FOREWORD

Recent developments, such as the rapid advancement under the umbrella of the Digital Revolution 4.0, have led to increasing interest in new forms of financial intermediation. This trend has been followed by tremendous changes in the scope of, and prospects for, financial intermediation and its implication for monetary policy globally, including SEACEN member economies. One interesting phenomenon is that many banking activities related to financial intermediation are increasingly being conducted by non-bank financial institutions (NBFIs), which are also known as shadow banking institutions. They include trust companies, securities companies, bank wealth management arms, entrusted private entities and online platforms such as peer-to-peer (P2P) lending and crowdfunding. This bank-like financial intermediation by shadow banking institutions is generally supported by Financial Technology (FinTech). Financial innovation has created new financial instruments, especially for intermediating sources of funds, which may be defined as new forms of financial intermediation. This research study uses this definition to analyse current conditions and prospects for new forms of financial intermediation by shadow banking institutions in four ASEAN countries.

Unlike banking institutions, which are subject to very stringent regulations and tight supervision by financial supervisory agencies, many shadow banking activities are more lightly (if at all) regulated and less tightly supervised. Most of the existing financial regulations are still focused on the banking system. Hence, one reason why many bank-like intermediary activities are conducted by shadow banking institutions is simply to reduce costs by engaging in regulatory arbitrage. On the plus side, shadow banking activities have broadened financial intermediation/services not only to the banked but also to unbanked people, thus benefiting all of society. This includes providing financial access to the unbanked part of the population as well as small businesses, thus enhancing financial inclusion.

That being said, this phenomenon is not without possible negative consequences for financial sector stability as well as the economy as a whole. The emergence of financial risks may result in a higher threat of contagion across sectors and economies, arising from riskier intermediation activities and proliferating interconnectedness with regulated banks. This could very well pose dangers to financial system stability which heightens the probability of financial crises. Financial innovation, regulatory arbitrage and FinTech advancement are some of the main factors behind the rapid growth of shadow banking activities. These activities can cause the growth of the money supply to be faster and uncontrollable, with implications for the effectiveness of monetary policy. In light of this, the central bank may be unable to manage domestic liquidity or the broad money supply which could potentially lead to financial instability.

Nevertheless, these new forms of financial intermediation can herald a bright future for the ASEAN-4 as financial institutions are incentivised to adopt financial technology and develop new forms of financial intermediation. These trends are expected to lead to the development of broader and deeper varieties of financial products which could improve financial inclusion. While the growth of this phenomenon is accompanied by substantial innovations and benefits, it also creates heightened risks which need to be mitigated.

While there are opportunities for NBFIs to create various new products, in the absence of regulations and oversight by the authorities, this may lead to regulatory arbitrage. Therefore it is recommended that the financial authorities step up their efforts to improve regulation and supervision by bringing shadow banking entities under the regulatory umbrella, to better understand their business models as well as to obtain the necessary data to boost regulations or other policy responses.

This SEACEN research study, taken up by Bank Indonesia, is aimed at investigating the development and prospect for new forms of financial intermediation in four ASEAN countries (Indonesia, Malaysia, Thailand and Singapore), as well as to analyse their implications for monetary policy. The analyses of the project benefitted from focus-group discussions with officials of the FinTech Office of the Financial Supervisory Authority in Indonesia (OJK) and two related offices within Bank Indonesia, i.e., the Macroprudential Policy Department and the FinTech Office (BI), as well as officials from Bank Negara Malaysia, Bank of Thailand and the Monetary Authority of Singapore. This study looks at five important issues related to NBFIs which perform shadow banking activities in the respective four countries, namely (i) the definition of shadow banking activities, (ii) how these entities are regulated, (iii) the distinction between shadow banking entities and NBFIs, (iv) the potential risks emanating from shadow banking activities of NBFIs, and (v) the impact of monetary policy on the shadow banks.

