INTERNATIONAL MONETARY FUND

IMF Country Report No. 19/308

THAILAND

FINANCIAL SYSTEM STABILITY ASSESSMENT

October 2019

This Financial System Stability Assessment paper on Thailand was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed on September 30, 2019.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org Web: http://www.imf.org
Price: $18.00 per printed copy

International Monetary Fund
Washington, D.C.

THAILAND

September 10, 2019

FINANCIAL SYSTEM STABILITY ASSESSMENT

KEY ISSUES

Context: While the role of other deposit-taking institutions and nonbank financial institutions (NBFIs) has grown in the last decade, commercial banks still account for almost half of the financial sector. Financial vulnerabilities appear to be contained, but household indebtedness is relatively high and there are signs of weaknesses in some corporates and small-and-medium enterprises (SMEs). A significant slowdown in China and advanced economies, a sharp rise in risk premia, and entrenched low inflation would adversely impact the financial system.

Findings: Stress tests results suggest that the banking sector is resilient to severe shocks and that systemic and contagion risks stemming from interlinkages are limited. Financial system oversight is generally strong, but the operational independence of supervisory agencies can be strengthened further. The regulatory and supervisory frameworks of Specialized Financial Institutions (SFIs) and commercial banks are different. Progress has been made on the macroprudential framework and policies, but leakages remain. Many features needed to manage bank distress and failure are in place, but there is room for enhancing the crisis management and resolution framework. Thrift and Credit Cooperatives (TCCs) play a key role in household lending, but data is limited and their supervision and regulation can be strengthened.

Policies: The operational independence of supervisory agencies can be strengthened further 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. Establishing an overarching body with the power to make recommendations to member agencies with a "comply or explain" mechanism could enhance the already strong coordination and cooperation among supervisors. The Bank of Thailand (BoT) should be allowed to issue regulations related to SFIs without MoF approval, and a road map should be prepared for bringing regulation and supervision of the three largest retail-deposit-taking SFIs into line with those of commercial banks. Macroprudential measures should be extended to SFIs, TCCs, and Credit Unions (CUs) to close existing leakages. To address gaps in the crisis management and resolution framework, it is key to develop bank and SFI resolution toolkits, strengthen arrangements on deposit insurance and Emergency Liquidity Assistance (ELA), and amend legislation to align resolution powers with the Key Attributes.

- The FSAP team was led by Alejandro López Mejía (IMF) and Brett Coleman (World Bank (WB)), and included deputy mission chiefs, Sumiko Ogawa (IMF) and Ana Maria Aviles (WB); Pierpaolo Grippa, Kenichiro Kashiwase, Suchitra Kumarapathy, and Miklos Vari (all IMF); Juan Buchenau, Dorothee Delort, Katia D'Hulster, Vicente Lazen, Heinz Rudolph, Matthew Saal, and Gynedi Srinivas (all World Bank); Thomas Finnell, Charles Michael Grist, Jonathan Katz, Vicente Lazen, Geof Mortlock, and Jose Tuya (external experts).

- The mission met the BoT, the Securities and Exchange Commission (SEC), the Office of Insurance Commission (OIC), the Ministry of Finance (MoF), the Ministry of Agriculture and Cooperatives (MoAC), and private sector representatives.

- FSAPs assess the stability of the financial system as a whole and not that of individual institutions. They are intended to help countries identify key sources of systemic risk in the financial sector and implement policies to enhance its resilience to shocks and contagion. Certain categories of risk affecting financial institutions, such as operational or legal risk, or risk related to fraud, are not covered in FSAPs.

- This report was prepared by Alejandro López Mejía and Sumiko Ogawa, with contributions from the members of the FSAP team.

Approved By
James Morsink and Kenneth Kang

Prepared By
Monetary and Capital Markets Department

This report is based on the work of the Financial Sector Assessment Program (FSAP) mission that visited Thailand in November 2018 and February 2019. The FSAP findings were discussed with the authorities during the Article IV consultation mission in July 2019.

