-
Growth from Previous Year (%)	-0.4	0.5	1.8	-0.8	-2.9	-	-	-	-
Size of Resident Labor Force (Thousands)	2,269.7	2,292.7	2,328.5	2,345.5	2,397.8	-	-	-	-
Overall Unemployment Rate (%)	2.2	2.1	2.3	3	2.7	-	-	-	-
Resident Unemployment Rate (%)	3.1	2.9	3.1	4.1	3.5	-	-	-	-
Citizen Unemployment Rate (%)	3.3	3	3.3	4.2	3.7	-	-	-	-
Median Monthly Household Income (USD)	9,023	9,293	9,425	9,189	9,520	-	-	-	-
Real Growth from Previous Year (%)	1.5	2.6	1	-2.4	1.5	-	-	-	-
Median Monthly Household Income per Capita (USD)	2,699	2,792	2,925	2,886	3,027	-	-	-	-
Real Growth from Previous Year (%)	3.9	3	4.3	-1.2	2.8	-	-	-	-
Gross Savings Rate (%)	48.3	45.5	44.7	45.4	48.3	-	-	-	-
Growth from Previous Year (%)	2.8	-5.8	-1.8	1.6	6.4	-	-	-	-

Malaysia									
Economic and Population Indicators	2017	2018	2019	2020	2021	2022F	2023F	2024F	2025F
Total Population Size (Thousands)	32,023	32,382	32,523	32,584	32,655	33,114	33,530	33,930	34,330
Growth from Previous Year (%)	1.2	1.1	0.4	0.2	0.2	1.4	1.3	1.2	1.2
Citizen Population Size (Number)	28,735	29,059	29,382	29,677	29,962	-	-	-	-
Non-Citizen Population Size (Number)	3,288	3,323	3,140	2,907	2,693	-	-	-	-
Median Age of Population (Years)	28.3	28.6	28.9	29.3	29.6	-	-	-	-
Total Size of Labor Force (Thousands)	15,155.0	15,523.1	15,885.3	16,085.6	16,277.1	-	-	-	-
Growth from Previous Year (%)	2	2.4	2.3	1.3	1.2	-	-	-	-
Overall Unemployment Rate (%)	3.4	3.3	3.3	4.5	4.6	-	-	-	-
Median Monthly Household Income (USD)	-	1,282	1,333	1,183	-	-	-	-	-
Growth from Previous Year (%)	-	-	4	-11	-	-	-	-	-
Median Monthly Household Income per Capita (USD)	-	461	480	426	-	-	-	-	-
Growth from Previous Year (%)	-	-	4	-11	-	-	-	-	-
Gross Savings Rate (%)	28	26	25	24	27	-	-	-	-
Growth from Previous Year (%)	0	-7	-4	-4	13	-	-	-	-

Thailand									
Economic and Population Indicators	2017	2018	2019	2020	2021	2022F	2023F	2024F	2025F
Total Population Size (Thousands)	69,210	69,430	69,630	69,800	69,950	70,080	70,180	70,270	70,330
Growth from Previous Year (%)	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1
Median Age of Population (Years)	38.3	38.3	38.3	40.1	-	-	-	-	-
Total Size of Labor Force (Thousands)	38,610.0	39,029.2	38,778.0	39,036.7	39,052.0	-	-	-	-
Growth from Previous Year (%)	-0.4	1.1	-0.6	0.7	0.03	-	-	-	-
Overall Unemployment Rate (%)	1.2	1.1	1	2	1.5	-	-	-	-
Median Monthly Household Income (USD)	782	619	754	618	793	-	-	-	-
Growth from Previous Year (%)	27.6	-20.8	21.8	-18	28.3	-	-	-	-
Median Monthly Household Income per Capita (USD)	252	200	243	199	256	-	-	-	-
Growth from Previous Year (%)	27.6	-20.8	21.8	-18	28.3	-	-	-	-
Gross Savings Rate (%)	32	32	32	28	30.5	-	-	-	-
Growth from Previous Year (%)	6.7	0	0	-12.5	8.9	-	-	-	-