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Dr. Ole Rummel
Director, Macroeconomic and Monetary Policy Management
The SEACEN Centre
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EXECUTIVE SUMMARY

1. This SEACEN research topic was awarded to Bank Indonesia in 2019 to investigate the development and prospects of new forms of financial intermediation in four Southeast Asian (ASEAN) countries, namely Indonesia, Malaysia, Thailand and Singapore, as well as to analyse their implications for monetary policy. It elaborates on the relevant literature from various sources, including focus group discussions with colleagues from the FinTech Office of the Financial Supervisory Authority in Indonesia (OJK) and two related offices within Bank Indonesia, i.e., the Macroprudential Policy Department and the FinTech Office. This study also elaborates on five important issues related to non-bank financial institutions (NBFIs) which perform shadow banking activities in the respective four Southeast Asia countries, namely (i) the definition of shadow banking activities, (ii) how these entities are regulated, (iii) the distinction between shadow banking entities and NBFIs, (iv) the potential risks emanating from shadow banking activities of NBFIs, and (v) the impact of monetary policy on the shadow banks through the asset price channel.

2. An encompassing definition for these new types of financial institutions has proved elusive until 2014, when the Financial Stability Board (FSB) defined shadow banking activities as credit intermediation involving entities and activities (fully or partially) outside the regular banking system. Meanwhile, the International Monetary Fund (IMF, 2014) outlined that shadow banking could be broadly divided into three categories: entity-based, activity-based and a mixture of the two. From the available options, this research study will focus on the "activity-based" definition, which can be considered the most appropriate interpretation for defining shadow banks in the selected ASEAN countries. Basically, the "activity-based" definition separates shadow banks from commercial banks in the intermediation process. Consistent with global trends, the shadow banking sector in Asia experienced strong growth in the run-up to the Great Financial Crisis (GFC), dropping off somewhat in 2008, and has since continued to grow in many ASEAN economies, albeit at a reduced pace. The rapid growth of these novel institutions is driven by regulatory arbitrage and, above all, the emergence of financial technologies.

3. The development of new forms of financial intermediation is proliferating. We define a new form of financial intermediation as a shadow banking activity accompanied by the use of financial technology, whereby shadow banking is an intermediary activity outside the regular banking sector. This development is reflected in both the increase of the share of shadow banking assets against the total assets of financial corporation and against gross domestic product (GDP), which is accompanied by the rise in the share of broad money to GDP. Financial technology (FinTech) is often seen as a recent amalgamation of financial services and information technology. Financial technology plays a special role in the modern transformation of the financial system in that it helps to improve financial activity and increase its profitability. The main component of financial technology is its capability in creating financial innovations – the development of the accounting background, the creation of banking and modern payment systems,

the introduction of complex derivatives and financial and credit instruments and modern financial technologies. These are not only designed to increase profitability, but also to change the financial system more fundamentally. On the other hand, there is the negative impact of the introduction of new financial technologies associated with the increased possibility of cyberattacks, which constitutes a major threat to financial stability.

4. In ASEAN, the majority of countries are emerging or developing economies, where many individuals and corporations may not get the benefits of banking access for funding sources. Moreover, there is an interconnection between the banking sector and NBFIs in ASEAN through the establishment of banking subsidiaries to support financial banking activities. Even though it is still marginal, the increases in the share of NBFIs to GDP show the rising role of shadow banking in the economy in several ASEAN countries. The new forms of financial intermediation expose the entry points for financial technology into the environment of financial institutions in ASEAN as well as make the financial transactions easier. However, the development of FinTech can also lead to cyber risks. In reality, several shadow banking activities in ASEAN have yet to be supported by the appropriate regulations because they are not considered to carry out credit intermediation and thus, their activities do not construct systemic risk. The caveat or limitation of shadow banking data in each ASEAN country is the main problem of this study. Thus, this study does not include specific monetary policy recommendations. It just provides an indicator to the central bank that with the limitation, the policy interest rate in the most of the ASEAN-4 countries does not have a significant effect on the interest rates of the biggest shadow bank in each country. As the sample/data taken is based on only one of the largest asset management companies in each country, the results of the analysis cannot be generalized. However, this finding makes it important for the central bank to be vigilant when designing monetary policy in the future. Of course, further research, when more comprehensive shadow banking data is available, is needed to derive better recommendations so that central banks would be able formulate more targetted monetary policies.

