

CHAPTER 5

CONCLUSION AND POLICY IMPLICATIONS

5.1 Introduction

The chapter provides the conclusion and implications of the study. The discussion in this chapter contributes to the body of knowledge in literature. Limitations and possible extensions for future studies are provided at the end of the chapter.

5.2 Summary

The rapid increase in household debt caused an economic slowdown and dragged the 2008 financial crisis longer. The main idea that led the focus of this thesis in discussing household debt as well as its causes and impacts on economic stability lies in three aspects. First, this dissertation investigated the impact of household debt on growth, the role of institutional quality in the household debt-growth nexus, financial development as a determinant of household debt, and the role of household debt in the EWS model in predicting systemic banking crises. The study analysed a panel data of 43 countries for the period of 1980–2018. The suitability of the estimator method for panel data depends on the cross-section and time series. Since the study had small cross-sections, a bias-corrected LSDV estimator was employed for the first, second, and third research objectives while GMM was used to test for robustness. Moreover, the logit regression method is suitable for the fourth objective of the study.

First, the study examined the effect of household debt on growth. Empirical results based on the bias-corrected LSDV estimator confirm the findings of previous studies that

household debt has a negative relationship with growth in the investigated countries. As for convergence, the sign is statistically significant, hence the model is confirmed to be suitable for dynamic panel. The results show that the estimated coefficients of capital and trade openness are positive in all processes. Meanwhile, population growth and inflation have negative coefficients. Further analysis using the GMM estimator passed the diagnostic test successfully and is consistent in all analyses. Specifically, the study revealed that household debt remains negative and robust in all specifications. To summarise the findings for the first objective, this investigation discovered that a higher level of household debt is detrimental to economic growth. It means a higher level of household debt can cause vulnerabilities to economic stability. Nevertheless, households are still required as a tool in increasing consumption and aggregate output, following Modigliani's (1963) life cycle model. Relatively high household debt levels may cause economic instability (Eggertsson & Krugman, 2012). Hence, institutional quality is needed to observe and manage the impact of debt on growth.

Second, the study extended the household debt-growth model by incorporating institutional quality and the interaction term between household debt and institutional quality. The study found that the role of institutional quality in the relationship between household debt and economic growth is positive and statistically significant but weak. Based on the results in considering the countries with the highest and lowest household debt and institutional quality, it may be concluded that household debt and institutional quality complementarily improves a country's sluggish economy at medium institutional quality and high household debt levels as shown in Table 4.6. Moreover, countries with considerably high institutional quality may observe a positive impact of household debt on

growth (see Table 4.7). Similarly, a higher level of household debt allows a more apparent and positive effect of institutional reforms on growth. Better institutional quality significantly affects growth. In summary for the second objective, better institutional quality significantly spurs growth and the influence of household debt on growth is stronger at a low level of institutional quality.

Third, the negative relationship between household debt and growth encouraged this research to investigate the role of financial development as a determining factor of household debt. The results indicate that an increase in financial development significantly elevates the growth of household debt in all the specifications based on alternative measures and estimation methods. Other factors were also examined and the results show that a rise in household debt depends negatively on income, unemployment, and inflation rate; and positively on a higher lending interest rate, consumption expenditure, and house price. The coefficient of financial development is the highest compared to other factors, as shown in Table 4.21, which directly indicates that the link between household debt and growth originates from financial development. The findings of this study addressed the puzzle pointed out by Mian and Sufi (2018) on the ambiguity of the positive link between financial development and household debt accumulation, which in turn affects economic growth. Scholars have also highlighted that financial institutions are encouraged to offer lending with different kinds of attractive scheme, such as eased liquidity constraint and financial liberalisation during an economic expansion. Also, major central banks might inject liquidity into the financial market (Barba & Pivetti, 2009; IMF, 2017). Hence, the growth in household debt is reflected by an expansion in financial institutions and markets.

Finally, the study examined household debt as a predictive indicator in the EWS for the systemic banking crises model. The logit regression analysis done to attain the third objective shows that household debt is positive and has a statistical probability in the model of systemic banking crises. The result implies that an increase in household debt will increase the probability that a systemic banking crisis will erupt.