CONTENTS

FIGURES

TABLES

APPENDICES

ANNEXES

Glossary

AMC	Asset Management Companies
AML/CFT	Anti-Money Laundering and Countering the Financing of Terrorism
AMLO	Anti-Money Laundering Office
ASCO	Association of Securities Companies
AUM	Asset Under Management
BAHTNET	Bank of Thailand Automated High-Value Transfer Network
BCBS	Basel Committee on Banking Supervision
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
CCB	Capital Conservation Buffer
CCP	Central Counterparty
CIS	Collective Investment Schemes
COI	Conflict of Interest
CPA	Certified Public Accountant
CPD	Cooperative Promotion Department
CPMI	Committee on Payments and Market Infrastructures
CRA	Credit Rating Agency
CSD	Central Securities Depository
CSIRP	Cyber Security Incident Response Plan
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
DVP	Delivery Versus Payment
ELA	Emergency Liquidity Assistance
ERM	Enterprise Risk Management
EVE	Economic Value of Equity
EWI	Early Warning Indicator
FAP	Federation of Accounting Professions
FBG	Financial Business Group
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
FSWG	Financial Stability Working Group
FX	Foreign Exchange
GaR	Growth at Risk
GDP	Gross Domestic Product
GFC	Global Financial Crisis
HKMA	Hong Kong Monetary Authority
IAIS	International Association of Insurance Supervisors
IAS	International Accounting Standards
ICA	Insurance Commission Act
ICAS	Image Cheque Clearing and Archive System
ICP	Insurance Core Principle
ICR	Interest Coverage Ratio
IF	Investment Fund
IFRS	International Financial Reporting Standard
ILF	Intraday Liquidity Facility
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IRB	Internal Ratings-Based
IRRBB	Interest Rate Risk in the Banking Book
ISA	International Standards on Auditing
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LIA	Life Insurance Act
LTV	Loan to Value
MAI	Market for Alternative Investment
MER	Mutual Evaluation Report
ML/TF	Money Laundering/Terrorist Funding
MMF	Money Market Fund
MMoU	Multilateral Memorandum of Understanding
MoAC	Ministry of Agriculture and Cooperatives
MoF	Ministry of Finance
MoU	Memorandum of Understanding
MPC	Monetary Policy Committee
NBFI	Nonbank Financial Institution

NCB	National Credit Bureau
NDID	National Digital ID
NII	Net Interest Income
NLIA	Non-Life Insurance Act
NPL	Nonperforming Loan
NSFR	Net Stable Funding Ratio
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
PFMI	Principles for Financial Market Infrastructures
PPA	Prompt Preventive Action
PSC	Payment Systems Committee
PVD	Voluntary Provident Fund
PVP	Payment Versus Payment
RAM	Risk Assessment Matrix
REIT	Real Estate Investment Trust
RM	Relationship Manager
RMF	Retirement Mutual Plan
RMD	Risk Management Department
RTO	Recovery Time Objective
RWA	Risk Weighted Assets
SEA	Securities and Exchange Act
SEC	Securities and Exchange Commission
SECB	Securities and Exchange Commission Board
SEPO	State Enterprise Policy Office
SET	Stock Exchange of Thailand
SFI	Specialized Financial Institution
SIPS	Systemically Important Payment System
SME	Small- and Medium-Enterprise
SML	Special Mention Loan
SOE	State Owned Enterprise
SRO	Self-Regulatory Organizations
SSS	Securities Settlement System
STR	Suspicious Transactions Report
TAS	Thai Accounting Standards
TBMA	Thai Bond Market Association
TCC	Thrift and Credit Cooperative
TCH	Thailand Clearing House
TFEX	Thailand Futures Exchange
TFRS	Thai Financial Reporting Standards

TSD	Thailand Securities Depository
USD CHATS	U.S. Dollar Clearing House Automated Transfer System
WB	World Bank
WEF	World Economic Forum
WEO	World Economic Outlook

EXECUTIVE SUMMARY

Banks represent a sizable share of the financial sector in Thailand, but other deposit-taking institutions and NBFIs have grown significantly in the last decade. While assets of banks represented 46 percent of total financial assets at end-2018, the government-owned SFIs and TCCs now play a key role in providing credit to households. Assets of the insurance and mutual fund sectors have doubled as a share of GDP over the last decade, and capital markets are largely on par with regional peers.