Vietnam									
Economic and Population Indicators	2017	2018	2019	2020	2021	2022F	2023F	2024F	2025F
Total Population Size (Thousands)	94,286	95,385	96,484	97,580	98,510	99,220	100,100	100,950	101,770
Growth from Previous Year (%)	1.1	1.2	1.2	1.1	1	0.7	0.9	0.8	0.8
Median Age of Population (Years)	30.9	30.9	30.9	32.5	-	-	-	-	-
Total Size of Labor Force (Millions)	54.8	55.4	55.8	54.6	50.5	-	-	-	-
Growth from Previous Year (%)	0.6	1.1	0.7	-2.1	-7.5	-	-	-	-
Size of Urban Labor Force (Millions)	17.4	17.9	18.1	18.2	18.7	-	-	-	-
Size of Rural Labor Force (Millions)	37.4	37.5	37.7	36.4	31.8	-	-	-	-
Overall Unemployment Rate (%)	2.2	2.2	2.2	2.48	3.2	-	-	-	-
Urban Unemployment Rate (%)	3.2	3.1	3.1	3.9	-	-	-	-	-
Rural Unemployment Rate (%)	1.8	1.7	1.7	1.8	-	-	-	-	-
Median Monthly Household Income (USD)	-	635	707	695	688	-	-	-	-
Growth from Previous Year (%)	-	-	11.4	-1.6	-1.1	-	-	-	-
Median Monthly Household Income per Capita (USD)	-	167	186	183	181	-	-	-	-
Growth from Previous Year (%)	-	-	11.4	-1.6	-1.1	-	-	-	-
Gross Domestic Savings Rate (%)	25.5	26	25.4	25.4	-	-	-	-	-
Growth from Previous Year (%)	2.4	2	-2.3	0	-	-	-	-	-

Indonesia									
Economic and Population Indicators	2017	2018	2019	2020	2021	2022F	2023F	2024F	2025F
Total Population Size (Thousands)	261,000	265,000	267,000	270,200	273,880	274,860	277,430	279,960	282,460
Growth from Previous Year (%)	1.2	1.5	0.8	1.2	1.4	0.4	0.9	0.9	0.9
Median Age of Population (Years)	28.8	28.8	28.8	29.7	-	-	-	-	-
Total Size of Labor Force (Millions)	129.1	133.0	136.2	136.5	139.2	-	-	-	-
Growth from Previous Year (%)	2.3	3	2.4	0.2	2	-	-	-	-
Overall Unemployment Rate (%)	5.5	5.3	5.2	7.1	6.5	-	-	-	-
Median Monthly Household Income (USD)	367	369	366	340	340	-	-	-	-
Growth from Previous Year (%)	9	0.4	-0.8	-7.1	0	-	-	-	-
Median Monthly Household Income per Capita (USD)	94	95	94	87	87	-	-	-	-
Growth from Previous Year (%)	9	0.4	-0.8	-7.1	0	-	-	-	-
Gross Savings Rate (%)	31	32	31	30	34	-	-	-	-
Growth from Previous Year (%)	3.3	3.2	-3.1	-3.2	13.3	-	-	-	-

Next: inflation rates. **We found inflation rates to be negatively correlated with household debts for all countries.** The estimates are consistent with some studies that found during periods of higher inflation, the real value of the debt is going to be eroded rather quickly and would deter households to borrow more. This could also be intuitively explain that during periods of higher inflationary rate, households would tend to defer their consumption of non-essential items for more essential ones without resorting much to additional debts unwarrantedly. Besides, during periods of high inflation that could increase risks of slower economic growth, consumers would typically postpone their large ticket purchases that are sensitive to interest rates, such as property and autos.

Other variables such as real estate ownership and unemployment rate generally have mixed effects differing from one country to another one. For example, real estate prices is positively correlated with household debt in Indonesia and Thailand, while unemployment rates statistically affects household debts level in Singapore and Malaysia. The findings on Indonesia and Thailand are largely consistent with empirical findings by Narkhontab (2010) that suggest increasing level of house prices have unwittingly encouraged housing purchases and necessitated larger borrowings. Unemployment rate is found to be statistically significant for the case of Singapore and Malaysia.

