THAILAND

FINANCIAL SECTOR ASSESSMENT

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A joint IMF-World Bank mission visited Thailand from November 1 to 16, 2018, and February 6 to 22, 2019, to update the findings of the Financial Sector Assessment Program (FSAP) conducted in 2008.[1] This report summarizes the main findings of the mission, identifies key financial sector vulnerabilities, and provides policy recommendations.

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GLOSSARY

AMC	Asset Management Company
AML/CFT	Anti-Money Laundering and Countering the Financing of Terrorism
AMLO	Anti-Money Laundering Office
AUM	Asset Under Management
BAHTNET	Bank of Thailand Automated High Value Transfer Network
BCP	Basel Core Principles for Effective Banking Supervision
BIS	Bank for International Settlements
BoT	Bank of Thailand
BOTA	Bank of Thailand Act
CAD	Cooperative Audit Department
CAR	Capital Adequacy Ratio
CCP	Central Counterparty
CMSB	Capital Market Supervisory Board
CPD	Cooperative Promotion Department
CPMI	Committee on Payments and Market Infrastructures
CTPF	Counter-Terrorism and Proliferation of Weapons of Mass Destruction Financing
CU	Credit Union
D-SIB	Domestic Systemically Important Bank
DA	Derivatives Act
Daily FI	Daily Fixed-Income
DOPA	Department of Provincial Administration
DPA	Deposit Protection Agency
DSTI	Debt Service to Income
DTI	Debt to Income
ELA	Emergency Liquidity Assistance
ERM	Enterprise Risk Management
EVE	Economic Value of Equity
EWI	Early Warning Indicator
FC	Fund Committee
FDI	Foreign Direct Investment
FIBA	Financial Institutions Businesses Act
FIDF	Financial Institutions Development Fund
FIF	Foreign Investment Fund
FIPC	Financial Institutions Policy Committee
FMI	Financial Market Infrastructure
FPO	Fiscal Policy Office
FSAP	Financial Sector Assessment Program
FSC	Financial Stability Committee
FSI	Financial Soundness Indicator
FSU	Financial Stability Unit
GaR	Growth at Risk

GDP	Gross Domestic Product
GFC	Global Financial Crisis
ICA	Insurance Commission Act
ICR	Interest Coverage Ratio
IF	Investment Fund
IFRS	International Financial Reporting Standard
ILF	Intraday Liquidity Facility
IOSCO	International Organization of Securities Commissions
IRB	Internal Ratings-Based
IRRBB	Interest Rate Risk in the Banking Book
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LTV	Loan to Value
MER	Mutual Evaluation Report
MMF	Money Market Fund
MMoU	Multilateral Memorandum of Understanding
MoAC	Ministry of Agriculture and Cooperatives
MoF	Ministry of Finance
NAV	Net Asset Value
NBFI	Non-Bank Financial Institution
NCB	National Credit Bureau
NDID	National Digital ID
NII	Net Interest Income
NPF	National Pension Fund
NPL	Non-Performing Loan
NSFR	Net Stable Funding Ratio
OAP	Old-Aged Pension
OIC	Office of Insurance Commission
ORSA	Own Risk and Solvency Assessment
OTC	Over the Counter
P2P	Peer to Peer
PCA	Prompt Corrective Action
PEP	Politically Exposed Person
PF	Proliferation Financing
PFMI	Principles for Financial Market Infrastructures
PLCA	Public Limited Companies Act
PPA	Prompt Preventive Action
PVD	Voluntary Provident Fund
PVP	Payment Versus Payment
RAM	Risk Assessment Matrix
RMF	Retirement Mutual Fund
ROE	Return on Equity
RWA	Risk Weighted Assets

SEA	Securities and Exchange Act
SEC	Securities and Exchange Commission
SEPO	State Enterprise Policy Office
SET	Stock Exchange of Thailand
SFI	Specialized Financial Institution
SME	Small- and Medium-Enterprise
SML	Special Mention Loan
SOE	State Owned Enterprises
SSF	Social Security Fund
STR	Suspicious Transactions Report
TBMA	Thai Bond Market Association
TCC	Thrift and Credit Cooperative
TCH	Thailand Clearing House
TD	Top-Down
TF	Terrorist Financing
TSD	Thailand Securities Depository
WEO	World Economic Outlook

PREFACE

An IMF and a World Bank team visited Thailand during November 1-16, 2018 and February 6-22, 2019, to conduct an assessment under the Financial Sector Assessment Program (FSAP). The scope of the FSAP was agreed during a team visit to Thailand June 12-15, 2018. The team was led by Brett Coleman (World Bank) and Alejandro López Mejía (IMF); Ana Maria Aviles (World Bank) and Sumiko Ogawa (IMF) were the Deputy mission chiefs. The team comprised Juan Buchenau, Dorothee Delort, Katia D'Hulster, Heinz Rudolph, Matthew Saal, Gynedi Srinivas (all World Bank), Pierpaolo Grippa, Kenichiro Kashiwase, Suchitra Kumarapathy, Miklos Vari (all IMF), Thomas Finnell, Mike Grist, Jonathan Katz, Vicente Lazen, Geof Mortlock, and Jose Tuya (external experts). The mission assessed financial sector risks and vulnerabilities, the quality of financial sector supervision, and financial safety net arrangements, and analyzed the funded pension system, FinTech, and the thrift and credit cooperatives and credit unions.

The mission met Mr. Veerathai Santiprabhob, Governor of Bank of Thailand; Mr. Rapee Sucharitakul, Secretary-General of The Securities and Exchange Commission; Mr. Suthiphon Thaveechaiyagarn, Secretary General of the Office of Insurance Commission; Mr. Apisak Tantivorawong, Minister, Ministry of Finance; Mr. Wiwat Salyakamthorn, Deputy Minister, Ministry of Agriculture and Cooperatives; senior staff of the financial sector regulatory agencies and relevant ministries, as well as private sector representatives, to seek views and collect data and information to facilitate the mission's task.

The previous FSAP took place in 2008. The status of implementation of its Key Recommendations can be found in Appendix II.

The team would like to thank the authorities for the excellent cooperation, fruitful discussions, and kind hospitality.

EXECUTIVE SUMMARY

Thailand's strong, even-handed regulation and supervision of the financial sector, including its high level of compliance with international standards, have supported the development of a deep, diverse, and inclusive financial sector, though significant challenges remain. Financial sector assets grew to 271 percent of GDP at end-2017 from 183 percent in 2007. Assets of banks represented 46 percent of total financial sector assets at end-2017, down from 56 percent in 2007. The assets of SFIs, financial cooperatives, mutual funds, and insurance companies have grown faster than banks' assets. Financial inclusion has continually improved, with 82 percent of adults in Thailand having a formal financial account as of 2017, up from 78 percent in 2014 and 73 percent in 2011. This compares with a coverage of 71 percent in the East Asia and the Pacific region and 73 percent among upper middle-income countries. However, among adults in the richest 60 percent of households, 16 percent don't have an account, against 22 percent of those in the poorest 40 percent of households.

Relatively high household indebtedness and some signs of weaknesses in corporates and small-and-medium enterprises are the key financial vulnerabilities in Thailand. Weaker-than-expected growth in China and advanced economies, sharp rise in risk premia, and entrenched low inflation would adversely impact the financial system. Despite these risks, the banking sector, which accounts for a large share of the financial system, is resilient to potential shocks, including severe shocks. Results of stress tests and sensitivity analysis indicate that the solvency and liquidity of the largest banks can withstand an adverse scenario broadly as severe as the Asian financial crisis. While three banks would deplete their capital conservation buffer, recapitalization needs would be minimal. Banks would be also resilient to sizable withdrawals of liquidity. The state-owned Specialized Financial Institutions (SFIs) appear to be vulnerable to asset concentration and interest rate risk, but preliminary results suffer from data limitations and need to be explored further. Systemic and contagion risks stemming from interlinkages across banks and nonbanks are limited.

The oversight of the financial system is generally strong. There is a high level of compliance with international standards, which a) strengthens the capacity of supervisors to identify and address gaps and vulnerabilities related to financial stability, and b) supports further deepening and development of the financial sector. While there is no objective evidence of lack of independence, the risks to operational independence of all supervisory agencies can be mitigated by reducing the involvement of the Ministry of Finance (MoF) in prudential issues and ensuring that each agency has full control over decisions that lie within its areas of responsibility (e.g., removing representatives of other supervisory agencies from its own boards or committees). This reform requires amendments to the Bank of Thailand Act (BOTA), the Insurance Commission Act (ICA), and the Securities and Exchange Act (SEA). Increased independence should be accompanied by enhanced accountability of the supervisory agencies to an appropriate legislative body (e.g., a subcommittee of the Senate) and by stronger cooperation among the supervisors. An overarching coordination body outside the Bank of Thailand (BoT) should be created (with no legal powers to direct or approve member agency decisions but equipped with the power to make recommendations with a "comply or explain" mechanism), with representatives of all supervisory agencies, the Ministry of Agriculture and Cooperatives (MoAC), the

Deposit Protection Agency (DPA), the Financial Institutions Development Fund (FIDF) and the MoF. It should have no power to issue directions to member agencies. Other recommendations include:

- **Oversight of banks**. While bank supervision is strong, loan management practices (including the definition of restructuring and rescheduling), the preventive and corrective framework and sanctioning powers of supervisors, and the regime for Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT) can be further strengthened.

- **Oversight of insurance companies.** Development plans put in place by the Office of Insurance Commission (OIC) in recent years have promoted business opportunities while protecting policyholders and enhancing the supervisory regime. Given the recent changes – which have resulted in important changes in governance and practices in the sector and have generated significant new information – enhanced supervisory processes on the part of the OIC will be necessary. Licensing and suitability requirements should also be updated to assure clarity, consistency, and timeliness of licensing decisions and procedures, and suitability requirements for beneficial owners of insurers should also be strengthened.

- **Oversight of Financial Market Infrastructures.** BAHTNET (the real-time gross settlement system) and the Thai Securities Depository (TSD) have sound operation and comprehensive risk management frameworks. However, the collateral framework of BAHTNET could be reviewed and improved to prevent participants from pledging their own securities as collateral and to have an independent validation of the haircut methodology and concentration limits. The risk management framework of TSD could be broadened to cover general business and investment risks. The legal framework could be strengthened to protect the securities balances of depositors and customers held in TSD's name in the event of TSD's bankruptcy and to clearly establish the beneficial ownership rights of securities belonging to depositors and investors. In addition, investment risk and operational risks in TSD could be addressed by holding investments in its own name rather than that of the Stock Exchange of Thailand (SET). Further, periodic tests of business continuity plans for BAHTNET and TSD should be carried out to ensure completion of settlement with specific scenarios, taking into account interdependencies between TSD, BAHTNET, and TCH.

- **Oversight of capital markets.** The Securities and Exchange Commission (SEC) has significantly improved its level of implementation of the IOSCO Objectives and Principles of Securities Regulation. A recent decision will require that state-owned enterprises (SOEs) listed on the SET be audited by licensed external auditors, enhancing the credibility of such audits. It is recommended that the SEC undertake a review of the rules of the SET and that the SEA be further amended, including to enable the SEC to institute civil proceedings for any violation of the SEA or SEC regulations. The SEC should also (i) direct the Thai Bond Market Association (TBMA) to revise its rules on pre-trade transparency and calculate its daily yield curve using only reported trades, and (ii) develop a roadmap, together with the BoT, to implement mandatory centralized clearing of over-the-counter (OTC) derivatives contracts.

A neutral regulatory and supervisory framework for commercial banks and SFIs is strongly recommended. The supervisory responsibility for the SFIs has been partly shifted to the BoT, and a

structured framework for their prudential supervision is being developed. While there is a general perception that the BoT is supervising SFIs the same as commercial banks, there are significant differences (e.g., BoT needs approval of the MoF to issue regulations related to SFIs or take corrective actions). Therefore, it is key to prepare a roadmap with milestones for bringing the regulation and supervision of the retail-deposit-taking SFIs at par with those for commercial banks.

The macroprudential framework and policies can be further strengthened. It is recommended to clearly define the roles of the Financial Institution Policy Committee (FIPC) and the Monetary Policy Committee (MPC) to help ensure that systemic risks are primarily dealt with through macroprudential tools. It is important to: (i) remove the requirement for approval by the MoF for macroprudential measures of the BoT; (ii) assess whether the largest deposit-taking SFIs should be designated as domestic systemically important banks (D-SIBs); (iii) minimize leakages by extending macroprudential measures to cover all relevant institutions and instruments; and (iv) expand tools as needed.

Despite progress in recent years, the crisis management framework still has gaps. Thus, it is important to: (i) strengthen early warning indicators and early intervention arrangements; (ii) develop a resolution toolkit and a framework for resolvability assessments and resolution planning; (iii) review and amend relevant legislation to align resolution powers and safeguards with the Key Attributes; (iv) limit the need for government approval for emergency liquidity assistance to cases where a government indemnity is requested; and (v) enhance deposit insurance, including by enabling funding of purchase-and-assumption transactions and establishing a contingent funding line with the MoF or BoT (if the latter, indemnified by the government). Currently, policy decisions in the area of crisis management are taken by the FIPC, which includes representatives from the MoF, other financial regulators, and external experts. The responsibility for resolution and wider crisis management decision making should be moved from the FIPC to a separate body within BoT (comprising staff only from the BoT and FIDF) to strengthen decision making by those with responsibility and expertise in resolution. Cross-agency coordination of crisis management is best achieved through the establishment of a Financial Stability Committee, comprising the heads of all relevant agencies.

The private, funded pension system is arguably the least developed segment of Thailand's financial sector and is inadequate to the needs of an aging population, as incentives lead to low participation, inappropriate investment strategies, and insufficient pensions. There is a low participation in the collective, private Voluntary Provident Fund (PVD) as tax incentives do not encourage such collective plans. Current incentives also lead to overly conservative investments, resulting in inadequate pensions for retirees. The payout phase of the PVD scheme includes incentives for participants to take lump-sum payouts at retirement, leading to significant risk of old-age poverty. The authorities should revise the incentive structure to favor collective PVD plans over individual plans, encourage default investment portfolios that provide adequate pensions, set inflation-linked annuities as the default payout option (which would also contribute to the development of the long-term fixed-income market), and limit lump-sum payouts. While the planned legislation to introduce a mandatory private pension scheme could be a positive development to expand coverage, the authorities should ensure that the governance structure limits government involvement in the investment decisions of the new scheme.

Financial cooperatives, such as Thrift and Credit Cooperatives (TCCs) and Credit Unions (CUs), are important providers of financial services in Thailand, serving over 4 million members and accounting for 16 percent of household debt. The positive reported financial performance of cooperatives could be masking and even contributing to over-indebtedness of many of their members. On one hand, TCCs use lending practices that allow for a systematic rollover of debt, which results in underestimated NPLs. On the other, TCCs contribute to over-indebtedness by not reporting to the National Credit Bureau, which increases risks to other financial institutions that lend to the same customers and do not know their full debt burden. The authorities should consider requiring cooperatives to report their members' debts and repayments to the NCB. The Ministry of Agriculture and Cooperatives (MoAC) is responsible both for promoting cooperatives and for regulating and supervising them, presenting a clear conflict of interest. In the medium term, it is recommended to significantly advance in the implementation of a regulatory and supervisory regime for financial cooperatives that is proportionally equivalent to that applied to the banking system. For this, MoAC should do its utmost to separate its regulation and supervision functions from its promotion function and ensure the independence of the former. Given the risks and social implications of high indebtedness of cooperative members, CPD should work closely with BoT and the cooperative federations to research the actual level of debts. In addition, it is advised to enhance CPD's supervisory capacity to adopt BoT's recommended macroprudential measures to cooperatives as appropriate and to assess options to establish liquidity and/or solvency funds under close oversight of CPD. The capacity of cooperative federations should also be strengthened to provide services to their members, such as liquidity management, information technology, management, and internal control, provided that they are properly regulated and supervised according to their roles and functions.

There is an active FinTech ecosystem in Thailand, bringing opportunities for providers and consumers and related challenges in regulation and supervision. The authorities are making good strides towards an enabling environment for the digital economy, with the results seen most prominently in a proliferation of new payments companies and instruments. All three regulators have created regulatory sandboxes to encourage innovation. Most of the technologies tested in the sandboxes have been incumbents adopting new technology, sometimes in partnership with new entrants. Competitive impact on market structure and a broader impact on inclusion have yet to emerge. FinTech does not at this time present a financial stability risk, but robust monitoring is needed as use of digital financial services can rapidly change the risk profile of a product or customer segment. The approach of Thailand's main financial regulators towards FinTech lines up well with the elements of the Bali FinTech Agenda. Laws and regulations have been introduced to enable new activities, and regulators are committed to continue strengthening their oversight capacity. Further enhancement is recommended in several areas: ID infrastructure, competition, data gathering, sandbox operations, product approval, and supervision of innovations.

Table 1. 2019 Thailand FSAP: Key Recommendations		
Recommendations	**Responsible Authorities**	**Time***
Overall regulatory and supervisory framework		
Establish an overarching body to strengthen cooperation, coordination, and information sharing, with a "comply or explain" mechanism where it makes recommendations to member agencies	BoT, MoF, OIC, SEC, DPA, FIDF, MoAC	NT
Improve further the accountability mechanism of the FIPC and the OIC, including by reinforcing the accountability of the FIPC to include hearings with an appropriate legislative body	BoT, OIC	MT
Strengthen further the independence of regulators including by removing representatives of other institutions from the FIPC and boards of regulatory agencies and by removing requirements for MoF approval to issue regulations to SFIs and take corrective actions	BoT, MoF, OIC, SEC	MT
Risks to Banking Sector Stability		
Enhance the data management system and improve the capacity for liquidity risk analysis	BoT	MT
Extend the risk analysis to better cover a wider range of sources of risks with potential systemic spillovers, including concentration in loan portfolios	BoT	NT
Collect more granular data on SFIs to refine the stress tests on solvency and liquidity	BoT, MoF	NT
Macroprudential and Financial Stability		
Clarify the financial stability mandate of the FIPC and the MPC	BoT, MoF	MT
Address potential leakages by expanding BoT's macroprudential authority, including extending existing DTIs to personal loans granted by SFIs, TCCs, and CUs	BoT, MoF, MoAC	MT
Introduce a broad-based DSTI ratio	BoT	NT
Banking Sector and Specialized Financial Institutions Oversight		
Amend internal guidelines on preventive and corrective action to reflect flexibility granted under FIBA	BoT, MoF	MT
Implement the new definitions of loan restructuring and rescheduling and the current practices surrounding NPL identification to meet international standards	BoT	MT
Continue reforms to supervise the three largest retail deposit-taking SFIs under the same standards as commercial banks	BoT, MoF	MT
AML/CFT		
Enhance scope and capacity for risk-based AML/CFT supervision	AMLO	MT
Crisis Management and Resolution		
Review and amend bank and SFI resolution law to align with Key Attributes	BoT/MoF	MT
Develop bank and SFI resolution toolkit and implement bank-specific resolution planning	BoT/MoF	MT
Strengthen ELA and deposit insurance arrangements in line with best practice	BoT, MoF, DPA	MT
Insurance Sector Oversight		
Strengthen OIC's independence by amending the Insurance Commission Act and related legislation to eliminate MoF's authority to override OIC decisions, by appointing commissioners solely on suitability criteria and technical qualifications, and by giving the OIC the authority to set its own fees	OIC, MoF	NT
Enhance licensing and suitability requirements to identify real-person beneficial owners of insurers and to include an appropriate definition of control in primary legislation	OIC	NT
Capital Markets Oversight		
Amend the SEA to (i) enable the SEC to bring civil enforcement actions for any violation of the SEA or SEC regulations; (ii) transfer licensing authority to the CMSB; and (iii) authorize the SEC to appoint a temporary receiver of a failing firm	MoF, SEC	NT
Conduct a comprehensive review of SET rules on market operations, fees, and trading	SEC	I
Financial Market Infrastructure		
Improve BAHTNET collateral management including by: (i) preventing participants from pledging their own securities as collateral; (ii) implementing concentration limits; (iii)	BoT	NT (i–iii) MT (iv)

conducting independent review and test of the haircut methodology; and (iv) developing an automated collateral management system		
Strengthen TSD legal and regulatory framework to afford protection of depositors' and customers' securities balances in the event of TSD going bankrupt and establish beneficial ownership rights of securities balances of depositors and investors	TSD, SEC, MoF, Ministry of Law	MT
Periodically test business continuity plans for BAHTNET and TSD to ensure completion of settlement with specific scenarios taking into account interdependencies among TSD, BAHTNET, and TCH	BoT, TSD, SEC	NT
Funded Pension Scheme and the Development of Long-Term Capital Market		
Define the objective of the PVD only in terms of its capacity to provide adequate pensions, encourage lifecycle investment portfolios, and set inflation-linked annuities as default option while limiting access to lump-sum payouts	MoF, SEC	NT
Ensure that the governance structure limits government involvement in the investment decisions of the NPF if a mandatory funded scheme is enacted	MoF	I
Fintech		
Update supervisory frameworks (including strengthening supervisors' capacity) as innovations enter the market, articulate an overall regulatory strategy for financial services in a digital economy, and clarify how the Three Regulator Committee will determine the lead regulator for hybrid business models	BoT, SEC, OIC and Three Regulator Committee	I
Strengthen the sandboxes' risk and testing frameworks to cover the scale up and supervision of new business models as well as the mechanics and consumer protection aspects of new technologies, and ensure that all potential participants fully understand the sandbox processes, including protection of innovations and the path to exit	BoT, SEC, OIC	NT
Thrift and Credit Cooperatives & Credit Unions		
Define and initiate the implementation of a regulatory and supervisory regime for financial cooperatives that is proportionally equivalent to that applied to the banking system, separate CPD's promotional activities from regulation and supervision and ensure the independence of the latter, and strengthen the regulatory and technological capabilities of CPD and CAD	CPD and CAD with support from BoT	MT
Address a potential over-indebtedness problem by (i) carrying out research to understand the current levels and risks, (ii) strengthening the monitoring of loan portfolios, (iii) defining maximum DTI ratios, and (iv) requiring TCCs and CUs to report to the NCB	BoT, MOAC, CPD, CAD	I
Assess options to establish liquidity and/or solvency funds under the purview of CPD	MoAC, CPD, with support of DPA	MT

*"I (immediate)" is within one year; "NT (near-term)" is one–three years; "MT (medium-term)" is three–five years.