Financial vulnerabilities appear to be contained, but household indebtedness is relatively high and there are signs of weaknesses in some corporates and SMEs. 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 is resilient to severe shocks. Stress tests results and sensitivity analysis indicate that the largest banks can withstand a shock broadly as severe as the Asian financial crisis. While data is limited, deposit-taking SFIs appear to be vulnerable to asset concentration and interest rate risk. Systemic and contagion risks stemming from interlinkages across banks and nonbanks are limited. Risk analysis could benefit from data improvements, including on liquidity and SFIs, and from the development of tools to assess concentration risk at an entity level.

The oversight of the financial system is generally strong. Substantial upgrades to the regulatory and supervisory frameworks have been made since the 2008 FSAP (Appendix I). There is a high level of compliance with international standards. While there is no objective evidence of lack of independence of the supervisory agencies, the risks to independence can be mitigated by reducing the involvement of the MoF in prudential issues and ensuring that each agency has full control over decisions that lie within its areas of responsibility. Increased independence should be accompanied by enhanced accountability of supervisory agencies to an appropriate legislative body and by enhancing further cooperation among supervisors. An overarching coordination body, with representatives of all supervisory agencies, the MoAC, the Deposit Protection Agency (DPA), the Financial Institutions Development Fund (FIDF), and the MoF, should be created and equipped with the power to make recommendations with a "comply or explain" mechanism. It should have no power to issue directions to member agencies. Other key recommendations include:

- **Oversight of banks.** Strengthening further loan management practices, 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) is important.

- **Oversight of SFIs.** Establishing a neutral regulatory and supervisory framework for commercial banks and SFIs is key. It is recommended to prepare a roadmap with milestones for bringing the regulation and supervision of the three largest retail-deposit-taking SFIs at par with those for commercial banks.

- **Oversight of TCCs and CUs.** Defining and initiating the implementation of a regulatory and supervisory regime for financial cooperatives that is proportionally equivalent to that applied in the banking system is key. It is also important to address the potential over-indebtedness of members of these institutions, including by defining maximum debt-to-income (DTI) ratios and requiring TCCs and CUs to report to the National Credit Bureau (NCB).

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 macroprudential tools. It is advisable to remove the requirement for approval by the MoF of the BoT's macroprudential measures on SFIs, extend macroprudential measures to cover all relevant institutions, and expand tools as needed.

Despite recent progress, the crisis management framework still has gaps. It is important to: (i) strengthen early warning indicators (EWI) 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).

Enhancing the funded pension scheme and building capacity to supervise new technologies should be priorities in the financial sector development agenda. The Thai system offers the same tax benefits to an individual pension plan (retirement mutual plan (RMF)) as it does to a collective plan (private voluntary provident fund (PVD)), giving company executives a disincentive to create collective schemes. Revising this incentive structure would help increase participation in the system and meet the needs of an aging population. While Fintech is not a financial stability risk at this time, an overall regulatory strategy should be articulated, and supervisory frameworks and capacity need to be strengthened as innovation enters the market.