The policy implications for countries pursuing sustainable growth strategy through higher domestic demand, especially through “leveraged” consumer spending is three-pronged. **Firstly**, in order to keep the risk of rising household debt from becoming a more acute problem in the near future, **countries must pursue sustainable economic growth strategy through value creation that will bring about more higher valued jobs and higher household income.** As such, palatable set of policy courses would involve more focus on bringing higher value FDI into the country with some focus on sustained transfer of skills and knowledge rather than massive capital investment per se. Furthermore, higher consumption should indeed be driven by improvements in labour incomes and higher and sustainable economic growth. **Secondly, in pursuing the goal of higher economic growth, policymakers must achieve it in a non- or at least minimally-inflationary environment.** As such, addressing roots of inflationary causes such as supply-chain disruptions, excessive exchange rate volatility, and targeted fiscal measures will be key to achieve this intended result. After all, if one can anchor inflation expectations well enough, the need for unpalatably higher interest rates is unnecessary.

Third, the role of financial intermediary remains the most pivotal in ensuring that consumer credits are channeled prudently but not too limiting such that it becomes counterproductive to the first two policies of achieving higher non-inflationary sustainable economic growth strategies. For example, financial regulators in Malaysia continue to implement policies that avert a build-up of excessive credit risks and ensure that growth of household debt was stable, which is supported by sound lending standards and affordable debt-service ratios. This was also reflected by its central bank’s recent move to normalize interest rates sooner rather than later. That said, risks would be unevenly more on the lower income groups because middle and higher income groups tend to have more asset buffers. As such, government and policymakers have to go hand-in-hand with the private sectors, especially financial intermediaries, to set up sound institutional capacity to ensure that as the due process of financial deepening is taking its course to bring the country into higher and sustainable growth trajectory, the monitoring and prudential functions of associated risks are also enhanced in tandem.

Finally, based on our study and the corresponding analytical matrix we used, we found that Indonesia is likely to have the utmost potential to embark on higher household debt, provided that safeguarding policy measures and some degree of prudential rise are in place and enhanced. Amongst the 4 countries, Singapore is probably where the “gold” standard lies in terms of having a sustainable rise of household debt, which are backed by strong assets (and its quality and liquidity) and high household income coupled with sound fiscal policy to cushion the income shocks during challenging times.

Appendix I. Regression report – Thailand

IMF Global Debt Database, Household Debt, Loans & Debt Securities, Percent of GDP

Estimation sample range	2012 Jan	2020 Dec
Observations	108	
Degrees of freedom	101	
R²	0.79006	
Adjusted R²	0.77537	
F	63.34921	
P-value (F)	0.00000	
Sum of squared errors	435.00344	
Standard error of regression	2.07532	
Durbin-Watson	0.50577	
AIC	4.36073	
HQ	4.43122	
Schwarz	4.53457	

	Coefficient	Standard error	t	P-value
intercept	85.67854	2.02355	42.34070	0.00000
x1	-0.82337	0.25211	-3.26587	0.00149
x2	-4.98171	0.75854	-6.56749	0.00000
x3	1.29746	1.04359	1.24326	0.21665
x4	0.24373	0.07246	3.36366	0.00109
x5	-0.05439	0.02295	-2.36994	0.01969
x6	0.21778	0.06526	3.33709	0.00119

Legend

x1	Consumer Price Index, Total, Change Y/Y
x2	Government Benchmarks, Bank of Thailand, 3 Month, Yield
x3	Unemployment, Rate, Total
x4	Real Estate Prices, Single-Detached House Price Index (including Land), Nationwide, Index, Bank of Thailand, Residential, Price Index
x5	Income Approach, Households & NPISH, Saving, THB
x6	Thailand, Wages & Salaries, By Industry, Total, Total, THB

Appendix II. Regression report - Indonesia

IMF Global Debt Database, Household Debt, Loans & Debt Securities, Percent of GDP