MACROFINANCIAL SETTING

A. Macroeconomic Conditions and Outlook

1. Thailand's economy has been resilient to several shocks during the last decade. These shocks included severe floods in 2011, supply shocks in global commodity markets, and political instability in 2013-14 leading to subdued economic activity. The resilience of the economy has been supported by ample international reserves, a flexible exchange rate, and a prudent fiscal position. Growth started to pick up in early 2018 underpinned by a recovery of domestic demand. However, the momentum appears to be faltering due to the weak external demand, especially from China, and the impact of trade tensions on global supply chains. As a result, the economy grew by 4.1 percent in 2018 and is projected to slow down to around 3.0 percent in 2019 and 2020. Core inflation remains subdued, and average headline inflation (which reached 1.1 percent in 2018) is projected to decline to just below the lower end of BoT's target band of 1.0-4.0 percent in 2019 (Table 2).

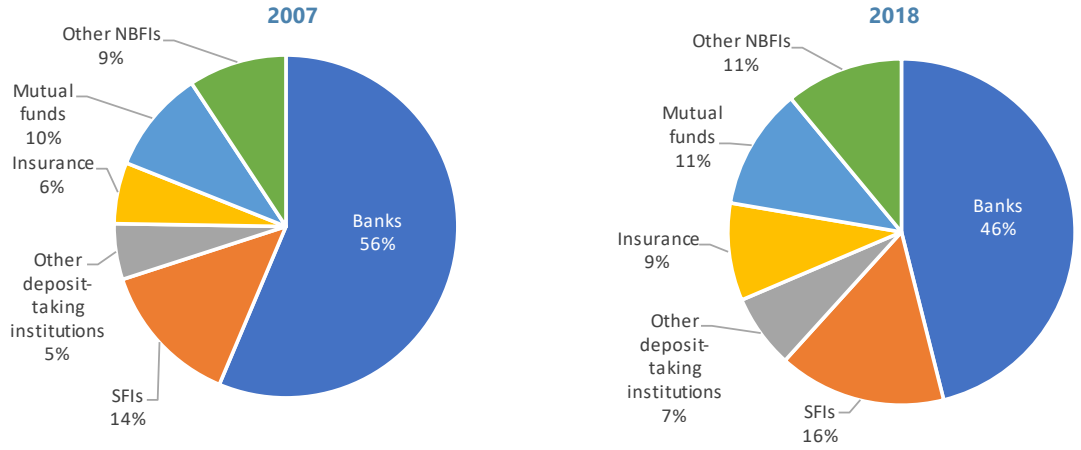
2. Risks to the macrofinancial outlook reflect external and domestic headwinds. If trade tensions intensify, export growth could decline and spill over to domestic demand. A sharp tightening in global financial conditions could precipitate capital outflows, adding to FX volatility and higher borrowing costs. Domestically, a difficult transition to a new government could lead to policy paralysis, derailing the Eastern Economic Corridor infrastructure push. Nevertheless, the country's ample buffers and strong fundamentals should be sufficient to help smooth these shocks. The medium-term growth outlook could be dampened by the high level of household debt, weaker-than-expected fiscal stimulus, and anemic productivity growth.

B. Financial Sector Structure

3. While banks continue to account for a sizable share of the financial sector, the role of SFIs, other deposit-taking institutions, and non-bank financial institutions (NBFIs) has grown (Figure 1 and Table 3). Financial sector assets reached 271 percent of GDP at end-2017 (up from 183 percent in 2007). Assets of banks represented 46 percent of total financial sector assets at end-2018, down from 56 percent in 2007. The assets of SFIs (government-owned financial institutions for promoting economic development and supporting credit to specific sectors) and other deposit-taking institutions (e.g., CUs and TCCs), as well as those of mutual funds and insurance companies (some of which are subsidiaries of the commercial banks), grew faster than banks' assets.

Figure 1. Thailand: Financial System Structure
(in percent of total financial assets)

Banks continue to account for a sizeable share of financial sector assets.



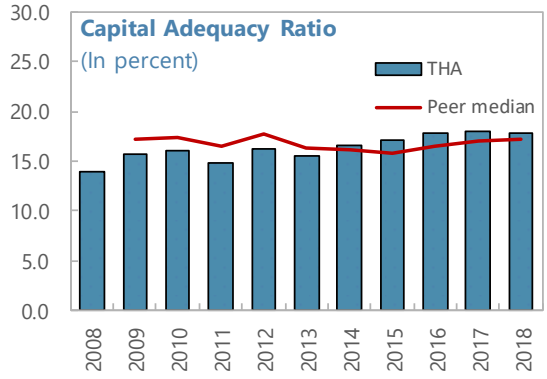
Source: The BoT and Fund staff estimates.

4. Commercial banks appear to be sound, though profitability is weak (Figures 2 and Table 4). The sector is supervised by the BoT, and consists of 30 institutions, with five domestic systemically important banks (D-SIBs) accounting for 70 percent of assets. The aggregate capital adequacy ratio (CAR) stood at 18.0 percent in the second quarter of 2018, well above the minimum of 10.4 percent in 2018 and 11 percent from 2019 (including the conservation buffer). While the ratio of non-performing loans (NPLs) to total loans is relatively low at 2.9 percent, the quality of credit to small and medium enterprises (SMEs) has deteriorated. Current weaknesses in loan management practices may be understating the level of NPLs, though this weakness is being mitigated by high levels of provisioning and targeted in-depth supervision. Commercial banks rely mostly on retail deposits and have been improving liquidity risk management. While the liquidity coverage ratio (LCR) was almost 170 percent, the liquidity metrics of the financial soundness indicators (FSIs) indicate that Thailand is below the median for peer countries. The profitability of the sector remains below peer countries. The profitability of the sector remains weak, likely reflecting rising costs and competition in payment services including from FinTech (e.g., banks have set PromptPay fees at zero, thus eroding earlier higher fees from payment services).

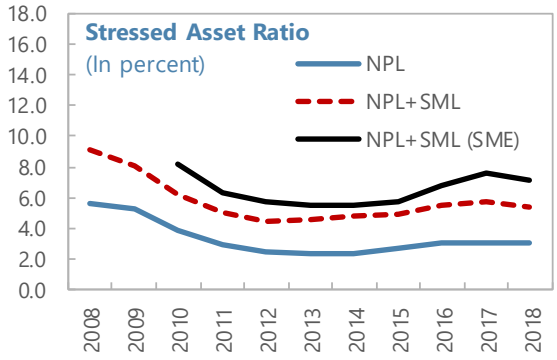
Figure 2. Thailand: Financial System Soundness Indicators

Banks appear to be sound, though liquidity indicators and profitability are somewhat below peer countries.

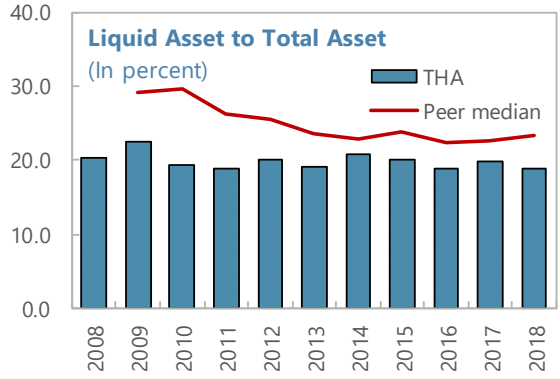
The capital adequacy ratio remains well above the regulatory minimum and increasing…



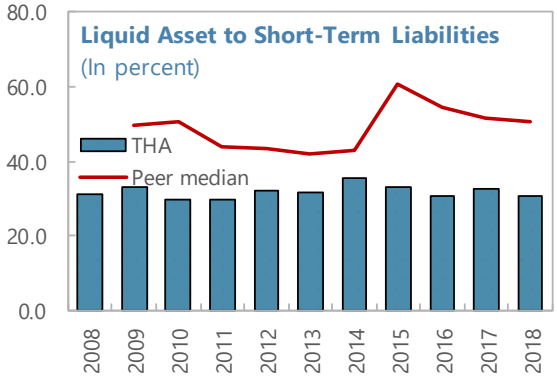
…and the NPL ratio is low, albeit the quality of credit to SMEs is showing signs of deterioration.



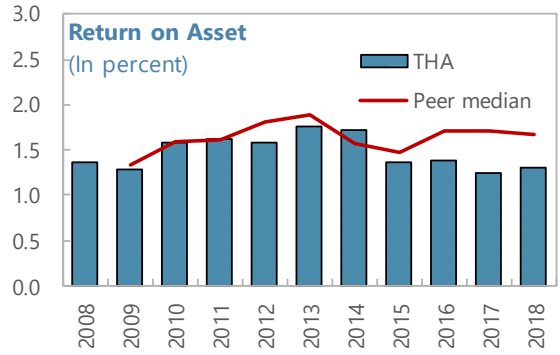
The share of liquid asset to total asset is moderately below the median of peer countries….



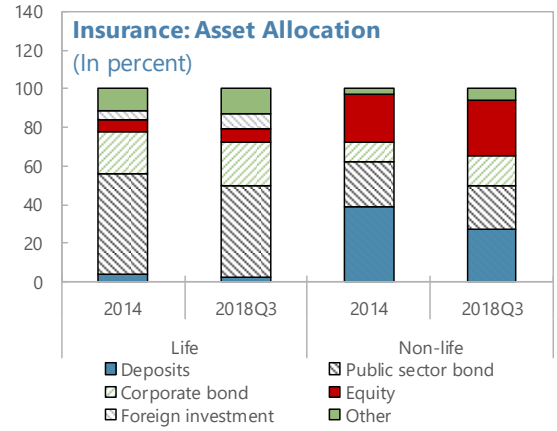
…and Thai banks appear to rely more on short-term liabilities.



Profitability is somewhat below peer countries.



The insurance sector has a diversified asset allocation, but the share of equities is high for non-life companies.



Note: SML stands for special mention loans. Peer countries include ASEAN 5 (Indonesia, Malaysia, Philippines, Singapore), Colombia, South Africa, and Turkey.
Sources: The BoT and IMF Financial Soundness Indicators database.

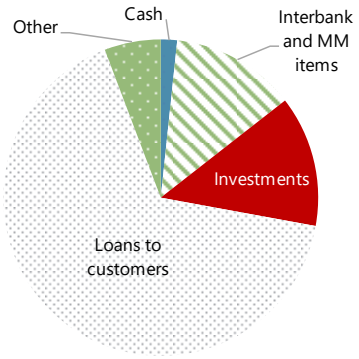
Figure 3. Thailand: Balance Sheet Structure of Banks and SFIs

(as of end-2018)

The corporate and household sectors account for the majority of banks' loans and deposits, and SFIs' loans and deposits are predominantly to households.

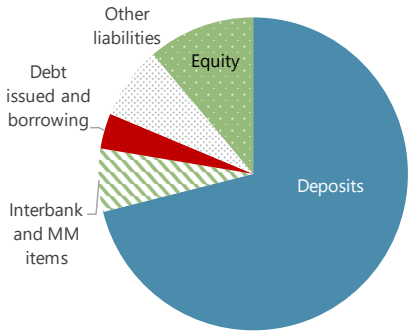
Loans account for around two-thirds of banks' assets…

Structure of Bank Assets



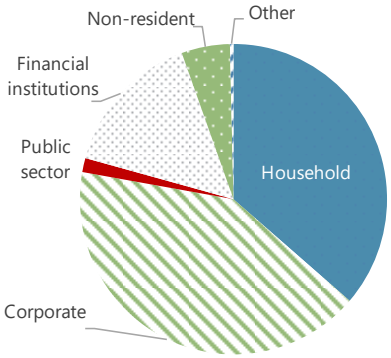
…and 70 percent of the liabilities are in deposits, with a loan-to-deposit ratio slightly below 100 percent.

Structure of Bank Liabilities and Equity



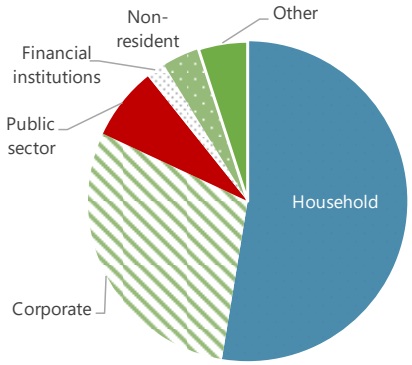
Corporates and households account for roughly one-third of banks' portfolio each, with small exposure to the public sector.

Structure of Bank Loans



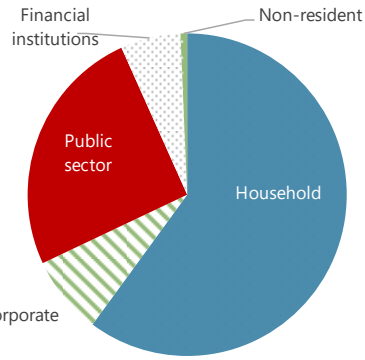
Banks rely mostly on retail deposits for funding.

Structure of Bank Deposits



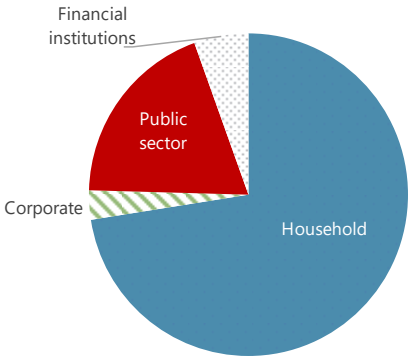
Households account for 60 percent of SFIs' loan portfolio…

Structure of SFI Loans



…and close to three-quarters of funding.

Structure of SFI Deposits



Sources: The BoT.

5. SFIs, TCCs, and CUs play a key role in providing credit to households. The supervisory responsibility for the SFIs was shifted to the BoT in April 2015, as recommended by the World Bank FSAP Development module (2011) and IMF TA (February 2015), and a structured framework for prudential supervision is being developed. The oversight of financial cooperatives (including TCCs and CUs) is under the MoAC. There are eight SFIs (four take retail deposits), 587 CUs, and over 1,400 TCCs. SFIs' loans and deposits are equivalent to about 40 percent of those of commercial banks, and SFIs, CUs, and TCCs account for about 45 percent of loans to households. SFIs' asset quality is somewhat weaker than that of commercial banks, with an average NPL ratio of 4.5 percent as of September 2017.

6. The assets of the main NBFIs reached 64 percent of GDP in 2017 (up from 33 percent in 2007). Insurance and mutual fund assets doubled as a share of GDP, while private pension funds experienced a moderate increase (Figure 4).

- *Insurance*. The insurance sector is supervised by the OIC, created in line with the recommendations of the 2008 FSAP and accountable to the MoF. With gross premiums written growing well above nominal GDP in the last 10 years, the insurance penetration ratio (the ratio of premiums written to GDP) has increased from 3.6 percent in 2008 to 5.6 percent in 2017 (somewhat below the 8.75 percent observed in Singapore, but higher than most other countries in the region including Malaysia, Indonesia, and Vietnam). Of the 23 life insurers and reinsurers operating in Thailand, the top five represent 72 percent of total assets in the sector and include a branch of a foreign insurance group (the largest) and two insurers owned by domestic banks. The non-life sector is less concentrated. Of the 53 non-life insurers and reinsurers operating in Thailand, the top five represent 42 percent of direct premium in the sector (end-2017). At the same time, interest of foreign participants in the market is increasing, and the Thai authorities are actively working to increase foreign investment by adopting incentives to encourage foreign reinsurers to make Thailand a business center for their Southeast Asian operations.

Figure 4. Assets of Main NBFIs

(In percent of GDP)

Insurance and mutual fund sectors have doubled as a share of GDP in the last decade, while private pension funds remain small.

	Insurance		Mutual fund		Pension[1]	
	2007	2016*	2007	2016*	2007	2016*
Colombia	3.8	6.8	0.2	0.1	13.5	22.1
Indonesia	3.3	4.4	...	...	2.2	1.8
Malaysia	18.4	20.3	25.3	29.1	47.8	59.9
Philippines	6.5	8.5	1.4	1.6	3.6	3.5
Singapore	43.8	42.8	...	641.2	...	29.9
South Africa	68.9	65.8	31.8	49.3	57.2	...
Thailand	11.2	24.2	17.8	30.98	5.2	6.9
Turkey	1.5	4.5	3.1	1.4	0.4	2.3

Sources: FinStats, The BoT, and Fund staff estimates.

[1] Excludes government pension fund for Thailand.

* End-2018 for Thailand.

- The industry is well-capitalized, with a diversified asset allocation, and has adjusted to the low interest rate environment by shifting away from endowment products. However, profitability has been weakening, reflecting rising costs and competition. Asset allocation to equity is relatively high for non-life insurance at around 30 percent, and investments in riskier assets have increased.

- *Mutual funds*. The SEC oversees capital markets and investment intermediaries. The top five asset management companies (all part of conglomerates) accounted for over 70 percent of assets under management (AUM) at end-2017 (Figure 4). Roughly half of the funds are fixed income, while the shares of equity and infrastructure funds have increased in the last few years. Foreign investment

funds account for about one fifth of total AUM. Retail clients dominate the investor base for mutual funds, which account for 83 percent of the total, potentially exacerbating liquidity risks.

7. Capital markets are largely on par with regional peers and have grown by around 50 percent since 2007 (Figure 5). Equity market capitalization reached 116 percent of GDP at end-2017. The domestic bond market is dominated by government and central bank paper, and corporate bonds represent one quarter of outstanding debt securities. However, with a prolonged period of low interest rates, corporates have increasingly turned to the bond market to raise funds, helping deepen the domestic capital market and leading to increases in corporate leverage. Most of the corporate bonds outstanding are investment-rated, issued in baht, and held mostly by domestic retail and institutional investors. Eighty-five percent of total corporate bonds issuance in 2018 was by nonfinancial corporations (with banks accounting for 15 percent of the issuance). Issuance of lower-rated and unrated corporate bonds increased in 2016 and early 2017, but the trend subsequently reversed due to defaults by some issuers and adjustments in terms of the offers. To enhance investor protection, the SEC has revised regulations on the issuance of unrated bonds.

C. Financial Vulnerabilities

8. Financial vulnerabilities appear to be contained, but household indebtedness is relatively high, and there are some weaknesses in corporates and SMEs that the authorities are monitoring closely (Figure 5). On the positive side, the credit cycle started tapering off in 2015, partly due to increased risk aversion by banks, and the increase in equity prices has been moderate. Housing prices have risen sharply in some areas in Bangkok, although the increase in the broader market has been moderate.

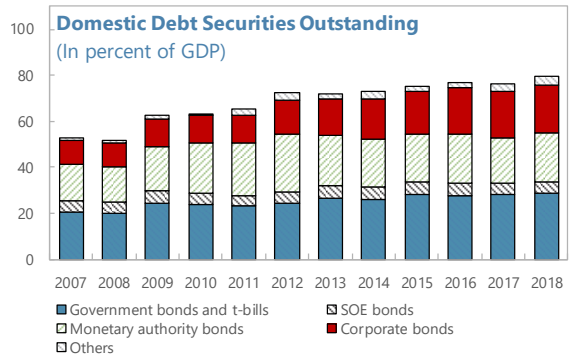
Household Vulnerabilities

9. The household debt-to-GDP ratio remains among the highest in the region, despite a moderate decline in recent years (Figure 7). The significant pick-up through 2013 was driven by personal loans and hire purchase (mainly autos). As the impact of some one-off factors (e.g., the 2011 floods and the first car tax rebate scheme) dissipated, growth in personal loans and loans for business moderated. However, growth in household debt started to pick up in 2018, driven by mortgages partly in anticipation of the expected introduction of the loan-to-value (LTV) limits in April 2019. The total amount of new mortgages taken out by high-income earners (with average monthly income higher than THB 50,000) increased sharply in the last quarter of 2018, and a record number of housing sales took place in Bangkok and its vicinity. Together with the increase in auto loans, some households may have seen a substantial increase in their debt-service-to-income (DSTI) ratio, leaving them more vulnerable to future income and interest rate shocks.

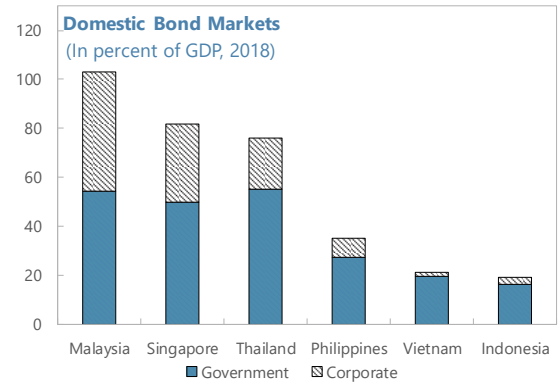
Figure 5. Thailand: Capital Markets and Mutual Fund Industry

Capital market developments are broadly on par with regional peers, but the corporate bond market is less developed.

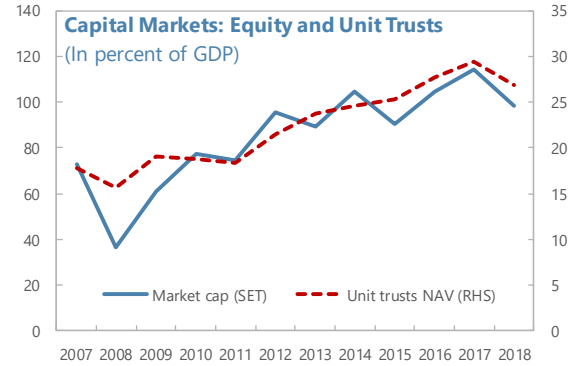
The domestic bond market is dominated by government and central bank papers.



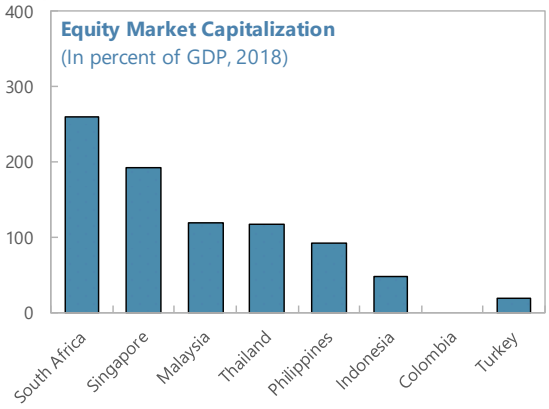
While the size of the government bond market is similar to that in Malaysia and Singapore, the corporate bond market is less developed.