This study has bridged the missing links in investigating the household debt-growth nexus, the factors leading to the rapid increase in household debt, and the role of household debt as a predictive indicator in the banking crises model. First, the results offer empirical evidence that household debt affects growth negatively. Second, institutional quality influences the impact of household debt on growth. Third, the expansion in financial activities plays an important role via its influence on household debt. Hence, the link between financial development and debt has important implications for economic instability. Finally, household debt was found to be an indicator in the EWS model of systemic banking crises. Accordingly, the results suggest the influence of household debt via the expansion of the financial side is a fundamental cause of crises. The four findings reveal that expansion of the financial side has a role in the influence of household debt accumulation on economic growth.

The results of this study have important implications for the relationship between financial development, household debt, and economic growth for better policy formulation. Given the household debt-growth nexus caused by increased financial development can elevate the downside risk to global growth, policymakers need to urgently build buffers, strengthen resilience, and tackle long-standing problems. The special focus of policy formulation should be through a combination of macroeconomic and prudential policies to

mitigate systemic risk (IMF, 2018). Details of this study's policy contributions are discussed in the following subsection.

5.3 Contributions of the Study

This dissertation contributes to the academic field in several aspects. The main contribution of this study is in investigating whether the relationship between household debt and economic growth is caused by the role of financial development or house prices. The findings contribute to the empirical literature that the expansion of financialisation forms the basis for the negative impact of household debt on growth. Numerous studies have suggested that the negative link between household debt and growth originated from the inflation of house prices. However, empirical evidence on the role of financial development is still ambiguous. Hence, this study investigated the macroeconomic factors on household debt and extended the model to include the role of financial development. The empirical findings suggest that financial development has a more pronounced effect on household debt compared to house prices. The results highlight the important contribution of this study to recent research on the influence of financialisation in the household debt-growth nexus.

Secondly, this study contributes by investigating the role of institutional quality in the relationship between household debt and economic growth by including the interaction model. The findings highlight the important role of institutional quality in the household debt-growth nexus. Interestingly, the results emphasise that household debt and institutional quality complementarily lessen a country's sluggish economy if the country has medium institutional quality and high household debt. The findings further add to the

empirical evidence by highlighting that the investigated countries should enhance their institutional quality to realise the beneficial effect of debt on economic growth. Moreover, countries with considerably high levels of institutional quality may observe a positive impact of household debt on growth. Similarly, higher levels of household debt allow a more apparent and positive effect of institutional reforms on growth.

Third, this study contributes by extending the analysis for robustness for different methods by splitting the sample. Firstly, the sample was divided into advanced and emerging economies to satisfy the concerns about the heterogeneity effect across countries. The findings for the first objective shows that the negative effect of household debt on growth is robust and consistent for both economies (see Table 4.8-4.11). However, the estimated coefficient for institutional quality is positive only for advanced economies. Also, the results show that the interaction term is positive but statistically insignificant for both economies. Moreover, the study finds interesting evidence showing that the effects of lending interest rates vary between the two sample groups. A lower interest rate causes a higher household debt accumulation in advanced economies, whereas a positive correlation is reported by the emerging economies (see Table 4.22-4.23). The study extrapolates that a higher interest rate is correlated with more borrowings in these countries when the economy is performing well, where increased interest rates and consumer spending result in higher household debt. This extrapolation is more relevant to the findings on emerging economies. Financial development remains positive, robust, and consistent for both samples. Regarding the role of household debt in the EWS for systemic banking crises model, household debt has a positive sign and is significant for advanced economies. This study's results are consistent with a recent study by Tunay et al. (2020), which argued that banking

crises in emerging economies are likely caused by systemic risk with high credit default due to economic shock. Hence, the effect of household debt in advanced economies is more prevalent.

The final contribution of the study is in demonstrating that the findings remained consistent and robust when the estimates were done after removing outliers using Cook's D. In terms of data structure, the data with influential outliers may lead to biased results, particularly in terms of the sign. Hence, the study further analysed the regression model for each objective by removing the possible outliers using Cook's D, following the suggestion by Law (2018), to produce better estimation results. The results obtained after removing the outliers remained consistent with the earlier regression results, demonstrating the robustness of the findings.