Table 1. Thailand: 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 (¶15).	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 to an appropriate legislative body (¶19, 25).	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 regulation to SFIs and take corrective actions (¶19, 21, 25, 28).	BoT, MoF, OIC, SEC	MT
Risks to Banking Sector Stability		
Enhance the data management system and improve capacity for liquidity risk analysis (¶11).	BoT	MT
Extend the risk analysis to better cover a wider range of sources of risk with potential systemic spillovers, including concentration in loan portfolios (¶9).	BoT	NT
Collect more granular data on SFIs to refine the stress tests on solvency and liquidity (¶11).	BoT, MoF	NT
Macroprudential and Financial Stability		
Clarify the financial stability mandate of the FIPC and the MPC (¶19).	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 (¶19).	BoT, MoF, MoAC	MT
Introduce a broad-based DSTI ratio (¶19).	BoT	NT
Banking and Specialized Financial Institutions Oversight		
Amend internal guidelines on preventive and corrective action to reflect flexibility granted under FIBA (¶21).	BoT, MoF	MT
Implement the new definitions of loan restructuring and rescheduling and the current practices surrounding NPL identification to meet international standards (¶22).	BoT	MT
Continue reforms to supervise the three largest retail deposit-taking SFIs under the same standards as commercial banks (¶24).	BoT, MoF	MT
Thrift and Credit Cooperatives and 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 (¶29).	MoAC with support from BoT	MT
Address a potential over-indebtedness problem including by defining maximum DTI ratios, and requiring TCCs and CUs to report to the NCB (¶29).	BoT, MoAC	I
AML/CFT		
Enhance scope and capacity for risk-based AML/CFT supervision (¶30).	AMLO	MT
Crisis Management and Resolution		
Review and amend bank and SFI resolution law to align with Key Attributes (¶33, 37).	BoT/MoF	MT
Develop bank and SFI resolution toolkit and implement bank-specific resolution planning (¶34, 37).	BoT/MoF	MT
Strengthen ELA and deposit insurance arrangements in line with best practice (¶35, 36).	BoT, MoF, DPA	MT
Funded Pension Scheme and the Development of Long-Term Capital Market		
Improve incentive structure of PVD scheme to focus it on the objective of providing adequate pension and encourage lifecycle investment portfolios (¶38).	MoF, SEC	NT
*"I (immediate)" is within one year; "NT (near-term)" is one–three years; "MT (medium-term)" is three–five years.		

MACROFINANCIAL SETTING AND RISKS

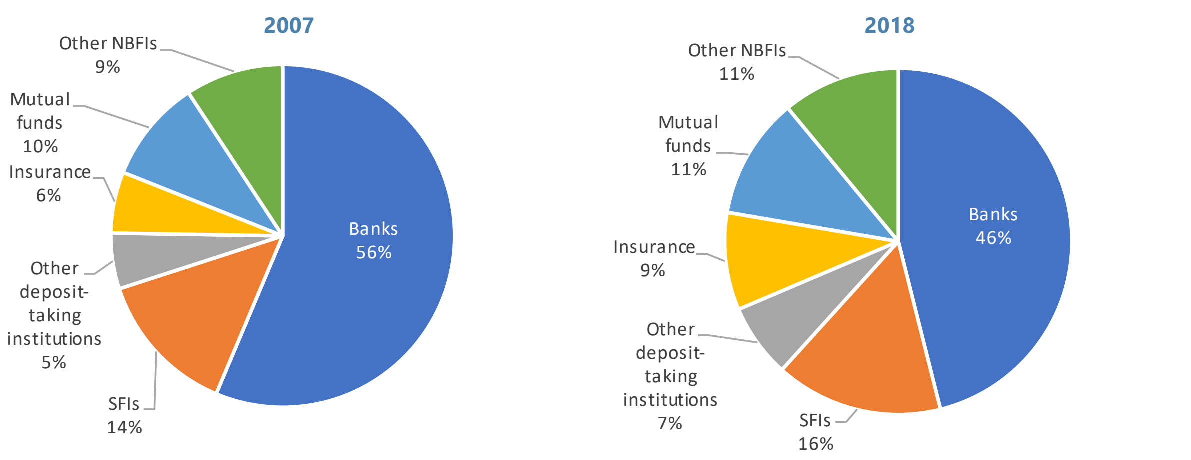
1. **Thailand's economy has been resilient to several shocks during the last decade.** These shocks included floods in 2011, supply shocks in global commodity markets, and political instability in 2013–14 leading to subdued economic activity. The resilience of the economy has been supported by ample international reserves, a flexible exchange rate, and a prudent fiscal position. 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. **While banks account for a sizable share of the financial sector, other deposit-taking institutions and NBFIs have grown during the last decade** (Figure 1 and Table 3). Banks represented 46 percent of total financial sector assets at end-2018 (down from 56 percent in 2007), with five domestic systemically important banks (D-SIBs) accounting for 70 percent of assets. The sector appears to be sound (Figures 2 and 3, and Table 4). 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) grew faster than banks' assets. SFIs' asset quality is somewhat weaker than that of commercial banks, with an average nonperforming loan (NPL) ratio of 4.5 percent as of September 2017.