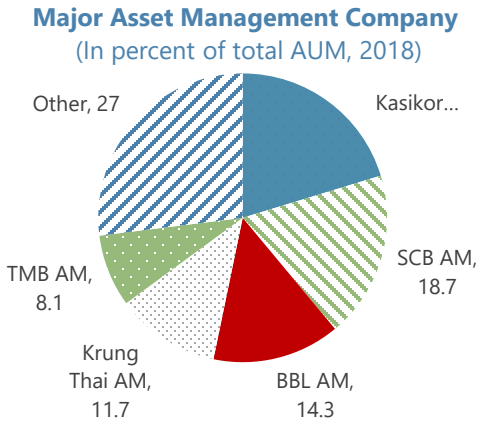
Equity market capitalization has tripled since 2008...



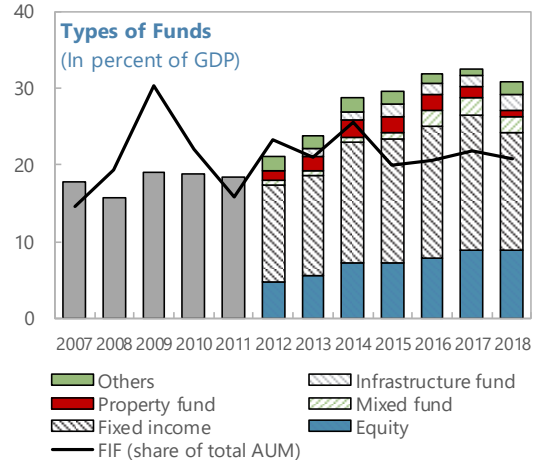
...and is at a similar level compared to Malaysia and the Philippines.



The largest five asset management companies, accounting for 70 percent of AUM, are all part of bank conglomerates.



Roughly half of the AUM are in fixed income, but equity and infrastructure funds have been growing.

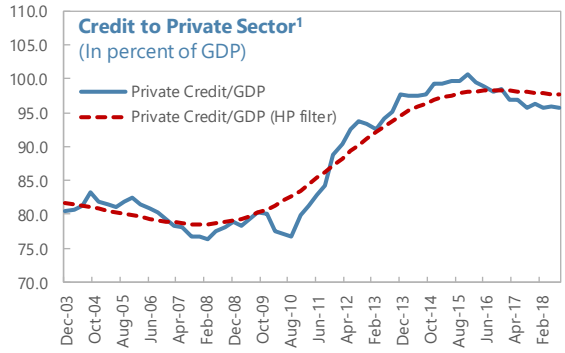


Sources: The BoT, Asian Bonds online, dXdata, Association of Investment Management Companies.

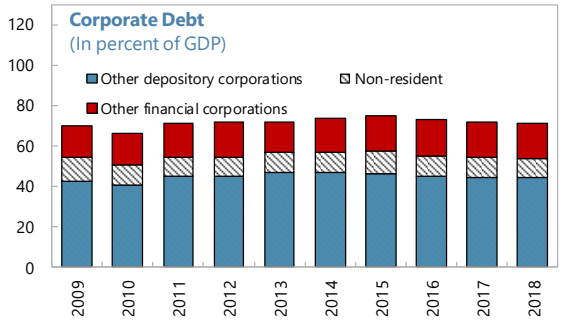
Figure 6. Thailand: Financial Vulnerabilities

While household indebtedness is relatively high and deleveraging is progressing slowly, corporate debt has been broadly stable and the increase in asset prices has been moderate.

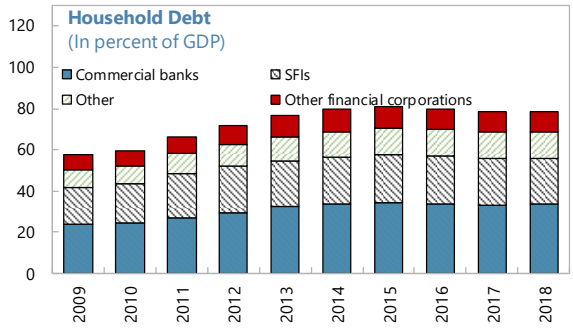
While the credit gap turned in mid-2016, reflecting a slow-down in credit growth between 2015 and 2016...



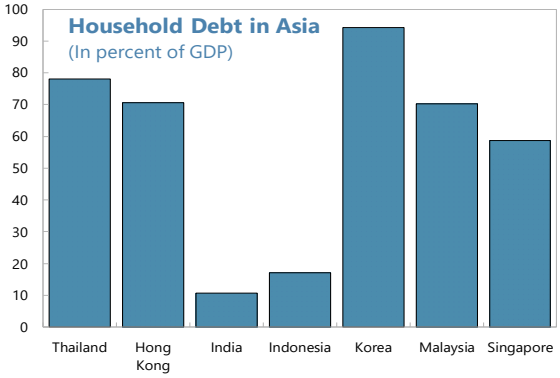
While corporate debt-to-GDP has been broadly stable...



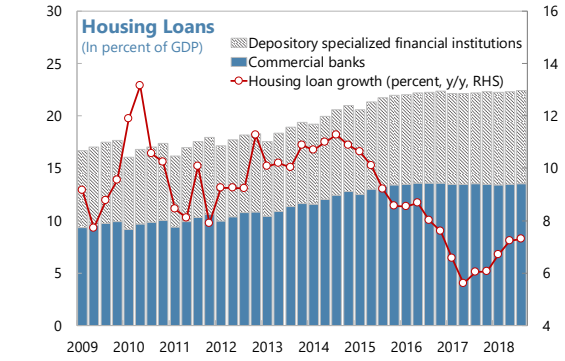
...total household indebtedness has decreased somewhat since its peak in 2015...



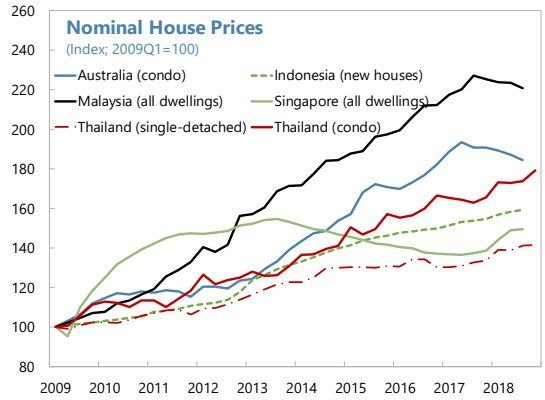
...but remains high compared to regional peers.



The growth in housing loans is picking-up in recent months, after a significant slowdown in the previous few years...



...while the condominium prices have been increasing steadily.



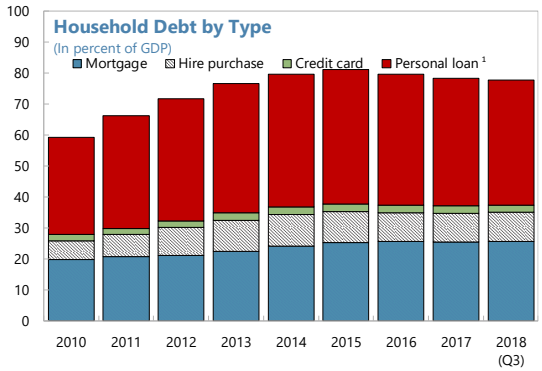
Sources: The BoT, CEIC Data Co. Ltd, Datastream, Haver Data Analytics, and IMF staff calculations.

[1] Credit to corporate and household sectors extended by commercial banks and SFIs.

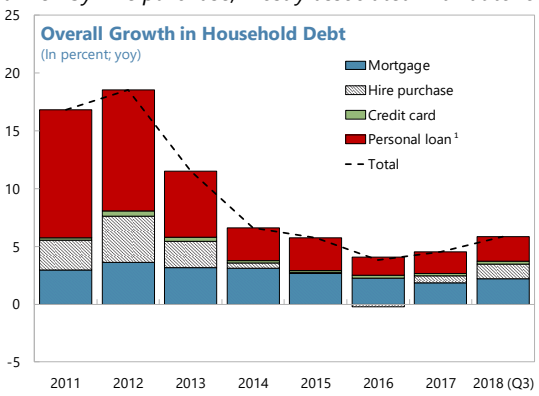
Figure 7. Thailand: Selected Facts of the Household Sector

While the recent pick up in household loans is partly attributed to favorable labor market dynamics, the increase in mortgages may be putting pressure in some segments of the housing market.

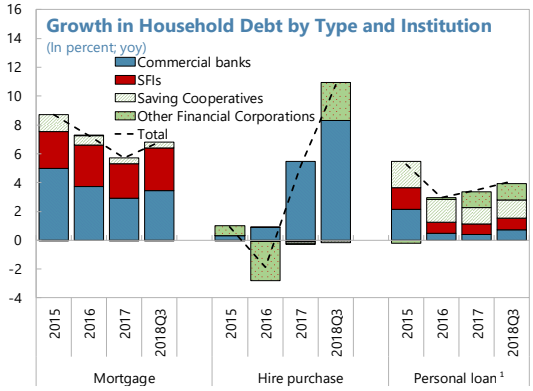
While total household debt as a share of GDP has stabilized since 2015…



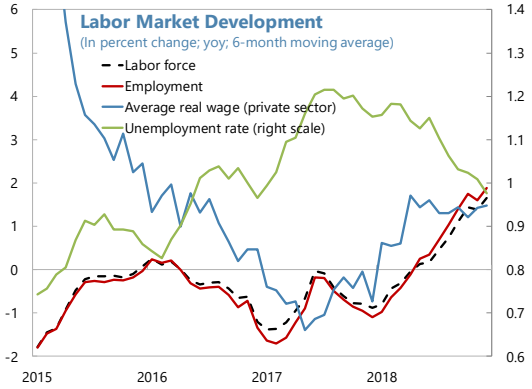
…in nominal terms, household debt continued to grow driven by hire purchase, mostly associated with auto loans.



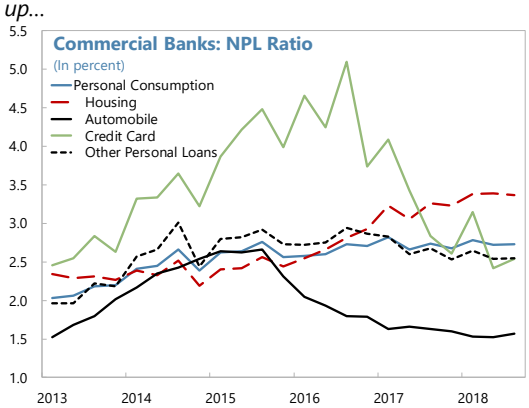
Growth in hire purchase (auto loans) accelerated in recent months; the contribution to the growth in personal loans is shifting towards nonbank institutions.



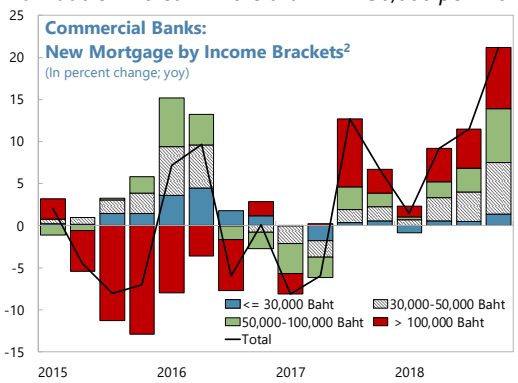
The recent pick-up in credit demand is supported by favorable labor market developments.



The NPL ratio of mortgages has been gradually edging up…



…with mortgages largely extended to high income individuals who earn more than THB 50,000 per month.



Sources: The BoT and IMF staff calculations.

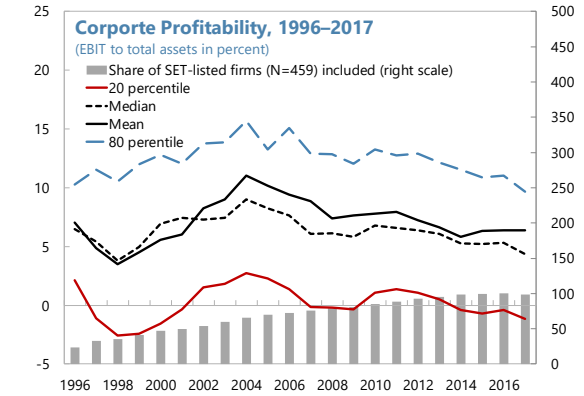
[1] Includes loan for business purpose and other categories.

[2] Based on monthly income.

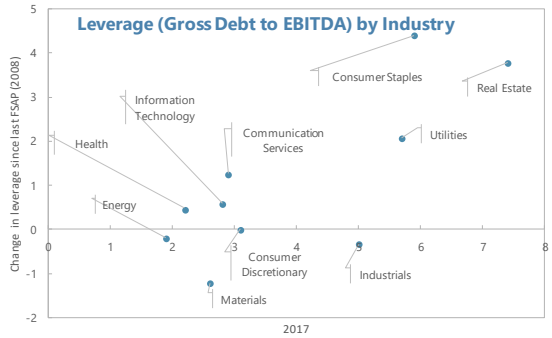
Figure 8. Thailand: Selected Facts of the Corporate Sector

With declining corporate profitability and increasing leverage in some sectors, debt-at risk is relatively high for regional standards and there are signs of vulnerabilities in SMEs.

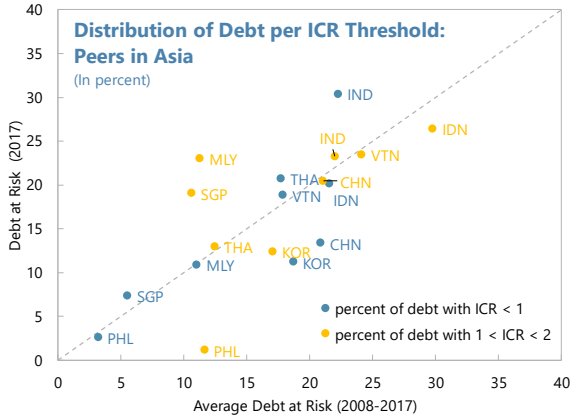
Corporate profitability has been on the decline since the fallout of the Global Financial Crisis in 2008–2009 …



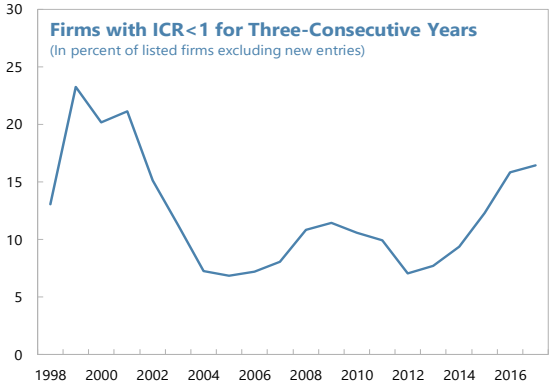
…and the leverage has increased substantially in sectors such as real estate, utilities, and some manufacturing …



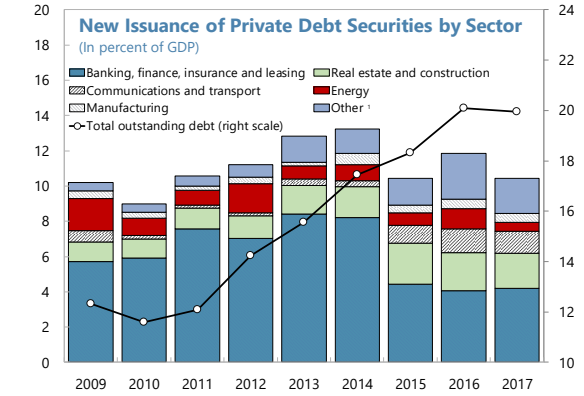
Debt held by Thai corporates with ICR less than 1 has increased somewhat and remains relatively high…



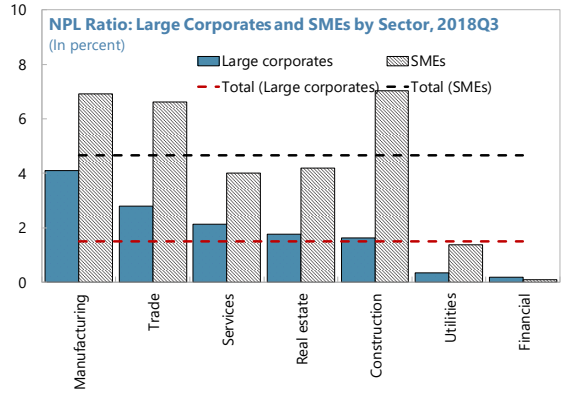
…and the number of firms with ICR less than 1 for three consecutive years has increased.



The corporate bond market has been growing rapidly, and securities are being issued more broadly across sectors



NPLs are larger in SMEs than in large companies



Sources: The BoT, Capital IQ (covers more than 10,000 firms across major Asian countries with total assets of US$25 trillion), and IMF staff calculations.

[1] Others include Agriculture, recreation and hotel, electronic and computer; and others.

10. Foreign purchases of condominiums increased in recent years, making the housing market vulnerable to volatility in external demand. Foreign direct investment (FDI) inflows to the real estate sector surged in 2018, with record units of condos sold. Since the increase in foreign purchases is likely to be for investment purposes, weaker investment sentiment by foreign buyers could exacerbate pressures on the housing market.

Corporate and SME Vulnerabilities

11. Corporate debt has been broadly stable as a percent of GDP over the past decade, and its composition is not a cause of concern. Depository institutions (commercial banks, SFIs, TCCs, and CUs), account for nearly two-thirds of corporate debt. While the share of short-term corporate debt in total corporate debt has increased since 2009, it remains below 25 percent. Foreign-currency denominated debt, largely held by nonresidents, has declined and represents about 20 percent of total corporate debt.

12. However, a pocket of vulnerabilities has emerged as profitability of the SET-listed companies on average has declined since 2008, accompanied by an increase in leverage (Figure 8). [2] The decline in profitability is more prominent in sectors such as capital goods, food, manufacturing, real estate development, media and entertainment, and telecommunications and information technology.

13. Vulnerabilities have recently risen among SMEs which represent around 40 percent of GDP and employ about 80 percent of the total labor force. In recent years, the quality of SME loans has deteriorated, as the NPL ratios in the SME sector has increased from 3.5 percent in 2015 to 4.5 percent at end-2018 (but remains below the levels seen ten years ago). Among SMEs, NPL ratios are particularly high in commerce, manufacturing, and construction which account for about 60 percent of employment in SMEs. Given the strong capital position of banks, the vulnerabilities that are emerging in SMEs are unlikely to have a significant impact on the stability of the banking system (¶16).[3]

FINANCIAL SECTOR STABILITY AND RESILIENCE

A. Stress Testing Overview[4]

14. The Thai financial sector is exposed to several macrofinancial risks stemming from external and domestic factors (Risk Assessment Matrix (RAM), Table 5).

- ***External risks.*** The negative impact on growth from rising protectionism could lead to weaker-than-expected growth in key advanced economies and in China, ultimately depressing Thailand's

[2] Based on the sample of firms with asset of USD 25 million or more.

[3] Therefore, staff did not see a need to recommend a specific macroprudential tool targeting the corporate sector.

[4] For a more detailed description and discussion of stress-test scenarios, methodology, and results, see the "Financial System Stability Assessment," 2019, IMF.

exports, causing lower GDP growth and higher unemployment, which, coupled with an increase in corporate vulnerabilities and a deterioration in households' repayment capacity, could lead to a weakening of banks' asset quality.

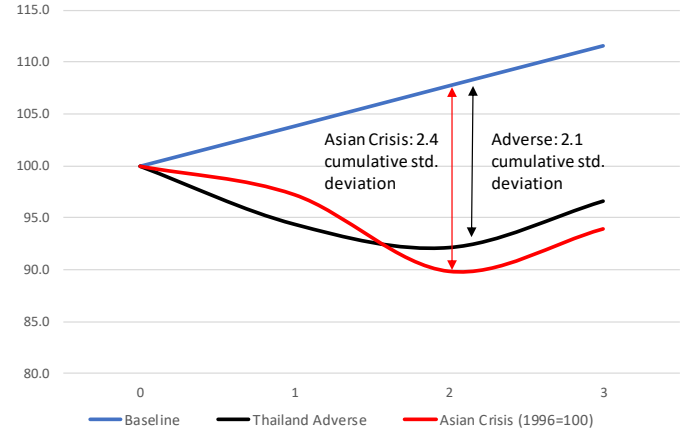
- ***Domestic risks.*** An increase in real interest rates and the real debt burden could pose balance sheet risks in the private sector. In addition, the outcome of the general elections may lead to political gridlock which could disrupt public investment projects, increase risk premia for sovereign and corporate yields, reduce equity prices, cause an exchange rate depreciation, and/or translate into funding pressures if banks experience a withdrawal of retail and wholesale deposits.

B. Solvency Stress Tests

15. The solvency stress test covered credit risk, market risk, funding risk, and interest rate risk in the banking book under two macroeconomic scenarios. The baseline scenario reflects the June 2018 World Economic Outlook (WEO) macroeconomic projections (Table 6). The adverse scenario captures the key macrofinancial risks that incorporate two layers (a global adverse scenario and a country-specific layer). The adverse scenario assumes a significant slowdown, similar to the experience during the 1998 Asian Crisis (Figure 9). Under this scenario, the Thai economy would decline by 5.6 percent and 2.4 percent in 2019 and 2020, respectively, and grow 4.9 percent in 2021. This represents a cumulative two-year deviation of 15.6 percentage points (equivalent to 2.1 standard deviations) from the baseline scenario. The shock would translate into a cumulative decline of the stock price index of 40 percent over the three years and to an exchange rate 10 percent below the June 2018 level at the end of the horizon.

Figure 9. Thailand: Comparison Between Thailand Macroeconomic Baseline and Stress Scenarios

The adverse scenario assumes a significant slowdown, similar to the experience during the Asian crisis.



Sources: IMF staff estimates.