5.4 Policy Implication

The empirical evidence presented in Chapter 4 signifies that the econometric analysis suggests a number of policy-relevant conclusions. First, the findings indicate that higher levels of household debt are detrimental to economic growth. The majority of previous studies highlighted the need to deleverage or restructure debt, including raising the cost of credit. However, Eggertsson and Krugman (2012) pointed out that credit constraints, which are often imposed in times of crisis, are even more hurtful and reduce aggregate demand. Nevertheless, should lower growth caused by debt crises be cured with more debt? The question should be considered carefully since often, the macro-economy policy in the past dictated issuing more loans through financial liberalisation, innovation, and deregulation to increase the aggregate demand, but normally such policy culminated in economic

deterioration due to imbalances in the financial system. Therefore, it is important to highlight that the debt-financing for technological adoption offered to households that are actively involved in small or medium businesses or those in business and education can be worth investing in increasing the country's productivity. Furthermore, improving financial literacy is imperative to avoid debt defaults and restrict consumer leverage. Also, central banks and other government authorities can help the financial institutions in monitoring the accessibility and size of financial institutions in order to avoid the same mistake that precipitated the 2008 financial crisis.

Second, better institutional quality has a significant effect on growth. Correspondingly, the negative effect of household debt on growth worsens at lower levels of institutional quality. Even though the negative effect of household debt on growth subsides at higher levels of institutional quality, at the maximum level it will become meaningless. Policymakers can therefore propose measures that reinforce institutional quality but must be more cautious in enhancing the role of household borrowings to boost economic growth. Though household debt in reality can cause an economic downturn, policymakers can introduce measures to properly control and manage household debt through efficient institutional settings. Policymakers can propose measures that reinforce institutional quality, such as prudent debt management policy to reduce the risk of financial instability and to enhance the role of household borrowings in boosting economic growth. One of the macro-prudential policies, Basel III with a dynamic capital buffer was established in Basel, Switzerland by an international panel of regulators. Financial institutions are required to increase their capital when there are signs of unusually strong credit growth. The capital buffer aims at keeping the system resilient throughout the boom

and bust of the credit cycle. In fact, the macro-prudential policy is proven to be effective in countries which frequently practise it and also experience stronger and less volatile GDP growth (Boar et al., 2017). Thus, based on the study's findings, it is imperative for policymakers to aggressively develop their institutions to ensure the proper management of household debt through efficient institutional settings.

Third, the results of this study confirm that financial development is one of the main catalysts that cause the rapid increase in household debt, indirectly leading to economic stability. Economists agreed that finance is a curse to economic growth (see Law & Sigh, 2014; Chu & Chu 2020). Hence, the findings can help increase policymakers' understanding of the need to be cautious and responsive to the rapid surge in household debt, and the focus should be on the strategies that enhance growth to maintain the positive long-run economic benefits. For example, a maximum threshold for the loan-to-value ratio helps limit the number of households with a high debt-to-income ratio and reduce the likelihood that households will default on their loans. This strategy can also mitigate the systemic risk caused by credit growth, which is driven by asset prices.

Regarding the systemic banking crisis, the findings confirm the likelihood of a crisis exploding when household debt increases tremendously. Thus, government authorities should take precautionary steps in monitoring the changes in household debt by shaping suitable policy that would reduce the incidence of a crisis. Given that the impact of household debt is related to macroeconomic stability, policies concerning household behaviour are worth exploring. For example, policy measures focusing on borrowers should be tightened to effectively protect the household sector against unforeseen events (Alter & Mohaney, 2020).

The study's results also show the negative influence of household debt on economic growth and heightened the probability of banking crises for advanced economies, whereas insignificant for emerging economies. In addition, the increase in household debt is insignificant in signaling the banking crises in emerging economies as discussed, in which the currency crises mainly followed banking crises. However, the rapid build-up of household debt is witnessed in the emerging economies in the aftermath of financial crises urge for policy concerns. The empirical evidence from emerging economies also sheds policy implications on how to prevent the possible downside risk of fast leverage build-up to sustain economic growth. Understanding the result of factors that caused the rapid increase in household debt as discussed in section 4.3.4 can offer several policy recommendations. Hence, appropriate policy formulation for heterogeneous countries' characteristics must be observed and considered carefully to ease the effect of household debt on growth.