Estimation sample range	2003 Jan	2022 Mar
Observations	231	
Degrees of freedom	223	
R²	0.95976	
Adjusted R²	0.95831	
F	759.76012	
P-value (F)	0.00000	
Sum of squared errors	83.02685	
Standard error of regression	0.61018	
Durbin-Watson	0.20951	
AIC	1.88389	
HQ	1.93197	
Schwarz	2.00311	

	Coefficient	Standard error	t	P-value
intercept	30.21494	0.34706	87.05933	0.00000
x1	-0.94512	0.04246	-22.25970	0.00000
x2	0.02368	0.00887	2.66990	0.00815
x3	-0.36557	0.05271	-6.93490	0.00000
x4	0.02554	0.00790	3.23216	0.00141
x5	-0.04233	0.01801	-2.35041	0.01963
x6	-0.04859	0.06801	-0.71443	0.47571
x7	0.16634	0.04017	4.14048	0.00005

Legend

x1	Lending Rates, Local Currencies, Commercial Banks, Consumer Loans
x2	Wages & Salaries, Average Monthly Salaries, By Industry, Total, IDR
x3	Unemployment, Rate
x4	Deposits & Loans, State Banks, Deposits, Total, IDR
x5	Consumer Price Index, Total, General, Index
x6	Real Estate Prices, Total (Exclude Jabodebek-Banten), Index, Bank Indonesia, Residential, Price Index
x7	Real Estate Prices, Total, Index, Bank Indonesia, Residential, Price Index

Appendix III. Regression report – Singapore

IMF Global Debt Database, Household Debt, Loans & Debt Securities, Percent of GDP

Estimation sample range	2012 Aug	2022 Mar
Observations	116	
Degrees of freedom	110	
R²	0.64084	
Adjusted R²	0.62107	
F	39.25471	
P-value (F)	0.00000	
Sum of squared errors	244.88327	
Standard error of regression	1.49205	
Durbin-Watson	0.11556	
AIC	3.68852	
HQ	3.74633	
Schwarz	3.83094	

	Coefficient	Standard error	t	P-value
Intercept	64.50861	1.20902	53.35608	0.00000
x1	-0.27728	0.16590	-1.67134	0.09750
x2	-3.03763	0.30828	-9.85358	0.00000
x3	-3.04442	0.51027	-5.96630	0.00000
x4	-0.06185	0.05756	-1.07461	0.28490
x5	0.20605	0.12391	1.66296	0.09917

Legend

x1	Consumer Price Index, Total, Index
x2	Government Benchmarks, Monetary Authority of Singapore, MAS Bill, 12 Week, Yield
x3	Unemployment, Overall, Percent, SA
x4	Real Estate Prices, Total, Index, Singapore Urban Redevelopment Authority (URA), Residential, Price Index
x5	Balance Sheet & Flows of MFI Sector, Households, Assets, Total, SGD

Appendix IV. Regression report – Malaysia

IMF Global Debt Database, Household Debt, Loans & Debt Securities, Percent of GDP

Estimation sample range	2011 Jan	2022 Mar
Observations	135	
Degrees of freedom	130	
R²	0.74661	
Adjusted R²	0.73679	
F	95.76239	
P-value (F)	0.00000	
Sum of squared errors	953.25175	
Standard error of regression	2.70790	
Durbin-Watson	0.29043	
AIC	4.86656	
HQ	4.91028	
Schwarz	4.97416	

	Coefficient	Standard error	t	P-value
intercept	89.29268	6.85633	13.02339	0.00000
x1	2.51090	0.82917	3.02819	0.00297
x2	0.10472	0.04239	2.47024	0.01480
x3	-0.75969	0.20266	-3.74864	0.00027
x4	-6.21252	0.89518	-6.93995	0.00000

Legend

x1	Unemployment, Rate
x2	Malaysia, Wages & Salaries, Monthly Wages, Citizens, Median
x3	Consumer Price Index, Total, Index
x4	Malaysia, Lending Rates, Commercial Banks, Average

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