16. The solvency stress test results show that banks covered by the exercise show resilience to the adverse scenario (Figure 10). NPL ratios would increase substantially, and most banks would incur negative net income in one or more years. Three banks would experience a modest erosion of their capital conservation buffer in the third year (2021), with total capital falling about 0.3 percentage points below their requirement. The recapitalization needs would be minimal. The resources needed by the banks to restore their capital buffers would be approximately THB 5 billion, equivalent to about 0.03 percent of GDP, and easily covered by one quarter of 'normal' profits for the banks. The exploratory solvency stress test on SFIs shows that limited asset diversification could represent an

important vulnerability under an adverse scenario for certain SFIs. However, the losses could be largely absorbed by the high degree of provisioning (i.e., NPL coverage ratio currently above 400 percent).[5]

C. Liquidity Stress Tests

17. A set of liquidity stress tests was performed jointly by the BoT and the FSAP mission. The tests were based on two frameworks: (i) a severe LCR scenario reflecting deposit outflows due to a confidence crisis and resulting in a sharp exchange rate depreciation; and (ii) an implied cash-flow-based analysis by maturity bucket ranging from seven days to more than a year. The capacity of IFs to withstand a severe redemption shock and its impact on the banking sector and the bond market was also assessed.

18. The liquidity stress test results show that Thai banks are resilient to large withdrawals of funding. In particular:

- ***Under the current regulatory regime, banks have sufficient liquidity buffers to withstand a one-month risk horizon*** (Figure 11). Three banks fall below the 100 percent hurdle rate in the severe scenario, of which one falls below the Basel III transitional 80 percent threshold. The aggregate liquidity shortfall of the three banks amounts to 0.7 percent of total assets (1.5 percent of GDP).

- ***The results of the cash-flow-based analysis were consistent with the LCR test over a one-month horizon***. All but two banks have a positive funding over all the time horizons ("1-7days" and up to more than "180 days"). Two banks would have a negative cash flow over the "180 days and beyond" horizon even after using their existing required reserves. The nominal amount of the cash shortfall is small, 6 percent and 7 percent respectively, of each bank's total assets.

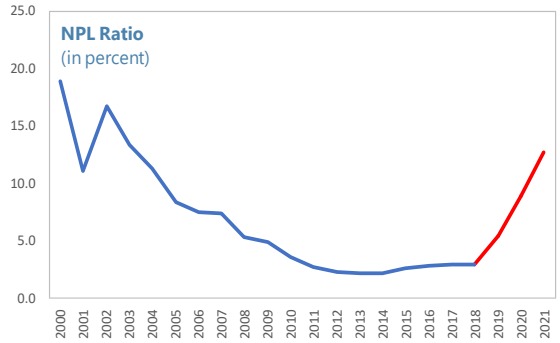
- ***A simplified liquidity stress test exercise was carried out for SFIs.*** The results show that all three SFIs have sufficient liquidity to withstand an 11 percent decline in deposits over a five-day period. SFIs' liquid-assets-to-total-assets ratio of 17.5 percent is comparable to the banking sector.

- ***The liquidity stress test on IFs showed that they would be able to withstand a severe redemption shock.*** Its impact on the banks and the bond market would be limited (Figure 11).

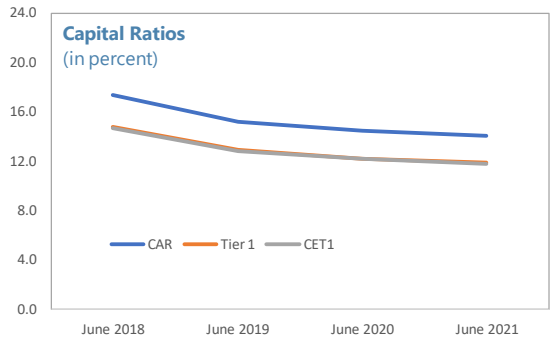
[5] Sensitivity tests confirmed the overall resilience of the commercial banking system. These sensitivity tests included risks on credit concentration, interest rate risk in the banking book, market risk, exchange rate risk, and risks from the residential property market. Sensitivity tests on the SFIs revealed a sizeable exposure to interest rate risk, probably due to the liability structure of SFIs, namely the higher proportion of term deposits relative to that of commercial banks, as well as 2-3 year savings products issuances.

Figure 10. Thailand: Solvency Stress Test Results

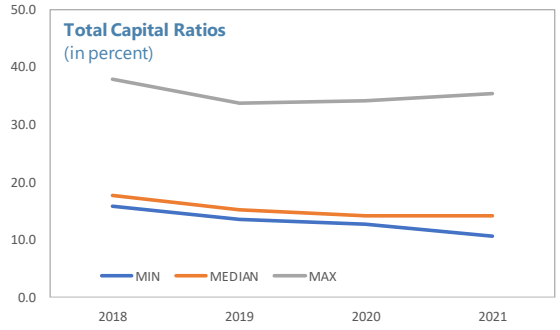
Under the adverse scenario the banks' NPL ratios increase substantially…



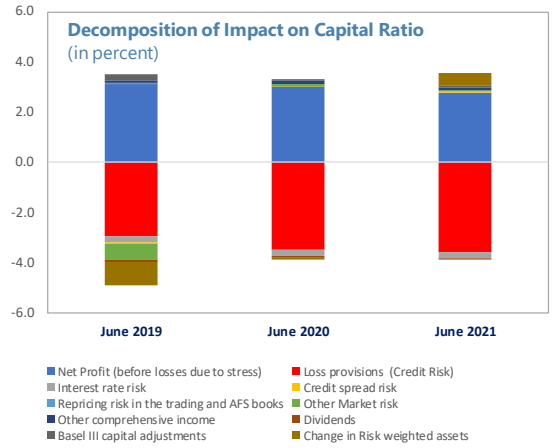
…capital ratios decline …



…although with significant dispersion…



…loan loss provisions are the main factor behind the decline in capital ratios.

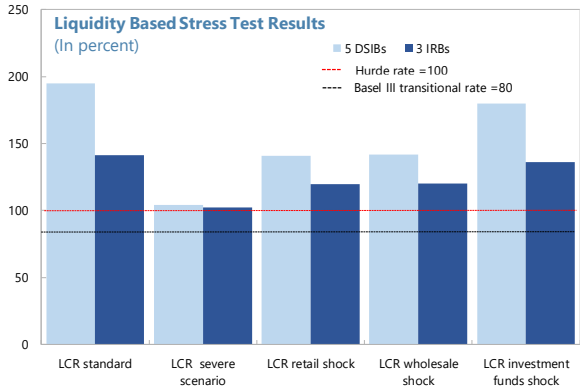


Sources: The BoT and IMF staff estimates.

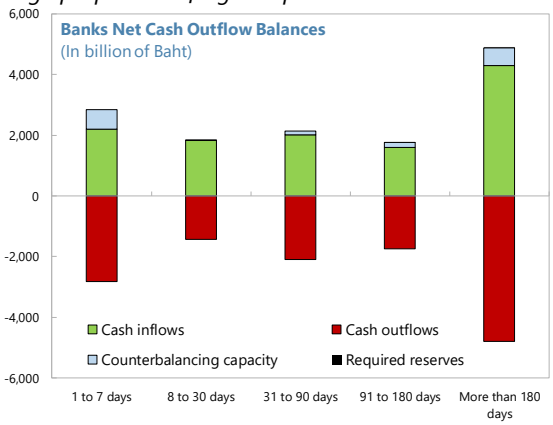
Note: Hurdle rates for total capital are 8.5 percent for minimum requirement, 9.5 percent including D-SIB surcharge, 11 percent including capital conservation buffer (CCB), and 12 percent including D-Sib surcharge and CCB.

Figure 11. Thailand: Liquidity Stress Test Results

The aggregate LCR under the severe scenario falls to 104 percent.



The counterbalancing capacity is used in the "1–7 day" window, and "more than 180 days window," due to the large proportion of sight deposits and other liabilities.



The aggregate LCR under the severe scenario, which combines the shocks to retail, wholesale and investment funds' deposits, remains above the hurdle rate of 100 percent.

	LCR Standard	LCR Severe	LCR Retail	LCR Wholesale	LCR Investment Funds
5DSIBs + 3IRBs LCR ratio (percent)	188	104	138	139	174
Liquidity shortfall [1]					
THB billion	...	248	24.7	53.7	0
Percent of GDP	...	1.5	0.2	0.3	0.0
Percent of banks' assets in sample	...	0.7	0.2	0.4	0.0
Number of banks faling					
to meet the regulatory rate	...	1 out of 8	0 out of 8	0 out of 8	0 out of 8
to meet the hurdle rate	...	3 out of 8	2 out of 8	2 out of 8	0 out of 8

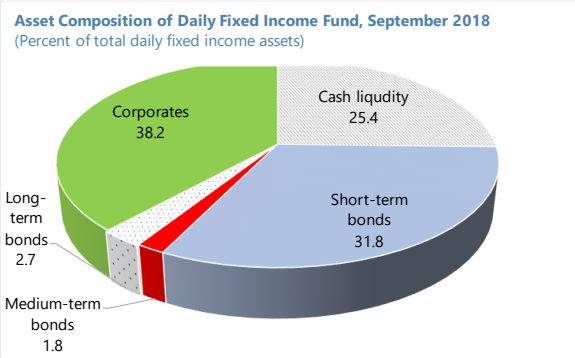
Source: SEC and IMF staff estimates.

[1] Liquidity shortfall is the amount required so that the liquidity ratio in each bank in the system be equal to or above 100 percent; the ratio effective as of June 2018.

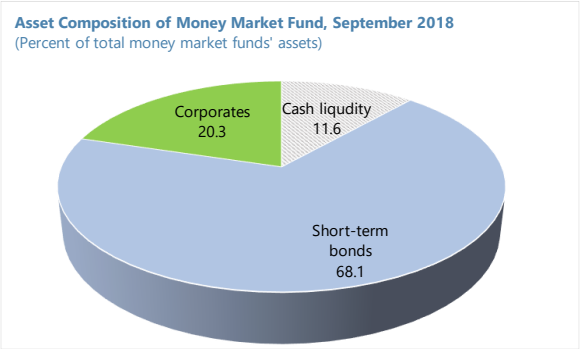
Note: The analysis of the impact of IFs deposit withdrawal partially took into account the feedback effects between commercial banks, investment funds, and the financial market.

Figure 12. Thailand: Asset Profile of Investment Funds, 2018

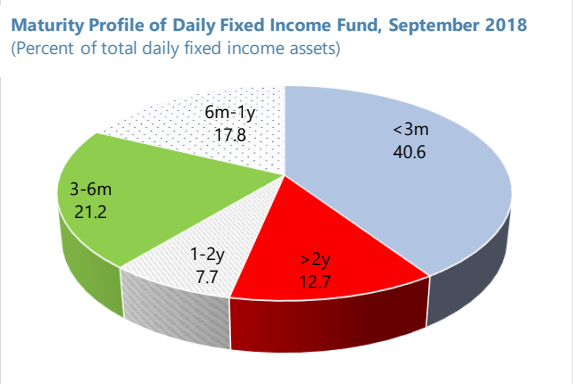
Daily FIs consist mainly short-term government bonds….



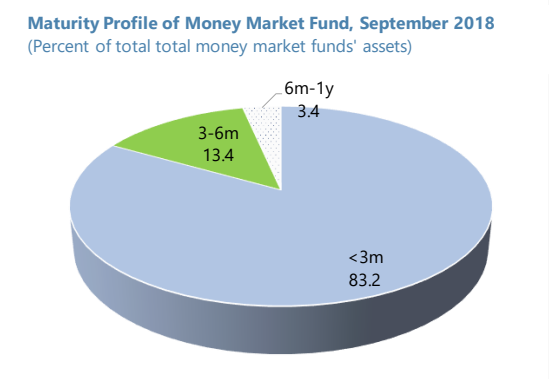
… and likewise for MMFs….



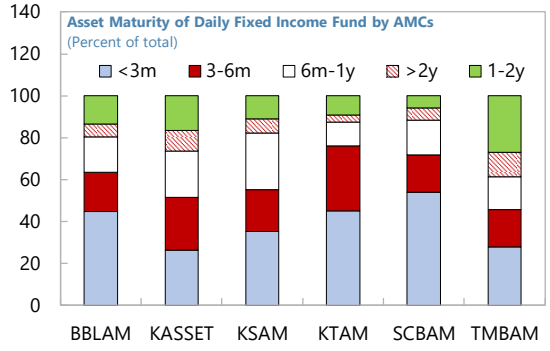
Almost 80 percent of Daily FIs are less than a year….



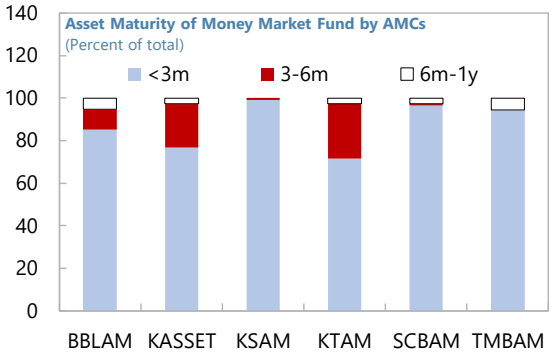
… and MMFs have all short-term maturities.



Daily FIs asset maturities of top six AMCs are short-term…



… and MMFs 's maturities are mostly less than 3 months.



Sources: Securities and Exchange Commission; and IMF staff estimates.

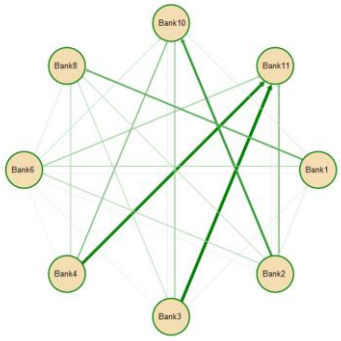
D. Interconnectedness, Contagion, and Systemic Risk

19. Systemic and contagion risks stemming from interlinkages were explored using market-based and balance-sheet approaches. The results show that contagion and systemic risks stemming from interlinkages are limited, reflecting the small interbank exposures and strong capital positions (Figure 13). The low degree of interconnectedness was confirmed by financial stability measures (Figure 14).

Figure 13. Thailand: Balance Sheet-Based Measures of Interconnectedness Among Banks

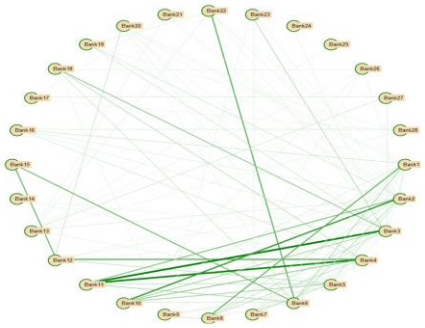
Among the largest eight banks, only one bank has strong linkages with other banks.

Interbank Exposure Network

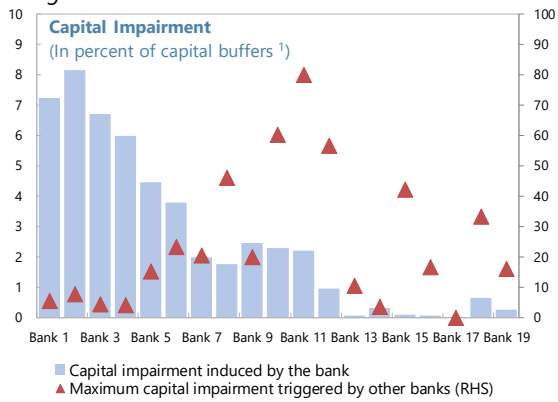


Cross-border exposures are limited, except for Bank 11, which has a strong relationship with its parent bank.

Interbank and Cross-Country Exposure Network



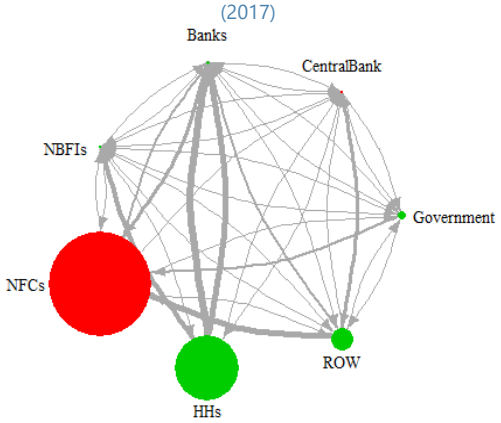
The impact on capital buffers from extreme shocks is manageable.



Balance sheet-based sectoral exposure analysis confirms limited cross-border exposures except for nonfinancial corporate sector (primarily through FDIs).

Inter-Sectoral Exposure Network

(2017)



Sources: The BoT; and IMF staff estimates.

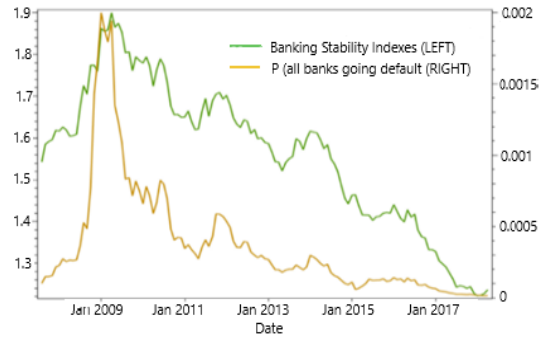
Note: Based on Espinoza-Vega and Solé (2010), Cross-Border Financial Surveillance: A Network Perspective, IMF Working Paper 10/105. The types of transactions covered in the network analysis include loans, repos, and debt instruments. Bank 1 to 19 denote banks and bank 20 to 28 denote countries in the network figures.

[1] Aggregate capital buffer of other banks when the bank is the trigger; capital buffer of individual bank otherwise.

Figure 14. Thailand: Market Data-Based Joint Default Probability (PoD) and Spillover Coefficient Among Banks and Insurance Companies[1]

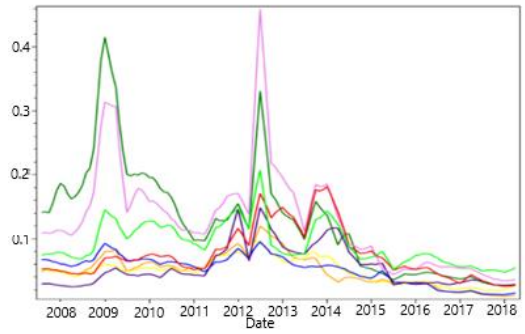
Contagion among the largest banks has steadily decreased in the past 10 years…

Joint Default Probability for the Five Largest Banks and Banking Stability Index



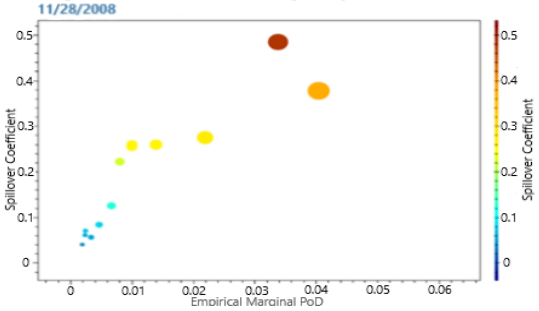
…while the spillover coefficients of the largest insurance companies show at least two separate peaks of increased systemic risk.

Spillover Coefficient for Eight Largest Insurance Companies



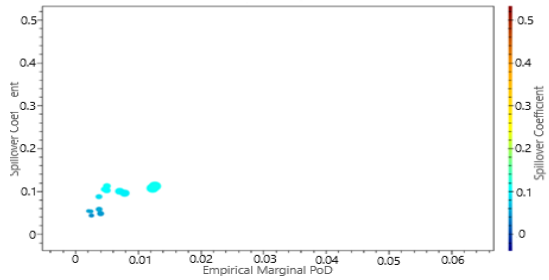
Marginal probabilities of distress and spillover coefficients reached their maximum during the GFC for banks. …

Marginal Individual Default Probability and Spillover Coefficient 11/28/2008



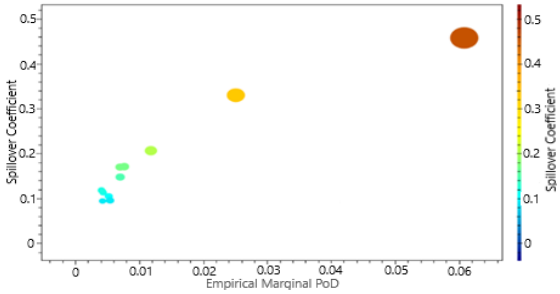
…and after a period of relative tranquility…

Marginal Individual Default Probability and Spillover Coefficient 12/31/2010



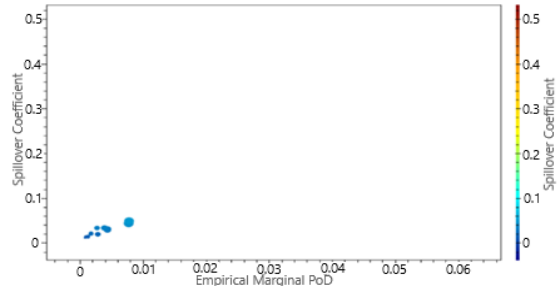
…tensions reemerged in 2012, triggered in the insurance sector…

Marginal Individual Default Probability and Spillover Coefficient 7/31/2012



… followed by a period of decreasing systemic risk.

Marginal Individual Default Probability and Spillover Coefficient 5/31/2017

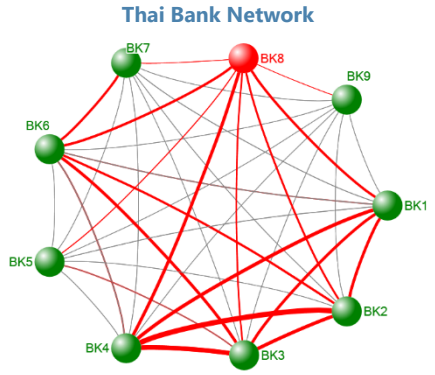


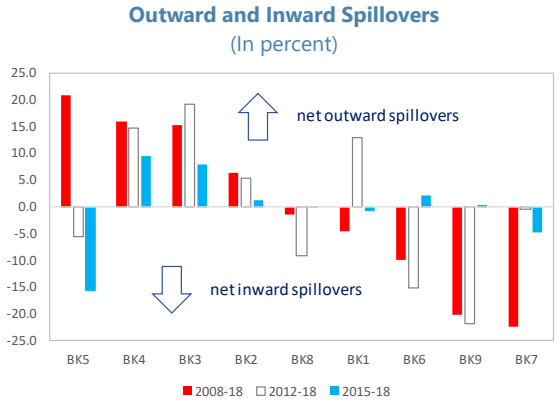
Sources: Moody's CreditEdge and IMF staff estimates.