At the outset, the cause of a rapid increase in household debt in advanced economies was influenced by factors such as financial development, hike in house prices, increased consumption, lower interest rate, and negative income. In many studies, the cause that leads to the negative effect of household debt on economic growth was accompanied by the inflated asset prices and sudden income shock due to capital outflows (Park et al., 2018) consequently, led to household loan default. Also, the finding shows that the rising in household debt significantly increases the chances for banking crises to occur in advanced economies. Samad et al. (2020) explain that the chances for crises to erupt are more pronounced when there is currency depreciation (related to capital outflows) and a surge in house prices.

Furthermore, it is important to understand the true facts of why the advanced economies faced the negative influence of rising household debt. The reason was due to excess savings in emerging market economies made the advanced countries' assets more attractive to investors, driving up house prices and easy access to financing with a lower interest rate (Caballero et al., 2008) and hence cause a rapid increase in household debt, consequently distort the economic balance (Alter & Mahoney, 2020). The emerging economies may inexperienced the huge capital inflows on asset investment during that time (pre-global financial crisis 2008), but currently, the emerging economies are heavily dependent on the foreign direct investment, which the need for careful measures if the investment may influence any factors that lead to rising household debt.

Understanding this scenario, urge careful policy measures upfront for emerging economies in mitigating any unexpected economic changes as learning lessons from advanced economies' experiences. Among the measures can be taken is related to prevention of household debt default, followed by capital inflows and outflows as well as the housing market because the sudden outflow of capital may lead to bank runs and banking crises (Elkhuizen et al. 2017). The emerging countries may strengthen the economic and financial resilience to external shocks, including enhanced macro-prudential policy frameworks and exchange rate flexibility. These can be handled through macroeconomic policies, sound financial supervision and regulation, and strong institutions (IMF, 2017).

On the other hand, institutional quality plays a significant role as a moderator in the relationship of household debt-growth nexus based on the 43 countries' analysis, although the results are insignificant as a moderator when analyzing using a split sample of advanced

and emerging economies. Still, considering the strong institutions' is a wise strategy in improving economic growth in some cases of individual countries such as Scandinavian countries, the government flexibilities in introducing the policy initiatives found to be useful in tackling the problems associated with household debt (IMF, 2012). Besides, the results also indicate that the effect of household debt on growth depends on the balance between financial integration and institutional capacity to withstand any consequences of macroeconomic and financial risks over immediate and medium-term, which directly points towards the important role of policy formulation. Hence, a strong institution is required and shall be improved to reduce the downside risk of a rapid build-up of household debt that emerging economies can follow those case in introducing a few new policies targeted at household debt. For example, the policymaker in emerging economies should develop the institutional capacity to deal with risks from the issuance of securities backed by an asset, including formulating comprehensive medium-term debt management strategies.

5.5 Limitations and Recommendations for Future Research

Since the study analysed a small sample size that merges advanced and emerging economies, future studies can conduct empirical analysis by focusing on either one of the advanced or emerging economies. Secondly, the current study realises that future study can covers analysis in terms of non-linearity relationship between household debt and growth and threshold values as well as quintile regression on advanced and emerging economies. On the other perspective, the study extends the basic analysis on the interaction effect of household debt and financial development (HD*FD) in the growth model to signify the role

of FD and HD on economic growth. The finding shows that the role of financial development is insignificant in influencing the economic growth as well its role as moderating effect (refer to attachment 7.6). Despite the weak correlation of financial development as moderator in the growth model, this can be discussed further in future research in variation form of specifications (i.e. different estimation methods, alternative variables and split sample) since it is found to be significant catalyst for rapid increase in household debt in this study.

Apart from that, the study used the life cycle model, focusing on the working population as one of the factors that determine the change in household debt. Other studies may wish to include different demographic attributes to the household debt changes by using micro-dataset and analyse different demographic changes in the household debt model by employing a panel dataset. In addition, the issue of ageing population is gaining popularity as it has been statistically shown to be an increasing trend in most advanced countries. Thus, future empirical research is required to solve the puzzle on longevity and whether the ageing population will accumulate more debts, which will impede the output growth.