5. In Indonesia, shadow banking entities can be classified into two groups, namely trust companies and security or wealth management companies. The former encompass insurance, pension funds, microfinance, pawnshops, guarantee companies and FinTech lending. Meanwhile, security and wealth management companies can be divided further into two entities. Non-bank financial institutions which perform shadow banking activities have interconnection with regular banking through their funding and borrowing activities. We also find that regular banks establish subsidiaries which engage in shadow banking activities. In general, NBFIs that perform shadow bank activities conduct their operations through bond purchases and loans in the form of securities lending, repurchase agreements, credit derivatives and credit enhancements. NBFIs in Indonesia are not backed by Bank Indonesia with respect to liquidity mismatches and by the Indonesia Deposit Insurance Corporation (LPS) with respect to bank liquidation. Nevertheless, shadow banking regulation has developed quite a bit, and the Financial Services Authority (OJK) oversees its activities. In Indonesia, it is mainly NBFIs (with the exception of mutual fund companies) that are performing shadow banking activities as classified by the FSB (2014), but since they do not conduct credit intermediation activities, the risks that are generated from their activities do not

pose systemic risks and since they fall under an appropriate regulatory regime, they are no longer categorised as shadow banks.

6. Furthermore, the new forms of financial intermediation have an undoubtedly positive prospect in Indonesia, which has an abundant and growing number of internet users. This encourages financial institutions to adopt financial technology and develop new forms of financial intermediaries. But the growth of this phenomenon is accompanied by out-of-the-box innovation and benefits that create more heightened risks which need to be mitigated. The rapid growth of new forms of financial intermediation has an implication for the effectiveness of monetary policy. Using the monetary policy rate, we tested the significance of the policy rate in relation to one shadow bank institution. We find that monetary policy has no significant impact on the shadow bank's return but has a significant impact on the specific shadow bank's asset under management growth. The BI deposit rate has a positive impact on the shadow bank's products mainly allocated on the equity side and a negative impact on the products allocated in money markets. Meanwhile, the interbank rate has an impact on the products which are mainly allocated in debt securities.

7. Thailand's financial system comprises a wide range of institutions, which can be grouped into three broad categories: banks, non-bank financial institutions (NBFIs), and specialised financial institutions (Shrestha, 2007). Banks include domestic commercial banks, retail banks, branches of foreign banks and subsidiaries, while NBFIs consist of finance companies, credit frontier companies, cooperatives, insurance companies, securities companies, mutual funds, pension funds and asset management companies. The specialised financial institutions group comprises deposit taking and non-deposit taking specialised institutions as well as institutions for financial sector resolution. The NBFIs' total assets-to-GDP ratio shows the highest value among the countries considered in this study. It also shows an upward trend, from 31.5% in 2007 to 48.9% in 2016. The increasing number of NBFIs' total assets in this country is in tandem with the growth level of its assets. Moreover, since the mutual fund market holds the largest asset share in financial markets overall, we regard these institutions as depicting shadow banks in Thailand. Most of the leading domestic banks possess subsidiaries that are mutual fund institutions. The top four mutual fund companies are Kasikorn Asset Management Company (with a 20% share of asset under management), SCB Asset Management (18%), BBL Asset Management (14%) and Krung Thai Asset Management (14%). NBFIs in Thailand are mainly conducting shadow banking activities as classified by the FSB (2014), but since they do not conduct credit intermediation activities, the systemic risks that are generated by their activities are not significant and as they fall under the appropriate regulatory regime, they are no longer categorised as shadow banks.