[1] Extension to the whole financial sector based on Segoviano and Goodhart (2009), The Banking Stability Measures, IMF Working Paper 09/4. The top left chart shows the evolution since 2008 of the joint default probability of the largest five banks and of the Banking Stability Index (expected number of banks becoming distressed conditional on at least one bank being distressed). The top right chart shows the evolution of the spillover coefficient (probability of distress of a financial firm conditional on other firms becoming distressed) for the eight largest insurance companies since 2008. The remaining charts represent snapshots, at four different dates, of the combination of the marginal individual default probability (horizontal axis and bubble size) and spillover coefficient (vertical axis and bubble color) for the largest banks and insurance companies.

Figure 15. Thailand: Market Data-Based Measures of Interconnectedness in the Financial System

The spillover analysis reveals a fairly balanced network, with no entity strongly dominating. Spillovers are now less pronounced than in the past.





Source: IMF staff calculations based on the Diebold and Yilmaz (2014), On the Network Topology of Variance Decompositions: Measuring the Connectedness of Financial Firms, Journal of Econometrics 182, No. 1: 119–134. The analysis is based on daily equity returns from Bloomberg (September 2008 to September 2018).

FINANCIAL SECTOR OVERSIGHT

A. Macroprudential Policy

20. Significant progress notwithstanding, there is room to further strengthen the macroprudential framework and policies. The Financial Stability Unit (FSU) was created within the BoT in 2016 and has been building analytical tools and capacity for risk assessment. While not explicitly mandated, macroprudential authority lies primarily with the FIPC, a committee established under the BoT Act, with participation of the other supervisory agencies (the OIC and the SEC), independent external appointees, and the MoF. The BoT, via the FIPC, has full macroprudential supervisory and regulatory powers over commercial banks but needs the approval of the MoF to implement macroprudential measures related to SFIs.[6] Joint meetings between the MPC and the FIPC serve an important role in assessing risks to financial stability. Because the SFIs are owned and used by the MoF to promote economic development and fulfill government policies, the MoF has a conflict of interest as a member of the FIPC. The FIPC does not have any power over TCCs and CUs. The OIC and the SEC also play a key role in macroprudential policy (e.g., the SEC is active on market surveillance, and the OIC is currently assessing the systemic importance of insurers). The SEC and the OIC coordinate effectively with the BoT and share information and data through memoranda of understanding.

[6] The FIPC is in charge of macroprudential policy, has the power to monitor the implementation of supervision and examination of and policies concerning financial institutions, and is in charge of crisis management decision making..

(continued)

21. BoT's systemic risk analysis and monitoring are solid but could be improved with better data. Significant resources are dedicated to systemic risk monitoring and analysis, allowing well-informed decision making and ex-post analysis of policy measures. A more thorough analysis is hampered by lack of data, including dynamic information on borrowers' characteristics, LTV ratios,[7] as well as data on TCCs and CUs. The BoT is encouraged to explore the effect of several regulatory changes on banks' balance sheets such as IFRS 9 and the introduction of the new land tax.

22. While recent macroprudential measures appear to have been effective, some could be strengthened, and existing leakages could be minimized. To address financial vulnerabilities associated with household indebtedness, the FIPC introduced a maximum DTI ratio on credit cards and personal loans from commercial banks in 2017 and has used a hard limit on LTV that will be applied starting in April 2019. The DTI limit seems to have been effective in slowing loan creation by commercial banks for the riskiest categories of loans (Figure 16). The LTV limit will likely affect around 30 percent of borrowers and will not affect buyers that do not borrow domestically.[8] Given that housing prices have increased by 3.9-6.4 percent per year (depending on the type of property), on average, over the last 10 years, the authorities could consider assessing in due course the effectiveness of the LTV limits of 90 or 100 percent to ensure that they provide sufficient buffer for banks. The MoF approved the application of the LTV limit to SFIs in April 2019. However, important sources of leakages remain as the DTI limit on personal loans does not apply to SFIs, and TCCs and CUs are outside the scope of LTV and DTI measures.[9]

23. It is important to strengthen the FIPC's willingness and ability to act, its accountability framework and the macroprudential toolkit. To that end, the BoTA should be amended to: (i) narrow the membership of the FIPC, by removing representatives of the MoF and other supervisory agencies; (ii) provide the FIPC with a clear macroprudential mandate to help ensure that systemic risk is addressed primarily with macroprudential tools and, at the same time, make clear that the MPC could have financial stability as its secondary objective (with price stability being its primary objective); and (iii) reinforce the accountability mechanism for the FIPC to include hearings to an appropriate legislative body.[10] To enhance the toolkit it is key to: (i) ensure that all macroprudential tools are applied to SFIs (preferably by amending the Financial Institutions Business Act (FIBA)) and that BoT macroprudential regulations cover TCCs and CUs when relevant, without requiring the approval of

[7] This information is collected monthly at the inception of the loans for commercial banks (since 2008) and SFIs (since 2013). Monitoring the evolution through the life of the loan would help assess risks in the property market.

[8] Out of the 30 percent of borrowers, about 20 percent will need to increase their down payments to meet the LTV restriction of 100 percent. In addition, the remaining 10 percent of borrowers will need to reduce their LTV further to meet the tighter restrictions applied to certain types of properties. Foreign buyers are not allowed to borrow domestically, and can only purchase condominiums (accounting for 20–30 percent of the condominium market).

[9] There is only one SFI that issues credit card loans and, in November 2017, the BoT asked this institution to comply with the DTI on credit card loans. This institution-by-institution regulation for SFIs may facilitate leakages and will need to be revised if other SFIs start engaging in credit card lending. The BoT is assessing the benefits and costs of implementing DTI measures on personal loans to SFIs.

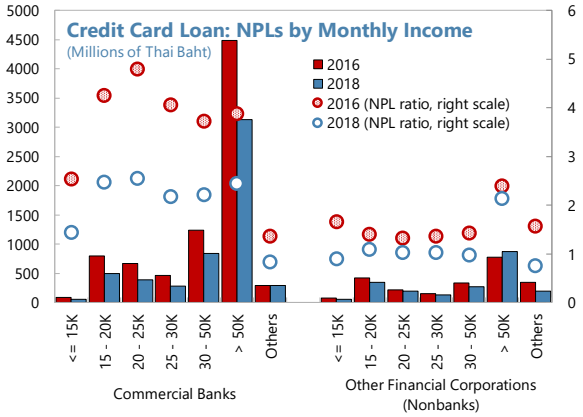
[10] The BoT currently prepares every six months a report on financial institution policies and delivers it to the MoF for referral to the Cabinet. In addition, when requested, the BoT has engaged with committees and subcommittees of the National Assembly that oversee economic and financial stability issues.

any external institutions (including by amending the BoTA and the Cooperatives Act); and (ii) impose an aggregate DSTI limit covering all loans to consumers and extending the existing DTIs to personal loans granted by SFIs, TCCs, and CUs.

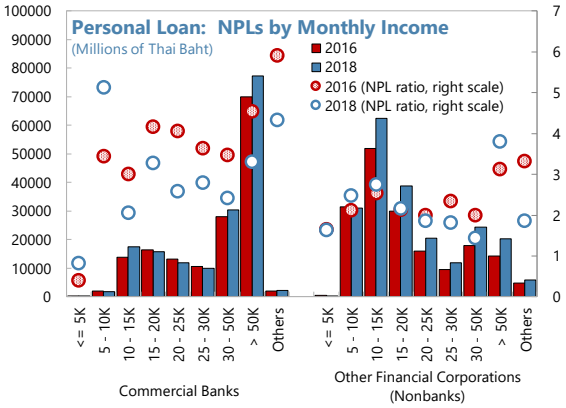
Figure 16. Thailand: Effectiveness of Macroprudential Policy Tools

The DTI limits appear to have been effective in slowing loan creating for the most risky category of loans.

NPL ratios on credit cards reached the highest in 2016, and declined after the introduction of the new credit limit.



NPL ratios for (unsecured) personal loans provided by banks have also declined.



Sources: Bank of Thailand and IMF staff calculations.

Box 1. Accountability of the FIPC

The FIPC is accountable to the BoT Board but is under no obligation to report to the Minister of Finance (Minister) or to Cabinet. According to the BoT Act, the FIPC reports to the BoT Board at intervals specified by the Board (section 28/10 of the BoT Act). The BoT in turn reports to the Minister every month via a written report in relation to the BoT's functions (section 60 of the BoT Act). Under section 61 of the BoT Act, the BoT is required to prepare a report every six months on financial institution policies and other matters relating to the functions of the BoT and deliver it to the Minister for referral to Cabinet.

The FIPC accountability mechanism could be improved by requiring the FIPC to report more directly and openly to appropriate public bodies. In line with the IMF code of good practices on transparencies in monetary and financial policy, the chair of the FIPC: "should be available to appear before a designated public authority". As stressed by BIS (2015)[1] and IMF (2012),[2] designated public authorities should ideally be the legislators. In the case of Thailand, it would be appropriate for the FIPC to report and be accountable to an appropriate legislative body (e.g., a subcommittee of the Senate), similarly to what is practiced, for instance, in the US or the European Union. The FIPC should still have a "duty to inform" the Cabinet periodically about its work. However, the FIPC should not have to explain itself to the Cabinet, and its ultimate accountability should instead be to an appropriate legislative body.

---

[1] Bank for International Settlements (BIS), 2015, Report on the impact and accountability of banking supervision

[2] International Monetary Fund, 2012, The Interaction of Monetary and Macroprudential Policies

B. Supervision of Banks and Specialized Financial Institutions

Commercial Bank Supervision

24. The oversight of the banking sector is strong. There have been significant enhancements in the legal framework since the last FSAP, resulting in high compliance with the Basel Core Principles (BCPs) for Effective Banking Supervision. In particular, the enactment of the Financial Institutions Business Act (FIBA) in 2008 established the BoT as sole supervisor of commercial banks, empowered it to issue regulations and undertake corrective action without MoF approval, and strengthened the tools for implementing preventive and corrective actions. The FIBA also led to effective supervision of conglomerates (Box 2). The BoT conducts consolidated supervision of conglomerates, which are typically structured with a bank as parent, covering their subsidiaries as well (e.g., insurance and asset management companies).

25. The BoT's corpus of regulations, guidelines, and supervisory manuals is comprehensive and enforceable, and its supervisory framework and practices provide the foundation for the continued development of risk-based supervision. Notifications and examination manuals increasingly focus on analysis of qualitative factors such as governance, risk management, and risk appetite statements to determine the bank's composite rating. The requirements are commensurate with the risk profile and systemic importance of banks, and the supervisors evaluate the effectiveness

of risk management policies, processes, and practices and instruct banks to make corrections where appropriate. Issuing best practices guidance and defining supervisory expectations would encourage the continued migration from auditing to risk analysis and facilitate corrective action based on qualitative factors.

26. Efficiency of enforcement actions would be increased by aligning FIBA requirements and BoT internal practices. The internal *Guideline for Enforcement of Prompt Preventive Action and Prompt Corrective Action* sets out that implementation of prompt preventive action (PPA) and prompt corrective action (PCA) measures by the BoT would occur in high-severity cases causing damage to the public interest. Under the FIBA, application of the measures described in the *Guideline* is not directly linked to specific benchmarks of bank financial condition. However, the BoT in its ongoing supervision ensures that its recommendations to banks for addressing weaknesses are implemented at an early stage. It will enhance effectiveness and transparency if FIBA and *Guideline* requirements for implementing PPA and PCA measures are aligned and applied at an early stage. The internal Guideline and FIBA both require notification to the MoF of action taken to address bank situations that may "cause damage to the public interest". The definition of “damage” covers a wide-range of circumstances and violations of law, thus requiring notification to MoF in most cases. The definition should be narrowed to highlight to MoF systemic impact or bank failure cases.

27. The operational independence of the BoT has been significantly strengthened since the previous FSAP, yet there remains room to further enhance it. While the assessors did not observe evidence of BoT’s actions being unduly influenced, there are factors that have the potential to interfere with the independence of the BoT, such as the involvement of the MoF, Cabinet, and other supervisory agencies in prudential and crisis management issues**.** In this context, the mission advises to remove representatives of the MoF, OIC, and SEC from the FIPC.[11] It also recommends reducing the involvement of the MoF in decisions related to PPA and PCA even though there is no evidence that this has impeded prompt supervisory action by the BoT. In addition, the FSAP team is of the view that the negative net worth of the BoT could pose risks to the independence of BoT and make it vulnerable to political interference, which could in turn have an impact on supervision.

28. The BoT sets prudent and appropriate capital adequacy requirements for banks, including for foreign bank branches, that reflect the risks undertaken by banks in the markets in which they operate. The components of capital absorb losses, and the capital requirements are generally stricter than Basel standards. That said, a more integrated approach towards Pillar 2 could be adopted, starting by developing a methodology to set individual bank capital ratios as part of the risk-based supervisory framework.

[11] The FIPC has the power to monitor the implementation of supervision and examination of financial institutions. The FIPC, however, does not get involved at the granular level in day-to-day supervision and regulation of individual entities, but looks at general outcomes of the supervision and regulation as well as policies concerning financial institutions.

29. Banks' asset classification and loan management practices should be strengthened further. The definitions of loan restructuring and rescheduling and the current practices surrounding NPL identification are weaker than international standards. The definition of forbearance should include the financial difficulty of the borrower (and not be conditioned on the bank making a loss), the probation period for restructured exposures should be a minimum of 1 year (rather than 3 months), and the practice of allowing an upgrade to take place when restructuring or rescheduling is granted should be avoided. The BoT supervisors are well aware of these gaps and have issued a regulation to be implemented once IFRS 9 becomes effective in 2020. In the meantime, onsite and offsite supervisory intensity has been increased. BoT supervisors monitor asset quality issues at a very granular level in individual banks and at the banking level. In addition, the impact of the shortcomings is mitigated by the high levels of provisioning compared to international peers. Current provisioning coverage levels (total provisions/total NPLs) stand at 140 percent.

Box 2. Financial Conglomerate Supervision

The BoT's consolidated supervision and enforcement authority has been enhanced by the FIBA, adopted in 2008. It establishes the BoT as supervisor for conglomerates with consolidated supervisory authority and sets prudential standards, conforming with the Joint Forum Principles for the supervision of financial conglomerates. The BoT has the power to supervise and examine the bank, its parent company, subsidiaries, and affiliates as if they were the same juristic (legal) person. The BoT: (i) approves the establishment of the conglomerate, its subsidiaries, and the business scope of the financial business group; (ii) supervises qualitative and quantitative aspects by assessing risks arising from group members; (iii) approves directors, senior management, and advisors of the group and performs fit-and-proper reviews; (iv) supervises and examines entities in the financial business group on a consolidated basis, and (v) requires conglomerates to submit data and reports to facilitate supervisory tasks. The supervisory process includes an assessment of group risks and risk management, and oversight includes requirements on the conglomerate structure, scope of permissible activities and entities within the group, capital adequacy requirement, risk management, and the group's reporting and auditing. FIBA provides the BoT a broad range of corrective action powers that can be enforced at the parent level or through the bank. Because prompt corrective action in a conglomerate would, at present, necessarily include intervention in its member bank, such interventions are subject to MoF notification as with other interventions in banks.

SFI Supervision

30. The regulatory framework for SFIs is complex, with responsibilities divided between the MoF and the BoT. The Fiscal Policy Office (FPO) and the State Enterprise Policy Office (SEPO) in the MoF act as the policymaker and the owner, respectively. The supervision and regulation of SFIs were transferred to the BoT in 2015. The BoT is designing a tailored prudential regulatory framework reflecting the SFIs' mandates, while considering input from the SEPO, the FPO, and the MoF. The work is proceeding in phases, with the ongoing Phase I focusing on governance, capital and liquidity reserve requirements, credit processes and single lending limits, and accounting and information disclosure. Phase II will focus on advising the MoF on setting financial service channels to promote financial inclusion while enabling SFIs to meet their mandate with sound risk management.

31. Establishing a competitively neutral regulatory and supervisory framework for commercial banks and SFIs and the avoidance of reputation risk for the BoT are important. Despite a general perception that the BoT is supervising SFIs the same as commercial banks, there are significant differences between SFI and commercial bank supervision. The BoT needs approval of the MoF to issue regulations related to SFIs and to take corrective actions. These requirements constrain the operational independence of the BoT. The tailoring of regulations could lead to forbearance, loosening of standards, and/or inconsistency in regulatory treatment between institutions with similar activities and risk profiles. The three largest retail deposit-taking SFIs should be brought under regulation and supervision at par with those for commercial banks. A road map with milestones would facilitate the transition over 3–5 years.

C. Insurance Sector Supervision

32. Insurance penetration (the ratio of premiums written to GDP) is high by regional standards – 5.6 percent in 2017 – and is fueled by improved supervision of insurers, growing per capita income, and expectations of longer-term economic growth. The Thai market is dominated by the life sector which accounts for approximately 73 percent of net premiums written. Approximately 72 percent of this total is made up of individual policies – largely simple endowment polices encouraged by government tax incentives. A further 20 percent are group policies, largely associated with employee benefit packages of employers. The non-life sector accounts for approximately 22 percent of premiums written. The largest portion of this business is voluntary motor insurance policies which are frequently associated with vehicle financing and account for roughly 50 percent of the total non-life premiums written.

33. Continued development and increased sophistication of the sector are dependent on continued economic growth, increased financial literacy, and understanding of and trust in insurance products. The OIC is aware of these challenges and is currently moving to address them in its development plans. The prominent size of the life insurance industry appears to be related to the use of endowment policies for retirement savings purposes by many consumers. This is a feature common to some other markets in the region (e.g., Vietnam) and may also be related to the lack of sophistication and strength of the pension sector. For example, annuities are not prevalent in the Thai market and are not offered currently as payout options for pensions. Further developing the annuity market would support development of the Thai pension system (see below section on pension) and contribute to developing the long term fixed-income market.

34. Insurance supervision in Thailand has evolved significantly over the past decade, largely due to measures introduced in a series of multi-year insurance sector development plans put in place by the OIC beginning in 2006. The plans aimed to benefit and protect insurance policyholders by promoting business opportunities in the insurance sector while enhancing the supervisory regime relative to international standards. Over the last seven years, these plans have resulted in major changes and improvements in several areas of supervision. These include the recruitment, development, and retention of qualified and effective supervisory staff and the implementation of a more comprehensive and effective risk-based supervisory framework.

35. The process to develop the insurance sector in recent years has involved extensive and systematic consultations with industry to ensure that new requirements in key areas embrace international standards but are also appropriate to the Thai market. Such requirements include those related to general governance and internal controls; enterprise risk management (ERM) and Own Risk and Solvency Assessment (ORSA); capital, valuation, and reserving practices; disclosures to the public and the market; investment and reinsurance activities; and supervision of conduct of business including over intermediaries, countering fraud, and strengthening penalties and punishment. Improvements have also been made in information exchange and cross-border cooperation.

36. OIC supervisory processes should review the substantial new information and provide feedback to insurers. Given the largely principles-based manner in which some of the new regulations were enacted, variations in compliance and the granularity and quality of reporting can be expected across insurers. The new information that will be reported presents an onus on OIC to identify deficiencies, but also creates an opportunity for the OIC to highlight best practices. Working with the industry, the OIC can enhance the overall performance of insurers in respect of these new requirements as they embed them into more effective business practices. Thus, once the new reporting has begun, and at least for several reporting cycles thereafter, it is recommended that the OIC consider thematic or horizontal reviews to identify outliers in practice, at both ends of the spectrum, and consider workshops with the industry to aim for necessary improvements.

37. Reinsurance, as a primary risk mitigation tool available to insurers operating in Thailand, will benefit from open and more direct access to global resources and expertise. As was seen from the country's floods in 2011, insurers operating in the Thai market benefited from access to reinsurance, but a geographic concentration of risk was still maintained through a domestic Thai reinsurer. Insurers operating in Thailand can procure reinsurance in global markets, and it is important that their ability to do so remain unconstrained. The Ministry of Finance has agreed to implement an economic development strategy that would enhance the competitiveness of reinsurance in Thailand by encouraging qualified foreign insurance or reinsurance companies to apply for reinsurance licenses in the form of a branch of a foreign insurance company.

38. Consideration should be given to vesting more supervisory authority for key supervisory decisions solely with the OIC, rather than with the Minister of Finance and Cabinet. Current limits on the operational independence and accountability of the OIC are inconsistent with the Insurance Core Principles. Although much progress was made with the establishment of the OIC as a separate supervisory authority, its independence can be further improved by: (i) repealing or amending Section 45 of the ICA which allows the Minister of Finance to override any decision of the OIC; (ii) moving toward appointment of all commissioners based on suitability criteria and technical qualifications rather than their positions in other government organizations; (iii) giving the OIC, rather than the Minister, the authority to set fee levels on the industry; and (iv) developing a more formal and elaborate accountability framework for the OIC including, for example, a publicly available, multi-year strategic and operational plan that includes a set of performance measures, and a publicly-available

annual report designed to report on the OIC's progress in meeting the goals and objectives set out in the strategic and operational plan.

39. Licensing and suitability requirements should be updated. Licensing requirements should be strengthened in anticipation of the first new applications in years to assure clarity, consistency, and timeliness of licensing decisions and procedures. Suitability requirements for all real-person beneficial owners of insurers should also be strengthened, particularly with respect to identifying all such individuals and assessing their financial capability and integrity. The primary insurance legislation should also include an appropriate definition of control.

D. Assessment and Oversight of Financial Market Infrastructures (FMIs)

40. Thailand has a well-developed payment, clearing, and settlement infrastructure – the national payments system (NPS) – which consists of a consolidated set of systemically important FMIs, as well as retail payment systems. BAHTNET is the real-time interbank gross payment and settlement system operated by the BoT and is the backbone of the infrastructure where the final payments of various markets are settled. The TSD is the sole central securities depository and the securities settlement system for government securities, corporate bonds, and equities. The Thailand Clearing House (TCH) acts as the central counterparty (CCP) for bonds, equities, and derivatives transactions traded on the respective exchanges. The TSD and the TCH are fully owned subsidiaries of the SET.

41. The efficient functioning of the NPS with easy-to-use, safe, and innovative payment instruments provided through transaction accounts has played an important role in expanding financial inclusion in Thailand. The role played by the FMIs has been crucial in this regard to mitigate risks and foster financial inclusion by enabling the settlement and transfer of value across all sectors of the economy. In facilitating these objectives, BAHTNET (the interbank payment system and the backbone of the infrastructure) provides settlement of the funds leg of various markets in central bank money. The TSD as the sole CSD and SSS of the securities market serves the needs of the securities market and its participants and has contributed to the development of the securities market in Thailand.

42. BAHTNET is a sound system and has a high degree of observance of the Principles for Financial Market Infrastructures (PFMI). BAHTNET has a well-founded, clear, transparent, and enforceable legal and regulatory framework governing its operations and its participants' rights and obligations. The BoT has clearly identified the risks borne by BAHTNET and implemented policies, procedures, and controls (which are reviewed annually or when there is a change in the system) to monitor and manage those risks. BAHTNET is therefore subject to comprehensive and transparent risk management frameworks comprising clear policies and guidelines, governance arrangements, and operational systems including regularly tested default and business continuity procedures. The BoT has developed and implemented a comprehensive operational risk management framework covering technology, risk factors, human resources, monitoring, control, and periodic testing. The operational objectives stipulated in the relevant regulations on BAHTNET have been fulfilled.

43. Settlement of payment transfers in BAHTNET is achieved in real-time and in central bank money. All transactions once settled in BAHTNET are deemed final and irrevocable, as well as bankruptcy remote. BAHTNET provides efficient tools to monitor and manage liquidity, such as queuing mechanisms, gridlock resolution, securities requirements for settlement of net settlement files, and throughput guidelines. Liquidity risk in BAHTNET is minimized due to the provision of an Intraday Liquidity Facility (ILF) by the BoT to the participants. Delivery versus payment (DVP) and payment versus payment (PVP) settlement mechanisms are used for the settlement of securities and foreign exchange transactions, respectively. BAHTNET has fair and open access criteria for participation, which comprehensively considers each participant's risk management capability, the stable and efficient operation of BAHTNET, and the possibility of systemic risk.

44. There are nonetheless areas where the level of observance of BAHTNET with the PFMI could be further improved. It is recommended that the operator of BAHTNET verify that participants do not post their own debt or equity securities as collateral. BAHTNET should consider concentration limits to avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effect. The current ILF requires that participants post collateral at the beginning of the day in order to get sufficient intraday liquidity. It is recommended that BoT include an automated collateral management system in its next generation of BAHTNET in order to limit the opportunity cost of posting collateral that might not be used to get intraday liquidity. The periodic tests of business continuity plans for BAHTNET should include scenarios centered around the interdependencies between TSD, BAHTNET, and TCH.

45. The TSD also largely observes the PFMI and operates in a sound manner. It is regulated under the provisions of the SEA and provides for finality and irrevocable settlement of securities transactions. Custody risk is mitigated through sound accounting, audit, and reconciliation procedures. DvP 1 model is used for the settlement of OTC government and corporate bond trades. The settlement of exchange trades (bonds, equities, and derivatives) is conducted in a guaranteed mode with the TCH acting as a CCP for both the securities and funds legs and with the TSD carrying out the securities settlement based on the net securities clearing file received from TCH. The TSD is not exposed to any default risk of the depositors as TCH (as the CCP) bears all counterparty credit and liquidity risks for both the securities and funds legs.

46. There is room for further improvement in the legal framework and risk management framework of the TSD. The authorities are encouraged to strengthen the legal framework to protect the securities balances of depositors and customers held in TSD's name, in the event of TSD's bankruptcy, and to clearly establish the beneficial ownership rights of securities belonging to depositors and investors. The scope of the risk management framework should be made more comprehensive by explicitly recognizing the general business and investment risks that TSD is exposed to. In this regard, TSD should hold the investments of its assets in its own name rather than in the name of SET to ensure that proper segregation of investments is carried out and its assets are not used for setting off claims of its parent. Further, own assets of TSD should be clearly segregated from the securities balances of its depositors and customers. The governance arrangements of the TSD board could be improved by submitting the board's annual review of its performance to the SEC. Such

a measure would enable the regulator to monitor the performance of the TSD board and ensure that it is adhering to the charter of the board and is fulfilling its mandate.

47. The scope of the enterprise-wide risk management framework should be made more comprehensive by including detailed effective recovery tools in the existing high-level recovery and wind-down plan. The high-level recovery and wind-down plan should be enhanced by taking into account the additional guidance provided by the international standard setters – the Committee on Payments and Market Infrastructures (CPMI) and International Organization for Securities Commissions (IOSCO) – and should contain details of a set of recovery tools that are comprehensive and effective in terms of reliability and timeliness, with a sound legal basis, and have a documented operational plan. A set of documented operational guidelines should be drawn up and endorsed by the TSD board. Such a plan should be tested on a periodic basis. The high-level recovery and wind-down plan should also include detailed measures for raising and infusing additional capital. In addition, periodic tests of business continuity plans for BAHTNET and TSD should be carried out to ensure completion of settlement with specific scenarios, taking into account interdependencies between TSD, BAHTNET, and TCH.

48. The BoT and the SEC appropriately cooperate in the regulation, supervision, and oversight of the FMIs in Thailand. The authorities have executed a memorandum of understanding, which acknowledges each authority's statutory responsibilities towards the oversight, supervision, and regulation of the FMIs under their respective jurisdictions and outlines the sharing of information between the authorities on issues relating to the safe and efficient functioning of the FMIs.

E. Capital Markets Regulation

49. Thailand's securities market is fairly well-developed in terms of completeness and depth, with active participation of retail, institutional, and foreign investors. The SET Group provides exchange platforms where a diverse variety of products are traded, including stocks, debt instruments, exchange-traded funds, and derivative contracts. The equity market presents a market capitalization of THB 17 billion (USD 541 billion), 107% of GDP, comparing favorably with other ASEAN markets. During the past several years, initial public offerings have averaged 20 per year. Asset management is a substantial and growing component of the capital market. The mutual fund industry has experienced strong growth, with more than 25 asset managers and 1,382 mutual funds with total assets of THB 4.68 trillion (USD 150 billion). The Thai market has developed industry-led associations, some of them SROs, providing industry guidance, public education, training for industry participants, data gathering, and the execution of self-regulatory and supervisory tasks. Pending issues in terms of market development include greater participation of the population in the securities market and diversification of the bond offerings to longer tenors.

50. The asset management industry will likely continue to grow as the result of the high savings rates of an aging population. Growth opportunities include the provident funds scheme which provides a channel for employers and employees to contribute to a pension saving scheme (see pensions section below). If the funded pension system is improved to better serve the objective of

providing an efficient pension saving mechanism, it may represent the most important growth factor driving asset management industry and further capital market growth going forward.

51. The SEC has significantly improved its level of implementation of the IOSCO Objectives and Principles of Securities Regulation. Thirty-five of the thirty-seven IOSCO Principles reviewed in this assessment have been rated fully or broadly implemented, a significant improvement from the previous assessment. Amendments to the SEA addressed issues in the legal definition of insider trading and of market manipulation and empowered the SEC to bring civil enforcement actions and obtain money penalties for violations for some, but not all, misconduct.

52. Amendments to the SEA and the Public Limited Companies Act (PLCA) have improved the rights of minority shareholders and improved protection of investor assets held by a failed securities company. Changes include improvements to the participation of shareholders in shareholders' meetings and the inclusion of private class action rights. Additionally, private sector initiatives such as the creation of the Institute of Directors and the Corporate Governance Report have contributed to improving corporate governance of Thai listed companies. The SEA was amended to provide that investor assets held in an account at a securities firm that fails cannot be used to satisfy the debt of the firm.

53. The SEC has obtained the authority to provide assistance to foreign regulators and to collect information in this context. In response to a recommendation made in the previous IOSCO Assessment, the SEA was amended to enable the SEC to assist foreign regulators even when there is not a violation of the Thai law or when the SEC has no independent interest in the matter. This authority enabled the SEC to become a signatory to the IOSCO MMoU Concerning Consultation and Cooperation and the Exchange of Information. In 2018, the SEC carried out eight information-sharing activities with foreign counterparties.

54. SOEs listed on the SET will be audited by SEC-approved auditors beginning with their 2020 annual financial statements. Previously, all SOEs, including publicly listed companies, were audited by the Thai Office of the Auditor General. The use of SEC-approved auditors by all listed companies will improve the consistency of financial statements of listed companies and enhance the ability of the SEC to oversee the audit process.

55. Recent amendments to the SEA enacted by the National Assembly in February 2019 should further enhance the capacity of the SEC. One important amendment provides the SEC with expanded authority to oversee the SET. With this new authority, it is recommended that the SEC consider undertaking a comprehensive review of SET rules covering trading and the fees for trading, clearing, settlement, and depository services. The review should also examine whether there is a need for better transparency of the methodology used to calculate these fees. An examination of SET trading rules should consider whether current market practices on commissions, execution fees, share prices, and lot sizes are consistent with international best practices. This review should include consideration as to whether the current widespread practice of companies of setting stock prices at extremely low levels (as low as 2-5 baht per share of common stock) in conjunction with mandatory

minimum tick sizes contribute to market instability, high levels of day trading, and an environment susceptible to market manipulation.

56. Transparency in the OTC bond market should be improved. The OTC bond market consists largely in the trading of government bonds, with domestic banks acting as the main participants. The Thai Bond Market Association (TBMA) functions as the primary monitor of OTC bond trading. The TBMA has adopted explicit requirements for post-trade reporting, and it publishes all OTC bond trades, including price and volume. However, there is no comparable pre-trade transparency. The TBMA requires market participants to provide "indicative quotes" by 4:30 pm, applicable for the next trading day. As market conditions may change overnight, these pre-trade indicative quotes provided little meaningful transparency for trading the following day. In addition, these indicative quotes are used to calculate points on the daily yield curve used throughout the financial sector to price assets. Therefore, the SEC should require that TBMA revise its rules on pre-trade quotes and require same-day quotes. Also, the yield curve should be calculated using only actual reported trades.

57. The SEA should be amended to enable the SEC to institute civil proceedings for all categories of misconduct that it concludes require an enforcement action and sanction. The creation of a civil enforcement procedure to address some categories of misconduct has been an important addition to SEC authority. However, the civil enforcement action is available only for insider trading, market manipulation, and violations based up on false statements. A wide range of other violative conduct, most of which would usually be considered less significant, is punishable only by an administrative sanction or referral of the matter to Thai law enforcement agencies. Because criminal prosecution is more difficult and time consuming, the vast majority of SEC referrals have not led to successful prosecutions. Faster and proportionate enforcement actions are best pursued through civil litigation.

58. The SEA should be amended to transfer from the Minister of Finance to the SEC Capital Market Supervisory Board (CMSB) final authority to approve licenses and to revoke licenses. Regulators should be independent when making operational decisions, such as whether to grant, suspend, or revoke a license. The CMSB should have final authority to approve licensing applications for all participants in the capital market. Approval authority should also include the authority to suspend or revoke a license for good cause. Licensing authority should encompass securities intermediaries, asset managers, investment advisors, distributors of securities, credit rating agencies, auditors of listed companies, self-regulatory associations, relevant trade associations, securities exchanges, and providers of securities infrastructure services.

59. SEC and BoT should develop a roadmap to implement mandatory centralized clearing of OTC derivatives contracts. Currently OTC derivatives contracts consist primarily of FX and interest rate products between banks. These contracts are cleared bilaterally. While the BoT requires banks to report all OTC derivatives to the BoT, there is no requirement for central clearing. Per the IOSCO Principles, centralized clearing should be mandatory. Although the Thai authorities have indicated that current trading volumes are low, the assessors consider that the average yearly gross market value of the OTC derivative market of THB 687 billion (USD 21.9 billion) is a considerable amount in absolute terms and in comparison with most emerging markets. It is noteworthy that TCH already operates as

a central counterparty for exchange traded derivatives. Since the IOSCO Principles recommends an incremental approach toward central clearing as the volume of trading in the OTC market increases, the FSAP team recommends development of a plan for TCH to clear OTC derivatives, commensurate with increased trading volume, as part of a comprehensive standardized structure for centrally cleared derivative contracts.

F. AML/CFT

60. The authorities continue to address the AML/CFT shortcomings identified by the Asia Pacific Group in the 2017 mutual evaluation report (MER). The authorities have formalized the adoption of a risk-based approach to AML/CFT supervision. Fit-and-proper requirements for financial institutions have also been enhanced through self-declarations by bank management and BoT procedures for verification with records of law enforcement agencies. The quantity and quality of suspicious transactions reports have broadly risen in the last three years, but almost all such reports are filed by banks. The MER highlighted good-quality intelligence products produced by the Anti-Money Laundering Office (AMLO) in relation to domestic terrorism and terrorist financing (TF). The 2016 Counter-Terrorism and Proliferation of Weapons of Mass Destruction Financing (CTPF) Act also criminalized proliferation financing (PF), designated it as a predicate offense to money laundering, and made PF a subject of suspicious transaction reporting requirements for financial institutions. To further enhance the quality of TF and PF investigations, the authorities are developing a central database of foreign terrorist fighters with access to advance passenger information systems. Efforts to reinforce cooperation and facilitate exchange of financial intelligence and information at the domestic and international levels are being pursued to counter TF and PF.

61. Further efforts are needed to enhance the effectiveness of Thailand's AML/CFT regime to mitigate ML/TF threats in the country (e.g., corruption, drug trafficking, tax evasion, and domestic and transnational terrorism). Shortcomings identified in the 2017 MER remain pending: (i) lawyers are not covered under the AML/CFT framework; (ii) verification of beneficial owners is not required unless ML/TF risks are determined; (iii) there is no requirement to identify the source of wealth of politically exposed persons (PEPs); and (iv) financial institutions are not required to report suspicions of ML/TF on transactions between government entities, including state-owned enterprises. The authorities are strongly encouraged to pass legislation in the short term to address these deficiencies. AMLO's capacity to conduct AML/CFT supervision, especially in the financial sector, should continue to be enhanced and directed at the risks, as identified in the sectoral risk assessments. Proposals to create a government-issued PEP list should adhere to the FATF guidance on a PEP list of domestic positions or functions (as opposed to a PEP list of actual names).[12] While sanctions for AML/CFT violations (i.e., fines and warnings) have increased in 2018, further efforts are needed to ensure that they are dissuasive and proportionate. Leveraging on the provisions of the CTPF Act and TF-related intelligence generated, the authorities should continue to pursue more terrorist, TF, and PF investigations and prosecutions.

[12] FATF, Guidance on Politically Exposed Persons (June 2013).

CRISIS MANAGEMENT AND RESOLUTION

62. Thailand has in place many of the features needed to manage bank distress and failure. The legal powers for dealing with emerging stress in banks are robust, and the BoT has policies and systems in place to identify and respond to bank stress. Similarly, some of the key elements of the structure needed for bank resolution are in place and have been strengthened since the last FSAP. However, the law has room for improvement—for instance regarding clarity of resolution objectives, triggers, powers, and safeguards. The authorities are encouraged to undertake a comprehensive review of the BOTA and FIBA with a view to better aligning the resolution framework with international standards, particularly the Key Attributes.

63. An important element in responding to bank distress is maintaining a system of Early Warning Indicators (EWIs). The BoT has developed a reasonably comprehensive EWI framework for the banking system. Building on this framework, the BoT is encouraged to develop more comprehensive triggers for PPA, PCA, and banks' recovery plans. The BoT has based the triggers for PPA and PCA on its supervisory ratings, but the triggers occur at relatively advanced stages of deterioration, creating a risk that PPA and PCA might not be initiated at a sufficiently early stage. The BoT is encouraged to set the triggers at earlier stages and develop more comprehensive triggers and supervisory responses. Contingency plans should be developed and tested regularly by the BoT.

64. The BoT has required D-SIBs to develop recovery plans by June 2019 and other locally incorporated banks to do so by June 2020. The approach being taken by the BoT on recovery planning is consistent with good international practice. To further enhance the quality of recovery planning, the BoT could issue further guidance to banks following the review of recovery plans in 2019. Regular testing of recovery plans will be important.

65. The bank resolution framework should be improved. The resolution framework needs to be strengthened in relation to resolution objectives, triggers, powers, and safeguards to align the resolution framework with international principles and good practice. Crisis management decision-making powers are vested in the FIPC, which includes the MoF and external experts, among others. The mission recommends that the responsibility for resolution decision making should be moved to a body within the BoT (without external persons on it) to help ensure the BoT's operational independence, facilitate prompt decision making by those with responsibility for and expertise in resolution, and avoid dilution of institutional accountability. Resolution functions should be vested in the BoT, with the Financial Institution Development Fund (FIDF) only responsible for resolution funding (as opposed to its existing responsibilities, which, in addition to resolution funding, include the implementation of resolution decisions made by the BoT). Cross-agency consultation on crisis management and financial stability matters would best be achieved through the establishment of a Financial Stability Committee (FSC). This arrangement should be supported by a Memorandum of Understanding between the agencies that sets out responsibilities and coordination arrangements for bank resolution and crisis management.

66. The BoT has taken several steps to develop bank resolution capacity, including establishing a dedicated resolution unit. Further progress is needed to establish comprehensive bank resolution guidance within the BoT and across other relevant agencies (especially the FIDF and MoF). Once generic resolution guidance has been developed, the authorities will need to develop the policy frameworks to undertake bank resolvability assessments and prepare resolution plans for D-SIBs and potentially the larger medium-sized banks. In this context, the BoT is encouraged to work with the home authorities of foreign banks in Thailand to strengthen cross-border cooperation arrangements for bank recovery and resolution.

67. The ELA arrangements should be strengthened to avoid risks of delays in decision making and moral hazard. In situations where the stability of the financial system is at stake, the BoTA requires the BoT to obtain approval of the FIPC and Cabinet to provide ELA. Under current arrangements, the risks of delays in decision-making can be mitigated by avoiding the involvement of a full Cabinet. However, given that government involvement in ELA could give rise to the presumption of taxpayer-funded bail-out of banks in distress, this arrangement creates significant risks for the effective operation of ELA and exacerbates moral hazard. Accordingly, the BoTA should be amended to require the BoT to obtain Ministerial or Cabinet approval for ELA only when there is a high possibility that a government indemnity will be sought (even though it may be difficult in some circumstances for the BoT to assess upfront whether a government indemnity is needed). Finally,, the BoT's operational capacity for providing ELA should be further strengthened.

68. The DPA currently operates as a 'pay box' scheme,[13] but its tools and funding should be enhanced. In particular, the law should be amended to enable the DPA to use its funds for purchase-and-assumption transactions and other forms of resolution (on a 'least cost' basis), and a formalized funding line should be established with the MoF or BoT (if the latter, on a government-indemnified basis). It would be desirable to undertake a cost-benefit analysis over the medium-term on the merger of the DPA and FIDF, given the parallels in their respective functions, to streamline the resolution responsibility.

69. The amendments to the BOTA in 2018 formalized the FIDF as the entity through which systemic bank resolutions are funded. Additional modifications should be made to these arrangements to better align with international guidance, including the need for loss absorption by shareholders, subordinated creditors, and some categories of senior unsecured creditors (subject to a systemic stability test). If the BoT provides funding to the FIDF, it should do so only under a formal indemnity from the Government.

70. The early intervention and resolution frameworks for SFIs should be strengthened and aligned broadly with those for commercial banks. The BoT has the power to require preventive or corrective actions of an SFI but only with the approval of the MoF. Policies and procedures for early intervention and resolution should be established, including recovery planning. There is no

[13] The DPA performs some functions beyond payout, such as managing the liquidation process and being a member of the Control Committee. However, it does not have the legal capacity to use its funds for other than payout. It is therefore regarded as being a 'paybox' scheme.

established resolution regime for SFIs, including a resolution authority, resolution powers, and associated safeguards. This leaves government-funded bail-out as the only option for dealing with a financially distressed SFI (with the fiscal risks and moral hazard attendant in that situation) under existing law, or the need to enact emergency legislation at the time to provide for alternative resolution options. Neither is satisfactory. The resolution framework of SFIs should be formalized, along with the development of a funding arrangement for ELA, as well as bringing retail deposit-taking SFIs within the deposit insurance scheme. Resolution plans for all SFIs should be established, with particular emphasis on those with deposit-taking functions and of systemic importance. The resolution plans should be tested on a regular basis.

Institutional Arrangement for Coordination

71. The establishment of an overarching body (e.g., a Financial Stability committee [FSC]) would strengthen cooperation, coordination, and information sharing among the agencies.[14] The FSC should be outside the BoT, with supervisory agencies, the DPA, and the MoF represented by their heads and a nominated deputy.[15] It would provide a forum for the regular exchange of information on and coordination in respect of all financial sector policy and regulatory issues, as well as being the primary coordination body in a financial crisis. The FSC would not have binding powers. However, the FSC would have the power to issue recommendations with a "comply or explain" mechanism over all member regulators. The power would help reduce the inaction bias by allowing the FSC to encourage the relevant regulators to take action, while maintaining their operational independence. There should be a transparent process for the FSC to issue recommendations and for the regulators to explain if they don't follow the recommendations. This arrangement would ensure that coordination between its members remain effective. The functions and powers of the FSC, the responsibilities of each member, and the FSC's obligation to publish annual reports on its deliberations should be established in law.

72. The FSC would help address the potential conflict of interest and strengthen further the accountability mechanisms present in the existing arrangements, including in the FIPC. The FIPC is an internal committee of the BoT, established under the BoT Act (BoTA) with participation of the OIC, the SEC, five independent external appointees with market expertise, and the MoF. The participation of other agencies in the FIPC (representing 3 out of the 11 members) and the presence of external appointees has so far helped ensure an effective oversight of an increasingly interconnected financial system. However, since the MoF is the owner of all SFIs and several large commercial banks, it has a conflict of interest in the decisions taken by the FIPC and can potentially use its seat to gather information on future decisions and convince other members against taking

[14] The FSC would enhance further the domestic coordination arrangements that are currently taking place through the three-regulator steering group comprising the BoT, SEC, and OIC. The three-regulator steering group is a non-statutory body that meets at least quarterly. Secretaries General as well as high-level executives of the BoT, SEC, and OIC provide a regular platform for these regulators to discuss policy issues.