8. The prospects of new forms of financial intermediation emerging have been planned and catered for by the Bank of Thailand (BOT) as part of the FSMP III regulation. One of FSMP III's objectives is to improve the efficiency of the financial system and bolster electronic payment and financial services by developing new technological innovation and boosting the competitiveness of financial service providers to assist market enlargement. Here, BOT encourages financial institutions to provide more diversified electronic financial products and services. Not only that, but the BOT will

also promote the National e-Payment Master Plan introduced by the government and will support the use of electronic transactions through the augmentation of consumer confidence and financial literacy. Nevertheless, the development of this initiative also has a negative impact since it can create systemic risks that need to be mitigated – reducing the effectiveness of monetary policy. Using the monetary policy rate, we examined the effect of the policy rate on one shadow bank's return as well as asset growth. Based on our assessment, changes in administrative and price-based monetary policy tools do not affect the shadow banking interest rate and the growth of assets in Thailand. Administrative monetary policy tools are represented by the policy rate, lending rate and deposit rate whereas the price-based monetary policy tool is represented by the interbank interest rate.

9. The transformation of traditional credit activities in Malaysian banks have expanded the credit intermediation chain and enabled banks or entities owned by banks to conduct shadow banking activities. The growth of shadow banking in Malaysia began in the 1990's, contributing in a complementary manner to the financial system and completing the role of banking institutions. The rapid growth of M3 in Malaysia began after the GFC in 2008 and was mainly caused by the entry of FinTech into Malaysia. The latter increased both households' awareness and confidence in depositing their money in other banking institutions. Up to 2018, the size of M3 in Malaysia was almost five times that of M1. Furthermore, enhancing FinTech in Malaysia increases credit extension and facilitates credit creation by the NBFIs operating in the financial system. Therefore, the existence of FinTech creates new technology in old non-bank entities or establishes new entities that are based on FinTech, through Peer-to-Peer (P2P) financing and equity crowdfunding. In aggregate, the market share of Malaysian NBFI assets is quite large, amounting to 39.7% in 2018, rising very significantly from 27.0% in 2000. Provident and pension funds and the fund management industry contribute the largest proportion of total NBFI assets in Malaysia, accounting for approximately 18.4% and 14.0% of total assets in the Malaysian financial system in 2018 respectively. NBFIs in Malaysia are mainly performing shadow banking activities as defined by the FSB (2014), but since they are under the purview of the appropriate regulatory regime, do not conduct credit intermediation activities and the risks generated from their activities are not systemic, they are not categorised as shadow banks.

10. To examine the impact of monetary policy rates on shadow banking in Malaysia, we chose one of the largest asset management companies in Malaysia, namely Affin Hwang Asset Management Bhd. In 2018, it was among the top three largest players in Malaysia, and its importance has grown rapidly. At the end of December 2018, it managed over RM47 billion in assets for retail and professional clients. Based on our estimation, the monetary policy rates (overnight policy rate, lending rate and deposit rate) have a significant negative impact on the mutual fund's return. In addition, we use two types of funds of Affin Hwang's assets, namely Affin Hwang Select Dividend Fund to capture equity funds and Affin Hwang Aiiman Income Plus Fund to proxy fixed income funds. The results suggest that the interbank rate is positively and statistically significantly affecting Affin Hwang's equity fund assets. On the other hand, all interest rates have no significant impact on Affin Hwang's fixed income fund assets.

11. The very well-developed financial system in Singapore has led this country to be regarded – together with Hongkong – as a financial hub amongst the ASEAN members. It is marked by the use of M3 as the representation of broad money that transforms liquid money into money market instruments, commercial paper, electronic currency and so on. The movement of M3 and inflation has become looser over time. Particularly in 2008, M3 and inflation have become unrelated and thus inflation is not entirely a monetary phenomenon. It also indicates that the government cannot target broad money velocity. The difficulties encountered by the government in controlling broad money may have occurred due to the intervention of cutting-edge technology reflecting Singapore's level of financial development or new forms of financial intermediation. Singapore's shadow banks share similar definitions and scope to the FSB's (2014) classification, in that most entities are in Economic Function 1 and Economic Function 5. Singapore's shadow banks consist of several types of entities, namely, collective investment schemes, money market funds, hedge funds and structured finance vehicles. The empirical result from Temasek Holdings show an insignificant relationship with the policy rate, interbank rate, deposit rate, lending rate and nominal effective exchange rate index. But while the emergence of FinTech systems are welcomed in the country, FinTech still cannot cross the border posed by banking licences which are required for lending or securities dealing