[15] This broader membership would enhance further the domestic coordination arrangements that are currently taking place through the FIPC, the Three-regulator steering group comprising the BoT, SEC, and the OIC, as well as through the cross directorships in the supervisory agencies.

action. Furthermore, MoF's participation in meetings and being a party to the deliberations in the FIPC could weaken its ability to perform an objective ex post assessment of the decision taken by the BoT. In addition, the presence of the SEC and the OIC can potentially dilute accountability and delay decision making. Narrowing the membership of the FIPC and shifting the domestic inter-agency coordination to the FSC would help address these challenges.

FINANCIAL SECTOR DEVELOPMENT: PROGRESS AND CHALLENGES

73. Thailand's strong, even-handed regulation and supervision of the financial sector have supported the development of a deep, diverse, and inclusive financial sector. As noted above, financial sector assets grew from 183 percent in 2007 to 271 percent of GDP at end-2017. Growth has been particularly high in the non-bank segments – SFIs, financial cooperatives, capital market, mutual funds, and insurance companies – which has increased their share of financial sector assets from 44 percent in 2007 to 54 percent in 2017 and promoted greater inclusion. Thailand's financial inclusion indicators have continually improved, e.g., with 82 percent of adults in Thailand having a formal financial account as of 2017, up from 78 percent in 2014 and 73 percent in 2011. This compares with a coverage of 71 percent in the East Asia and the Pacific region and 73 percent among upper middle-income countries.

74. This progress notwithstanding, significant financial sector development challenges remain. As in most countries, poor households are more likely to be excluded from the formal financial sector. Among adults in the richest 60 percent of households, 16 percent don't have a formal financial account, compared to 22 percent of those in the poorest 40 percent of households. While not fully covered by the present FSAP Update, the governance and role of SFIs continue to be problematic.[16] SFIs generally have legal mandates to provide financial products and services to sectors of the economy that are believed to have limited access to products and services of commercial banks or other private companies at an affordable price. In practice, however, SFIs to varying degrees compete directly with commercial banks and typically benefit from government subsidies and often offer below-market interest rates in doing so, thus distorting financial resource allocations. SFIs also have weaker governance than commercial banks. For example, SFI boards are composed mainly of government officials, who may not have any expertise related to the financial sector. The present FSAP team encourages the Thai authorities to continue to implement the recommendations from the previous FSAP and World Bank and IMF technical assistance projects to reduce the distortionary effects of SFIs and to improve their governance and oversight.

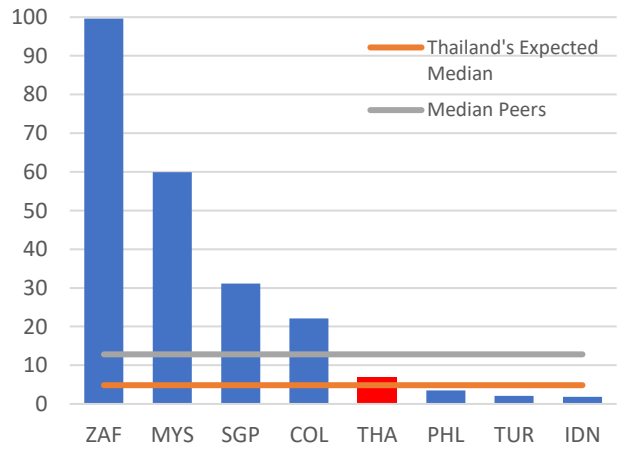
75. The FSAP assessed development challenges in three key segments of Thailand's financial sector: the private, funded pension system; financial cooperatives; and FinTech. These are further discussed below.

[16] SFIs were included in the 2008 FSAP, a 2011 World Bank development FSAP module, and a 2015 IMF technical assistance project. Hence, it was agreed that full inclusion of SFIs in the present FSAP Update would be redundant.

A. Funded Pension Scheme

76. Thailand's multi-pillar pension system is highly fragmented and offers adequate coverage to only a small segment of the working population, primarily civil servants and high-income individuals (Figure 17). Pillar zero offers an old-age living allowance to elderly people who are not eligible for a government pension, but the allowance is insufficient to ensure subsistence in the absence of other support (e.g., from the family). Pillar zero also includes a traditional government pension (the Old-Aged Pension, OAP) for civil servants. The OAP scheme covers approximately one million civil servants and does not have reserves. Pillar 1 includes a Social Security Fund (SSF) for all formal sector workers and serves approximately 13.6 million individuals in the mandatory part and 2.7 million in the voluntary part. Currently Pillar 2 offers only a mandatory funded scheme for government officials, but the government has a draft law that proposes the creation of a mandatory provident fund (the National Pension Fund, NPF) for private sector workers. Pillar 3 of the pension system includes several components for different segments of the population, including the Voluntary Provident Fund (PVD) scheme that serves approximately 3 million people and manages assets of THB 1.1 trillion (USD 33.8 billion), and the Retirement Mutual Fund (RMF) scheme that serves an undetermined number of individuals and manages approximately THB 258 billion in assets (USD 7.9 billion). The PVD and RMF schemes operate as collective and individual pension plans, respectively.

Figure 17. Pension fund assets (% of GDP),
Int. comparison 2016



Source: FinStats

77. As the Thai population ages, the pension system needs to reorient income to individuals in the future. Demographic changes are affecting the way that individuals face retirement. In particular, with increases in longevity and reductions in fertility rates, combined with continued urbanization, it is becoming increasingly burdensome for families to honor the previous social contract. The old age dependency ratio (population over 65 as a percentage of the total population) is expected to nearly double, from 12 to 23.4, between 2015 and 2035.

78. Strengthening the private, funded pension system is needed.[17] According to the legal and regulatory framework, the PVD scheme has multiple objectives, namely to serve as security for the employees in case of their death, termination of employment, or resignation from the fund. Consequently, individuals are allowed to withdraw the money from their PVD accounts before retirement age. The objective of the PVD scheme should be redefined to ensure an adequate pension for contributors.

79. International experience suggests that collective funded schemes like the PVD scheme are more successful than individual funded schemes in expanding coverage and increasing national savings. However, incentives in Thailand do not give any advantage to creating collective schemes. The Thai system offers the same tax benefits to an individual pension plan (RMF) as it does to a collective plan (PVD), giving company executives a disincentive to create collective schemes. As a result, only 3 percent of companies and 20 percent of the employees are contributors to PVD plans.

80. The current incentive structure of the PVD scheme results in suboptimal investment portfolio allocations. The governance structure of the PVD scheme does not align the interests of the asset management companies (AMCs) and fund committees (FCs) that make investment decisions and the contributors who are impacted by those decisions.[18] This is a classic principal-agent problem. The structure of the PVD scheme is such that agents (AMCs and FCs) have limited incentives to pursue optimal investment strategies that ensure adequate pensions for contributors (the principals), thus selecting asset allocations that are overly conservative (low volatility and low return) to avoid controversy among employees. While employees may derive short-term satisfaction from the low volatility of their pension fund investments, they lose out on long-term growth opportunities, resulting in inadequate pensions upon retirement.

81. While the authorities and the asset management industry share the diagnostic about the suboptimality of the PVD scheme's investment portfolios, they have approached the problem through fostering financial education and promoting "employees' choice." The emphasis on financial education programs may be overly optimistic, as little has been done in terms of evaluating their impact and effectiveness.

82. The payout phase of the PVD system – largely paid through lump sums and often withdrawn early – is inconsistent both with the objective of providing contributors with adequate pensions and with the generous tax benefits granted during the accumulation phase. Individuals may withdraw from their PVD or RMF accounts free of tax after age 55 if they held these accounts for 5 years or more, contrary to the purpose of the generous tax incentives given during the accumulation phase. Moreover, the fact that most contributors opt for a lump sum payment when they retire does not mean that it is optimal from the perspective of the design of the pension system. While individuals may prefer lump sums over annuity products at the time they retire to make

[17] While a parametric reform of other parts of the Thai pension system is needed – including retirement age and access rules for pensions – the FSAP assessed only the private, funded system, as requested by the Thai authorities.

[18] The FC is the PVD fund's governing body and consists of employer-appointed and employee-elected representatives.

(continued)

investments or to pay off existing debt,[19] they run the risk of falling into poverty if they overspend the money. They are then likely to need social assistance from the government. Since annuity products are able to offer retirement income until individuals die, they provide a solution that is more consistent with the consumption smoothing objective of a pension system and the tax benefits offered by the government.

83. Aligning the incentive structure with the long-term objectives of the future pensioners is essential for improving the future pensions of the PVD. The regulation for the PVD scheme should establish that funds can be withdrawn only after retirement age. In addition, it is recommended for the SEC to set guidelines for AMCs in defining default portfolios, which AMCs would have to present to companies when offering PVD plans. The message to employees should focus on the expected replacement rate, rather than the rates of return on a particular period.

84. FCs should be legally accountable for the selection process of the AMC and the portfolio allocation. FCs should file documentation with the SEC about the selection process of the AMC, including an evaluation of at least three AMCs and a comparison of investment alternatives and fees. FCs should select the alternative that optimizes the future pensions of participants. While the selection of conservative portfolios would still be possible, FCs that decide to move in this direction should have to explain how these conservative strategies help in optimizing the future pensions of participants. However, the regulation should also provide some safe-harbor alternatives that provide adequate protection to employees. To the extent that FCs adopt certain procedures defined in the regulation (for example, minimum contribution rate, lifecycle investment strategies, and automatic enrolment) the level of liability of FCs' members would be reduced.

85. Increasing coverage through the PVD scheme requires reducing the tax incentives on the individual RMF scheme. By reducing the benefits of the RMF program, individuals participating in this program – including highly compensated individuals – would have greater incentives to participate in the collective program (PVD).

86. Increasing coverage of the working population through the proposed mandatory funded scheme requires important decisions. One important decision is whether the proposed NPF is aimed at replacing or complementing the current PVD scheme. Another important decision is the degree of centralization of the NPF. While mandatory pension schemes can be designed with different degrees of centralization, proper corporate governance of the central agencies is essential. In this context, the appointment of the board members of the central agency should ensure technical capacity and independence from the government's influence. Since its interests are not always aligned with the long-term interests of the contributors, government involvement in the investment decisions of the fund should be avoided.

87. The voluntary nature of the PVD scheme is not an argument for allowing lump-sum withdrawals of pension funds after retirement. Consequently, the pension system should provide

[19] As noted below, Thrift and Credit Cooperatives oftentimes require their members to pay off their (oftentimes substantial) debt when they retire.

incentives, including the use of default options, for individuals to opt for retirement income, such as annuities, and to the extent possible, lump sums should be allowed only in cases of small amounts of pension accumulation. This transition, in turn, will require the development of the annuity market by life insurance companies (see Insurance section above). In order to preserve the value of the pensions of individuals, the annuities market should be built with inflation-linked annuities. Since annuities are a long-term business and depend on institutions subject to financial risk, it is essential to offer government guarantees on the value of the annuities. In this regard, the government will also need to support the issuance of longer maturities in the government and corporate bond markets to match annuity investment requirements. Finally, the government may also consider the possibility of creating a disability and survivorship insurance in the funded pension scheme to complement the current scheme of benefits.

B. FinTech

88. There is an active FinTech ecosystem in Thailand. The authorities are embracing the potential of FinTech and making good strides towards an enabling environment for the digital economy. There is measurable movement towards digital channels, products, and processes across banking, securities markets, and insurance. The FinTech ecosystem is most developed in payments-related services. The adoption of other innovations (e.g. equity crowdfunding and linkage of non-financial services for SMEs to financial services) has been slower. Incumbents are actively developing their use of new technologies and partnerships with FinTechs. Few competitors to traditional banking relationships have gained traction.

89. Standalone FinTech activity remains small and does not present financial stability risk, but risks from FinTech innovation require monitoring. The dominant model for FinTech in Thailand has been one of partnerships with incumbents to adopt new technology. This partly reflects the regulatory stance; the insurance regulator, for example, explicitly expects innovators to partner with incumbents. The most prominent FinTech innovations thus far are in payments and are largely mediated via the banking system. The most immediate financial impact of the wave of payments innovation on banks has been through their required investment in new capabilities and the voluntary reduction in fee income as fees for the growing volume of digital transactions were eliminated. A similar shift to lower-commission channels is underway in the securities industry. FinTech activity, however, can grow rapidly, as illustrated by PromptPay QR payments, which are now being accepted by 3.6 million merchants. Flows through these merchant accounts need enhanced monitoring to ensure that these payments do not become a source of credit, operational, or integrity risk. At this stage, there is no significant alternative finance market, nor direct exposure of the banking sector to FinTech alternative finance providers, but this could shift rapidly if popular products are introduced as regulations enabling alternative lending are implemented.

90. The development impact of FinTech is expected to stem from further broadening access to finance. This could be realized particularly in the area of SMEs, by leveraging improved connectivity, digitization of payments to generate data that can be used for credit risk assessment, and the development of lower cost digital services such as P2P lending that may in turn put competitive pressure on incumbents. The initial round of innovation in payments may not have had

much inclusion impact. Products such as non-bank e-wallets have been more popular among the already banked and young adult population, although comparison sites improve transparency and may enhance competition, as might the ability to buy certain products in smaller increments as they are used, reducing lock-in effects. Some small business e-commerce merchants are gaining access to credit via bank – marketplace lending partnerships. SME access to credit may expand further as P2P grows, and as applications of data analytics, combined with policy changes on underwriting approaches, enable banks to serve more customers. The digitization of SME revenues via PromptPay may have the potential to accelerate data-driven underwriting, but it is still early in this process.

91. Overall, advances in the regulatory framework for FinTech activities are consistent with international guidelines. The approach and progress of Thailand's principal financial regulators - the BoT, the SEC, and the OIC - towards FinTech line up well with the elements outlined by the IMF and World Bank in the Bali FinTech Agenda. The regulatory approach is partly activity-based, which could naturally extend the regulatory perimeter as new non-bank providers offer regulated products or services. New laws and regulations have been introduced to cover new types of activity, including digital assets, related initial coin offerings, and peer-to-peer (P2P) lending. Regulators recognize that this is work in progress and are committed to continuing to build regulatory and supervisory capacity and reassess their regulatory frameworks.

92. A fundamental review of strategy is suggested in six areas (per the Bali Fintech Agenda Elements): ID infrastructure (Element 2), competition (Element 3), data gathering (Element 5), sandbox operations (Element 6), product approval (Element 6), and supervision of innovations (Element 6):

- **ID Infrastructure**: The building blocks for e-KYC and fully digital onboarding exist. There are also some recent initiatives promoting a public authoritative source that can be accessed digitally by participating private sector participants. These include the National Digital ID (NDID), an effort to share validated ID among participating financial institutions, and a recent notification by the Department of Provincial Affairs (DOPA) on their intention to share data with the private sector under data subjects' authorization. It will be important to ensure that these initiatives promote efficiency, inclusion, and competition while protecting privacy and data security.

- **Competition**: A regulatory framework supportive of market entry is recognized as important to achieving two of BoT's three policy imperatives for the financial sector, namely efficiency and inclusion, without sacrificing its third imperative, immunity. The implementation of the BoT Sandbox to date has resulted in various products including joint innovations such as standardized QR code for retail payments, e-KYC approaches, letters of guarantee, individual innovator projects on e-KYC, supply chain finance, blockchain for cross-border money transfer, open application programming interfaces, and machine learning. Most of the projects tested in the sandboxes have been bank-led, or incumbents in partnership with FinTechs. Insurance startups are expected by OIC to partner with incumbents. Alternative approaches may be required to foster the competition envisioned in the Financial Sector Master Plan.

- **Data Gathering**: Data continues to be collected and encompasses new products and customers, and BoT could update its offsite reporting templates to reflect new products and payments forms.

There is scope to further enhance the systematic gathering and use of more granular data to assess behavioral changes and the impact of innovations as well as the monitoring of ancillary impact on related businesses, products, cost structures, or inclusion. A more holistic approach to systematic data collection and use would encompass traditional product volumes and values, adjunct data such as cost structures, and strategic data such as active users and inclusion metrics.

- **Sandbox Operations**: Regulatory sandboxes provide an important signal to the market and an opportunity to test innovations. In line with industry trends to incorporate technology and business model innovations, it is recommended that regulators consider adjusting the testing and risk monitoring frameworks applied in the sandboxes to enhance the space for business model innovations as well as technology. A more holistic approach to testing would cover not only technology and operations risks, but also look at business model issues and potential regulatory requirements pertaining to capital, earning, and management fit-and-proper criteria for products and services that might be introduced and scaled in the market on a stand-alone basis as well as within an established bank. From the perspective of BoT, the sandbox allows regulators and industry participants to learn side by side; indeed, the shared innovation in QR payments has been a big success. At the same time, the sandbox operators should ensure that the market is aware of the sandbox processes, including how innovations will be protected for solo projects, and how exit criteria are determined.

- **Regulating new products and institution-level product approval**: The market would benefit from clarity on when innovations will be viewed through the lens of existing activity-based regulations and when new laws or regulations are required. Product approval processes also need to adapt to the pace of innovation to balance speed, complexity, and readiness of the market, while maintaining a focus on consumer protection. Regulators should consider granting umbrella approvals covering a range of related products or setting exposure thresholds. A November 2018 press release from BoT on Financial Institution Regulatory Reform indicates steps in this direction. These considerations will need to extend beyond financial institutions as financial services become embedded in non-financial businesses and other activities. The Three-Regulator Committee should consider articulating an overall regulatory strategy for financial services in a digital economy, covering not only development of specialized regulations but also how existing principles might cover a broader range of providers, including niche startups, big tech companies, and others beyond the traditional financial services regulatory perimeter.

- **Supervision**: The oversight processes of the three regulators may need to be updated, consistent with each institution's legal authority, as new providers and products enter the market, different customers interact in new ways with their financial services providers, and hybrid business models emerge. For example, the customer shift to digital channels in banking and brokerage will affect business models beyond the specific new products and channels. Structures are in place for cross-regulator coordination, but the allocation of responsibilities may be tested by hybrid business models (e.g., P2P lending that is funded by a collective investment vehicle or underlying securitization). Supervisors need to continue to build capacity to understand business models and technology, assess the ways in which customer behavior, incentives, and markets are changing,

and adapt supervisory strategies, including the strategic use of SupTech, accordingly. The FSAP team also recommended timely issuance of guidance on issuer disclosures and supervisory reporting for crowdfunding, collecting more granular data on payments and cost structures, and working with banks and FinTechs to upgrade oversight and monitoring as the character and volume of account usage change.

C. Thrift and Credit Cooperatives and Credit Unions

93. Financial cooperatives are important providers of financial services in Thailand, serving over 4 million members. The MoAC is responsible both for promoting cooperatives and for regulating and supervising them. Its efforts have contributed to achieve a reasonable level of oversight and development of the cooperative sector. Gaps remain, however, especially in the quality of management of smaller cooperatives and in the availability and quality of some information.

94. Although the financial performance of TCCs appears to be positive, their NPL indicator may be distorted by lending practices that allow for a systematic rollover of debt. TCCs are set up by employees of one entity, be it a firm or a government agency, to serve the employees. The TCC sector is well capitalized, profitable, and growing steadily, with own funds equivalent to 45 percent of assets and a reported and annual average return on equity (ROE) above 6 percent over the last five years. As of August 2018, 1,411 TCCs served 3.3 million members with assets of THB 2.8 trillion, a gross loan portfolio of THB 2.1 trillion, and investments of THB 400 billion. The main liabilities were member deposits (THB 1 trillion) and loans and other liabilities (THB 465 billion). Own funds amounted to THB 1.3 trillion, of which THB 1 trillion was contributed by members as shares. TCCs account for about 16 percent of the total household debt in Thailand. Asset quality in the TCC sector is good, reporting an NPL ratio of only 0.3 percent as of August 2018. This low level of NPLs arises because (i) members' loan payments can, by law, be automatically deducted by their employers from salary and transferred to repay the TCC prior to other lenders; and (ii) TCCs' lending practices allow rolling debt over into new, larger loans.

95. Despite the low level of NPLs, TCCs may be contributing to an unsustainable increase in the overall level of indebtedness of public servants. Anecdotal evidence suggests that over-indebtedness is significantly affecting the welfare of teachers and members of the police forces, although detailed data is lacking. The lending policies of TCCs make it possible for members to accumulate significant debt, which often has to be repaid at the time of retirement. Members of TCCs are also borrowing from banks but the latter cannot obtain full information about their level of indebtedness because only three TCCs report to the NCB. TCCs are reluctant to participate in credit reporting because the law does not require them to report and they find the cost to be too high considering that they can manage credit risk effectively due to the automatic deduction of loan repayments from salaries prior to other creditors.

96. In contrast to TCCs, CU performance has been mixed. CUs tend to serve members who often are not served by banks and who are joined in a common bond, such as vocation (e.g., agriculture) or location (mostly rural areas). As of August 2018, 587 CUs served 860,000 members. They are much smaller than TCCs, managing about THB 60 billion in assets, with a gross loan portfolio

of THB 39 billion, deposits of THB 20 billion, and capital of THB 13 billion. While member deposits are the main liabilities, they also obtain loans from other cooperatives and other sources. Although the sector has reported ROE between 9 and 11 percent in the past three years, its loan portfolio shows very high levels of past due loans: 58 percent in 2016 and of 26 percent in 2017, which may not be adequately provisioned.[20] The level of past due loans spiked in 2015 to 66 percent due to the failure of the largest CU (which managed 20 percent of the sector's assets) in the wake of a large alleged fraud by its management. Since 2016 the loan portfolio quality of the sector has been improving, contributing to the positive ROE that has been reported in the following years.

97. The TCC and CU sectors are organized into federations, but these play a limited role. The largest TCC federation covers about 80 percent of all TCCs, and its assets account for about 4 percent of those of the TCC sector. It has commissioned an accounting and management software to distribute among its members, but this project has encountered significant difficulties. The only CU federation manages assets equivalent to 8 percent of those of the CU sector and has not undertaken any efforts to support its members with information technology. Given their size, the federations provide limited financial services, while management support is restricted to training.

98. Despite the financial nature of these cooperatives, their oversight is not assigned to BoT but to MoAC, an entity that was until recent years mainly focused on promoting the sector and that is in the process of strengthening its supervisory capacities and powers. MoAC exercises its multiple mandates through the Cooperative Promotion Department (CPD) and the Cooperative Audit Department (CAD). While CPD promotes, registers, regulates, and supervises all cooperatives, CAD's main functions are to define the accounting standards to be followed, to supervise the external auditors, and to audit smaller cooperatives. CPD's and CAD's responsibilities apply to financial and non-financial cooperatives, but neither has dedicated units or specialized staff to deal with financial cooperatives. Moreover, both face conflicts of interest: CPD is responsible for promoting and supervising cooperatives, and CAD provides a free accounting software. Information technology of CPD and CAD is outdated, and data integration is a challenge as CPD and CAD don't have a unified database.

99. MoAC, BoT, MoF, CPD, and CAD are collaborating to enhance the flow of information among them and to enhance regulations and supervision applicable to TCCs and CUs. This collaboration strengthens the capacity of MoAC, CPD, and CAD to regulate and supervise the financial cooperatives while it helps other financial sector authorities to gain a better understanding of the characteristics and risks arising in the TCCs and CUs. This collaboration already contributed to the amendments of the Cooperatives Act (passed in November 2018 and came into effect in May 2019), which strengthen the powers of CPD, allowing it to define adequate prudential standards and regulations as well as to impose sanctions as needed.

100. There is no financial safety net for financial cooperatives. Deposits at Thai financial cooperatives are not backed with deposit insurance, and the Thai federations do not have mechanisms

[20] CUs report loans past due for one day or more; in contrast, TCCs report the NPL ratio, which includes loans past due for 90 days or more.

or dedicated funds that could be tapped by a distressed affiliate. An exception is a voluntary emergency liquidity arrangement that is being tested by one federation which has attracted 50 TCCs to participate on a voluntary basis. However, the cooperatives funds are placed as term-deposits and can be withdrawn at maturity, making this scheme an unreliable safety net.

101. Building on the above analysis, it is recommended that efforts be undertaken to:

- **Establish and consolidate in a period of 5 years a regulatory and supervisory regime for financial cooperatives that is proportionally equivalent to that applied to the banking system, including:** (a) a clear strategy for the transition process; (b) adequate enforcement powers for the authorities to deal with non-compliant entities; (c) adequate resources to support viable financial cooperatives to adapt to the new circumstances; and (d) adequate staffing and allocation of resources for the supervisors to oversee the process;

- **Enhance regulation and supervision[21] by:** (i) separating the promotional activities from regulation and supervision by establishing different units and ensuring the latter's independence; (ii) strengthening CPD and CAD by establishing dedicated, professionalized units at CPD and CAD to deal with financial cooperatives and their federations; (iii) strengthening the enforcement powers of CPD and CAD; (iv) strengthening and deepening the BoT-MoF-MoAC-CPD-CAD collaboration in regards to the regulation and supervision of TCCs and CUs; and (v) updating the technological capabilities of CPD and CAD to automate the collection and processing of information from financial cooperatives;

- **Address the potential over-indebtedness problem by:** (i) carrying out research to understand the current levels and risks, with special focus on the potential impacts on the welfare of retirees; (ii) establishing standard criteria for loan classification and provisioning (especially at CUs) as well as strengthening the monitoring of loan portfolios; (iii) defining maximum DTI ratios; and (iv) requiring TCCs and CUs to report to the NCB;

- **Assess options to establish liquidity and/or solvency funds for TCCs and CUs under the purview of CPD**;[22] and

[21] Although a transfer of the authority to oversee financial cooperatives from MoAC to BoT could be considered given the relevance and size of the TCC and CU segments, the FSAP does not recommend such a step, given that (a) the Thai financial cooperatives are different from banks in terms of their risk profile, complexity, size, and capacity to deal with the prudential regulations applicable to banks; (b) BoT is not adequately staffed and does not have the required policies and procedures to deal with the large number of comparatively small entities; (c) MoAC is adequately staffed to fulfill its duties and is in the process of building up its capacity; and (d) such a transfer would require significant changes to applicable laws, which are not a priority in the current environment. If there is insufficient progress in addressing the current supervisory weaknesses in MoAC in the next three to five years, consideration should be given to transferring the supervision of cooperatives to the BoT or to a new institution equipped with the relevant expertise.

[22] The FSAP does not recommend at this time to provide insurance for the deposits at financial cooperatives, as the preconditions first have to be established, likely requiring a period of more than 5 years. Preconditions include: a substantial strengthening of the quality of its information (as they have possibly undetected weaknesses in their performance) and a substantial strengthening in their oversight.

(continued)

- **Develop the capacity of federations to provide services** (information technology, management, technical assistance, and internal control) to their member TCCs and CUs; such federations could in time develop into a Central Financing Facility or Cooperative Apex Bank that provides financial services to its affiliates, provided that the federations are properly regulated and supervised according to their risk profile as the financial center of the cooperative sector.[23]

[23] Given the rapid developments in FinTech, cooperatives, like other financial institutions, will need to accelerate their digital transformations to keep their value proposition relevant to clients who will have other alternatives. The federations could play a role in assisting their members to adopt new technology, and to source or develop innovations relevant to their market segments.

Appendix I. Thailand: Selected Data

Table 2. Thailand: Selected Economic Indicators

				Prel.	Proj.	
	2015	2016	2017	2018	2019	2020
Real GDP growth (y/y percent change) 1/	3.1	3.4	4.0	4.1	2.9	3.0
Consumption	2.4	2.7	2.3	4.0	3.6	3.8
Gross fixed investment	4.4	2.9	1.8	3.8	5.2	8.5
Inflation (y/y percent change)						
Headline CPI (end of period)	-0.9	1.1	0.8	0.4	1.3	1.2
Headline CPI (period average)	-0.9	0.2	0.7	1.1	0.9	0.9
Core CPI (end of period)	0.7	0.7	0.6	0.7	0.5	0.6
Core CPI (period average)	1.1	0.7	0.6	0.7	0.5	0.6
Saving and investment (percent of GDP)						
Gross domestic investment	22.4	20.9	22.8	25.0	24.9	25.3
Private	18.2	17.4	17.2	16.9	17.1	17.9
Public	6.3	6.4	6.0	5.9	6.2	6.5
Change in stocks	-2.2	-2.8	-0.3	2.1	1.7	0.9
Gross national saving	29.3	31.5	32.5	31.4	31.0	30.7
Private, including statistical discrepancy	22.2	24.3	27.1	25.7	25.1	24.7
Public	7.1	7.1	5.4	5.7	5.9	6.0
Foreign saving	-6.9	-10.5	-9.7	-6.4	-6.0	-5.4
Fiscal accounts (percent of GDP) 2/						
General government balance 3/	0.1	0.6	-0.9	-0.3	-0.2	-0.2
SOEs balance	0.7	0.8	0.7	0.5	0.4	0.4
Public sector balance 4/	0.9	1.3	-0.2	0.2	0.2	0.2
Public sector debt (end of period) 4/	42.6	41.8	41.9	42.1	42.4	43.0
Monetary accounts (end of period, y/y percent change)						
Broad money growth	4.4	4.2	5.0	4.7	4.0	3.6
Narrow money growth	5.7	4.8	9.4	2.8	3.7	3.6
Credit to the private sector by depository corporations	5.6	4.2	4.6	5.8	3.1	3.8
Balance of payments (billions of U.S. dollars)						
Current account balance	27.8	43.4	44.1	32.4	31.8	30.1
(Percent of GDP)	6.9	10.5	9.7	6.4	6.0	5.4
Exports, f.o.b.	213.4	213.5	233.7	251.1	245.2	263.0
Growth rate (dollar terms)	-5.9	0.1	9.5	7.5	-2.4	7.3
Growth rate (volume terms)	-1.5	0.1	6.0	5.1	-3.6	5.5
Imports, f.o.b.	187.2	177.7	201.1	228.7	223.0	243.1
Growth rate (dollar terms)	-10.6	-5.1	13.2	13.7	-2.5	9.0
Growth rate (volume terms)	0.3	-2.5	7.2	7.7	-1.2	9.1
Capital and financial account balance 5/	-21.9	-30.6	-18.1	-25.1	-20.9	-30.1
Overall balance	5.9	12.8	26.0	7.3	10.9	0.0
Gross official reserves (including net forward position, end of period) (billions of U.S. dollars)	168.2	197.6	239.3	239.4	251.1	251.1
(Months of following year's imports)	11.4	11.8	12.6	12.9	12.4	11.5
(Percent of short-term debt) 6/	280.2	273.8	326.8	301.9	307.0	298.2
(Percent of ARA metric)	203.9	211.2	221.2	222.2	...	...
Forward position of BOT (end of period)	-11.7	-25.8	-36.7	-33.7	...	...
Exchange rate (baht/U.S. dollar)	34.2	35.3	33.9	32.3	...	...
NEER appreciation (annual average)	4.4	-3.2	4.3	4.3	...	...
REER appreciation (annual average)	2.6	-4.0	3.4	3.4	...	...
External debt						
(Percent of GDP)	32.7	32.0	34.1	31.9	32.0	32.4
(Billions of U.S. dollars)	131.1	132.2	155.2	160.9	169.3	180.4
Public sector 7/	20.6	22.6	31.5	35.7	36.2	36.5
Private sector	110.5	109.5	123.7	125.2	133.1	144.0
Medium- and long-term	58.3	56.7	59.0	65.0	69.4	77.9
Short-term (including portfolio flows)	52.2	52.8	64.7	60.2	63.7	66.1
Debt service ratio 8/	7.6	6.0	5.8	6.0	6.3	6.3
Memorandum items:						
Nominal GDP (billions of baht)	13,743	14,555	15,452	16,318	16,922	17,536
(In billions of U.S. dollars)	401.3	412.4	455.4	505.0	...	...

Sources: Thai authorities; CEIC Data Co. Ltd.; and IMF staff estimates and projections.

1/ This series reflects the new GDP data based on the chain volume measure methodology, introduced by the Thai authorities in May 2015.

2/ On a fiscal year basis. The fiscal year ends on September 30.

3/ Includes budgetary central government, extrabudgetary funds, and local governments.

4/ Includes general government and SOEs.

5/ Includes errors and omissions.

6/ With remaining maturity of one year or less.

7/ Excludes debt of state enterprises.

8/ Percent of exports of goods and services.

Table 3. Thailand: Financial System Structure

(In billions of bahts, unless otherwise stated)

	2007		2018		
	Assets (bn bahts)	% total financial assets	Number of institutions	Assets (bn bahts)	% total financial assets
Financial Sector Assets	16,608	100	7,585	43,389	100
in percent of GDP	183	...	...	266	...
Deposit-taking financial institutions	**12,499**	75	**1,454**	**29,758**	69
Banks	9,356	56	30	19,997	46
Private Banks	6,857	41	14	15,274	35
3 largest private banks	3,755	23	3	8,949	21
Other privately owned	3,102	19	11	6,325	15
State-owned	1,261	8	1	2,852	7
Foreign-majority owned	1,238	7	15	1,871	4
Subsidiaries	12	0	4	185	0
Branches of foreign banks	1,226	7	11	1,685	4
Specialized Financial Institutions	2,270	14	6	6,773	16
Finance companies	51	0	2	28	0
Credit Fonciers	1	0	3	4	0
Thrift and credit cooperatives	822	5	1,413	2,956	7
Nonbank Financial Institutions	**4,109**	**25**	**6,131**	**13,630**	31
Insurance companies	960	6	83	3,951	9
Mutual Funds (incl. MMF)	1,611	10	1,476	4,914	11
Securities companies	0	0	47	366	1
Pension Funds	817	5	382	2,010	5
Leasing companies	0	...	22	1,100	3
Credit card, personal loan and nano finance companies	0	...	28	544	1
Asset Management Companies (AMCs)	709	4	36	316	1
Agricultural cooperatives and others	0	...	3,394	265	1
Others[1]	10	6	663	165	0

Sources: The BoT and Fund staff estimates.

[1] Composed of Secondary Mortgage Corporation and Thai Credit Guarantee Corporation for 2007, and also include pawn shops for 2018.

Table 4. Thailand: Financial Soundness Indicators (2013–2018)

	2013	2014	2015	2016	2017	2018
Regulatory capital to risk-weighted assets	15.5	16.5	17.1	17.8	18.0	17.9
Regulatory tier 1 capital to risk-weighted assets	11.9	13.0	13.9	14.5	15.1	15.0
NPLs net of provisions to capital	7.7	7.8	8.0	8.4	9.1	9.1
NPLs to total gross loans	2.3	2.3	2.7	3.0	3.1	3.1
Sectoral distribution of total loans: Residents	95.0	94.2	93.7	94.3	94.6	94.5
Deposit-takers	5.3	3.9	3.6	3.9	3.6	3.2
Other financial corporations	4.4	3.8	4.0	4.1	4.0	3.7
General government	1.4	1.8	1.4	0.8	0.9	1.1
Nonfinancial corporations	41.3	39.9	40.1	40.4	38.7	39.6
Other domestic sectors	36.7	37.3	37.9	38.4	36.8	38.1
Sectoral distribution of total loans: Nonresidents	5.0	5.8	6.3	5.7	5.4	5.5
Return on assets (ROA)	1.8	1.7	1.4	1.4	1.2	1.3
Return on equity (ROE)	15.9	14.7	11.1	10.7	9.1	9.4
Interest margin to gross income	60.3	62.1	60.4	62.3	61.9	61.5
Non-interest expenses to gross income	45.9	47.5	47.3	47.6	47.7	49.3
Liquid assets to total assets (Liquid asset ratio)	19.2	20.9	20.0	18.8	19.9	18.9
Liquid assets to short term liabilities	31.8	35.6	33.1	30.7	32.6	30.7

Source: IMF, FSI database.

Table 5. Thailand: Risk Assessment Matrix1

Sources of Risks	Relative likelihood	Impact and Transmission Channels
Global Risks		
• **Background 1. Weaker-than expected global growth.** Idiosyncratic factors in the U.S., Europe, China, and stressed emerging markets feed off each other to result in a synchronized and prolonged growth slowdown. In the U.S., waning confidence could lead to weaker investment and a more abrupt closure of the output gap. In Europe, delays in business investment and a reduction in private consumption could lead to a prolonged period of anemic growth and low inflation. In China, weaker external demand, the potential reversal of globalization and the increasing role of the state could weigh on growth prospects.	**High/medium**	**Medium** • Weaker exports, including due to retreat from cross-border integration, and tourism income could lead to lower growth, in spite of abundant current account buffers. Corporate vulnerabilities could rise, and the repayment capacity of households, already relatively highly indebted, may come under pressure. These in turn could lead to higher NPLs and provisioning needs for banks.
• **Background 2. Sharp rise in risk premia.** An abrupt deterioration in market sentiment (e.g., prompted by policy surprises, renewed stresses in emerging markets, or a disorderly Brexit) could trigger risk-off events such as recognition of underpriced risk. Higher risk premia cause higher debt service and refinancing risks; stress on leveraged firms, households, and vulnerable sovereigns; disruptive corrections to stretched asset valuations; and capital account pressures—all depressing growth.	**High**	**High** • An increase in global interest rates could lead to a reversal of capital inflows and a depreciation of the Baht. Tightening of domestic monetary conditions could result in higher funding costs, pressuring banks' profitability or weighing on corporates' and households' debt servicing capacity (with a consequent impact on banks' impaired assets), depending on the degree of pass-through FX depreciation would increase the stress on unhedged FX borrowers.
Domestic Risks		
• **Background 3. Entrenched low inflation.** Inflationary pressures have been subdued and inflation expectations are showing signs of de-anchoring from the BoT's target range. There is a risk of domestic low interest rate environment becoming entrenched.	**Medium**	**High** • Entrenched low inflation would worsen the macroeconomic environment, increasing real interest rates and the real debt burden, and posing risks to corporates, household, and financial sector balance sheets. Search for yield could result in excessive risk taking by investors, leading to accumulation of vulnerabilities in the financial sector.
• **Background 4. Debt overhang.** Household indebtedness remains elevated, after having increased rapidly in the early 2010s.	**Medium**	**Medium** • Highly leveraged households may hold back spending or banks may tighten credit supply, which would dampen consumption. Furthermore, if these households do not have sufficient buffers to cope with shocks (e.g., a decline in house prices or an increase in unemployment), their debt-service capacity would be constrained, possibly leading to bank losses and a contraction in credit.

[1] The RAM shows events that could materially alter the baseline path (the scenario most likely to materialize in the view of IMF staff). The relative likelihood is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability between 30 and 50 percent). The RAM reflects staff views on the source of risks and overall level of concern as of the time of discussions with the authorities. Non-mutually exclusive risks may interact and materialize jointly.

Table 6. Thailand: Macroeconomic Scenario Projections (2018–2021)

		Baseline			Adverse Scenario			Deviations from the Baseline		
	2018	2019	2020	2021	2019	2020	2021	2019	2020	2021
Real GDP growth	4.6	3.9	3.7	3.5	-5.6	-2.4	4.9	-9.5	-6.1	1.4
Real private consumption (growth)	3.7	4.6	5.0	5.5	-2.0	-1.3	3.5	-6.6	-6.3	-2.0
Real private investment (growth)	5.7	6.5	8.0	8.5	-18.0	-8.0	8.0	-24.5	-16.0	-0.5
Real government absorption (growth)	7.4	7.4	5.6	3.8	8.5	6.5	4.5	1.1	0.9	0.7
Real exports (growth)	5.9	4.6	3.8	3.9	-18.0	-9.0	9.0	-22.6	-12.8	5.1
Real imports (growth)	6.1	7.3	6.6	6.1	-16.5	-7.0	9.0	-23.8	-13.6	2.9
Unemployment rate (percent)	1.1	1.1	1.2	1.2	3.0	3.5	2.8	1.9	2.3	1.6
Headline CPI Inflation (percent)	0.9	0.9	1.1	1.4	-0.5	-0.2	0.9	-1.4	-1.3	-0.5
Core CPI Inflation (percent)	0.8	1.2	1.4	1.6	0.1	0.3	0.7	-1.2	-1.1	-0.9
One-year nominal corporate interest rate (percent	2.6	2.9	3.2	3.4	4.3	4.0	3.5	1.4	0.9	0.1
Ten-year nominal corporate interest rate (percent)	3.7	4.0	4.1	4.2	10.1	9.9	8.4	6.1	5.8	4.2
One-year sovereign yield (percent)	1.9	2.2	2.5	2.8	0.3	0.3	0.3	-1.9	-2.3	-2.5
Ten-year sovereign yield (percent)	2.9	3.1	3.3	3.5	2.8	2.1	1.8	-0.3	-1.2	-1.7
Nominal USD exchange rate (growth) neg=appre(	2.2	-1.5	-1.0	-0.6	12.0	5.0	-6.1	13.5	6.0	-5.5
Asset Prices (SET index, growth)	-10.8	7.6	9.3	5.3	-55.0	20.0	10.0	-62.6	10.7	4.7

Sources: IMF, World Economic Outlook database; and IMF staff estimates.

Table 7. Thailand: Investment Fund Liquidity Stress Tests - Asset Sales
(in billions of bahts)

	Daily FI	MMF	Total
Cash Liquidity	354	24	378
Short-term bonds	456	125	581
Medium-term bonds	25		25
Long-term bonds	45		45
Total NAV	880	149	1029

		Waterfall Sales			Prorata Sales		
		All Funds (Daily FI +MMF)		Total	All Funds (Daily FI +MMF)		Total
Fund homogenity	Cash Liquidity		43	43		255	255
	Short-term bonds		569	569		380	380
	Medium-term bonds		24	24		16	16
	Long-term bonds		44	44		29	29
	Total		679	679		679	679
		Daily FI	MMF	Total	Daily FI	MMF	Total
Fund heterogeneity	Cash Liquidity	242	12	254	302	21	324
	Short-term bonds	433	10	443	389	103	492
	Medium-term bonds	24		24	19		
	Long-term bonds	41		41	30		
	Total	740	22	763	740	124	865
Fund type	Cash Liquidity	84	-	84	245	18.5	264
	Short-term bonds	446	111	558	307	92.9	400
	Medium-term bonds	24		24	16		
	Long-term bonds	44		44	30		
	Total	598	111	710	598	111	663

Sources: Bank of Thailand, Securities Exchange Comission of Thailand, and IMF staff calculations.

Appendix II. Thailand: Implementation of 2008 FSAP Recommendations

Substantial upgrades to the regulatory and supervisory frameworks have been made over the last decade. The BoT's legal power to issue regulations and undertake corrective actions was strengthened; insurance supervision was updated to a risk-based framework; NPLs were reduced and started to be monitored more closely; and the deposit protection transitioned from a blanket guarantee to a limited-deposit insurance system.

Recommendations	Prioritization	Status
Supervisory regime		
Passage of pending legal reforms to address weaknesses in the financial supervisory framework, including establishing legal independence of the heads of the supervisory agencies and provisions for objective and transparent standards for dismissal.	I	I
Strengthen the supervisory framework for insurance by establishing an independent supervisory board and moving to risk-based supervision and capital regimes.	I	I
Improve coordination among the supervisory agencies through regular consultations and greater sharing of draft policies and regulations at the staff level. Improve process of consultations with market participants.	M	I
Financial safety net framework		
Transition from a blanket guarantee to a limited deposit insurance system.	M	I
Central bank independence and transparency		
Assure full legal and operational independence of the BoT in the conduct of monetary policy.	I	I
Clarify in the BoT Act the primary objectives of monetary policy.	I	I
Role of the government in the banking sector		
Gradually reduce the government's equity stakes in the private commercial banks.	M	PI
Re-evaluate the appropriateness of SFIs taking deposits in competition with commercial banks. If SFIs take deposits, they should be regulated and supervised like commercial banks.	M	PI
Distressed asset resolution		
Reduce the large stock of NPLs and distressed assets in the Thailand financial sector and state-owned asset management companies.	M	I
Accurately identify and monitor the level and aging of NPLs in banks.	I	I
Address weaknesses in the legal infrastructure, including banks' ability to seize collateral of defaulted borrowers.	I	PI
Provide tax incentives for writing off NPLs.	M	I
Financial infrastructure and integrity		
Bring the AML/CFT framework in line with the international standard by amending the 1999 AMLA.	I	I
Amend the law to reduce the legal risk to the finality of the settlement of interbank transactions in the event of bankruptcy and reduce systemic risks in the securities settlement system.	M	I
Legally separate the Central Securities Depository (CSD) and the Central Counterparty (CCP) functions.	M	I

* Prioritization: I = immediate priority, M = medium-term priority; Status: I = implemented, PI = partially implemented, NI = not implemented.