12. To assess the effect of changes in monetary policy on shadow banking in Singapore, we use the effective annual returns of one of the largest asset management firms in Singapore, namely Temasek Holdings, as a proxy for the shadow banking interest rate in Singapore. We included exogenous control variables that involve interest rates: the interbank rates to measure the price-based monetary policy tool, the policy rate, the lending rate and the deposit rate to capture administrative monetary policy tools as well as the nominal effective exchange rate (NEER). The results suggest that only the policy rate has a significant negative effect on Temasek Holdings' returns. The small contribution of monetary policy tools may come from other factors. The negative association between Temasek Holdings' returns and price-based monetary policy tools means that any increase in the policy rate will lower Temasek Holdings' returns. This argument might be able to explain the insignificant result of interbank interest rates and monetary policy tools which are not effective in influencing the shadow banking market since there is a lack of connection between them. Besides, alterations in the interbank interest rate have significant positive effects on Temasek Holdings' equity assets under management. This is in line with the argument that Singapore's interbank rate is well-established and effective in influencing inflows into Temasek Holdings' equity assets. On the other hand, this finding cannot be generalised due to data limitations. As a consequence, we are only able to use one asset management company in our sample, even though it is the largest in Singapore.

POLICY RECOMMENDATION

1. Shadow banking uses reduced costs and the lower burden of regulation as the main arguments to expand their range and scope at the expense of commercial banks. Shadow banks lack access to a depositor base, sources of emergency liquidity from the central bank and public sources of insurance. Consequently, systemic risk can be created as a result of the lack of access to public liquidity or to the public sector in an emergency. There are two crucial potential risks emerging directly from the shadow banking sector: leverage risk and maturity and liquidity mismatch. These risks may be amplified as they include the potential for excess leverage, amplification of procyclicality, instability of wholesale funding, modern-style bank runs, transmission of systemic risk and regulatory arbitrage and circumvention. Furthermore, the excess liquidity available in the shadow banking system has incentivised households to incur much higher debt levels because of less stringent loans conditions. Instead of the households' economic situation improving; this results in graver poverty and more bad loans, also draining capacity from the shadow banks.

2. The share of shadow banks has been steadily increasing over time due to the growth of financial technology. But the expansion of FinTech innovations and the accompanying changes to the financial landscape will eventually bring with them new types of economic and financial risks. The regulator will face evolving implications of unprecedented systemic financial stability risks. There are other potential threats related to the emergence of FinTech companies since they leverage the use of modern software and the internet to provide financial services at lower prices. Some very good complex and advanced examples of this include the blockchain and cryptocurrencies. Their anonymity and decentralised nature can be harmful as they can be used for illegal purposes such as money laundering, tax evasion and illegal transactions. Another potential threat are cyberattacks that can put bank customers' data privacy at risk.

3. New forms of financial intermediation, which we define as new shadow banking activities if they are accompanied by financial technology, have proliferated significantly over time. While some of these activities are regulated by central banks or appointed regulators, there still appears to be a lack of regulations and supervision for these new entities, especially the ones that use and develop such financial technology. Financial technology companies are savvy and able to identify regulatory gaps however small they appear. Thus, they can develop their business by exploiting regulatory arbitrage. Therefore, we recommend that the central banks or appointed regulators step up their efforts to improve regulations and supervision by bringing shadow banking entities under the regulatory umbrella, to better understand their business models as well as to obtain the data necessary to boost regulations or other policy responses. Furthermore, the existence of FinTech should be "legitimised" and covered by suitable regulations. Otherwise, the lack of regulation may encourage risky behaviour.

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