Figure 1. Thailand: Financial System Structure

(in percent of total financial assets)

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

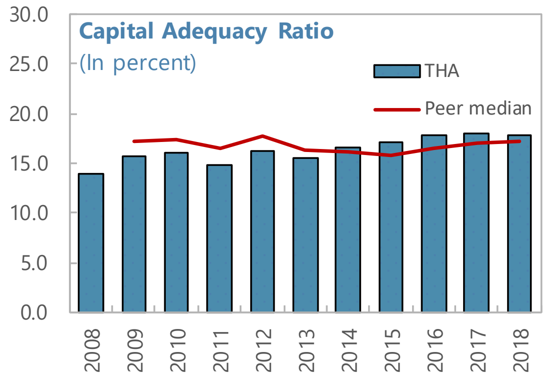


Source: The BoT and Fund staff estimates.

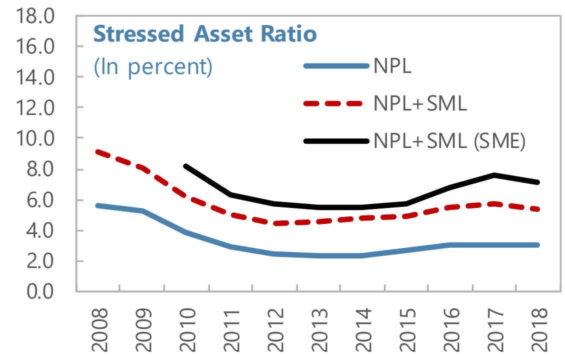
Figure 2. Thailand: Financial System Soundness Indicators

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

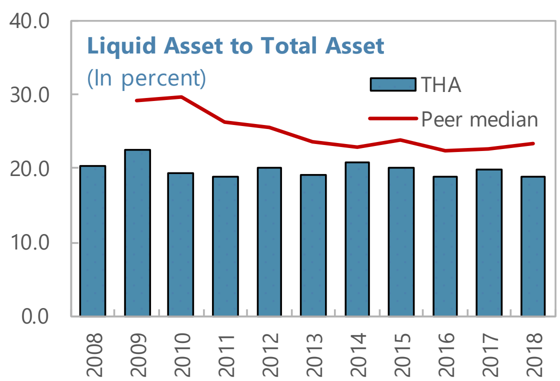
The capital adequacy ratio remains well above the regulatory minimum and increasing…



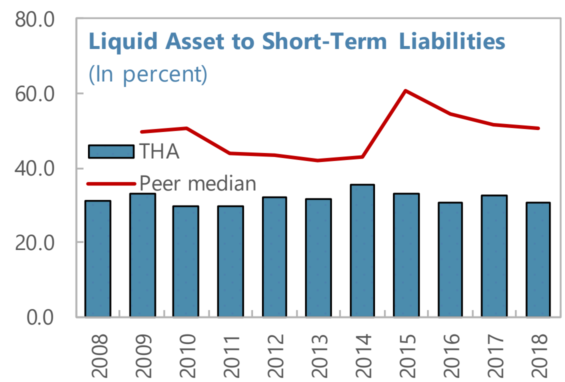
…and the NPL ratio is low, albeit the quality of credit to SMEs is showing signs of deterioration.



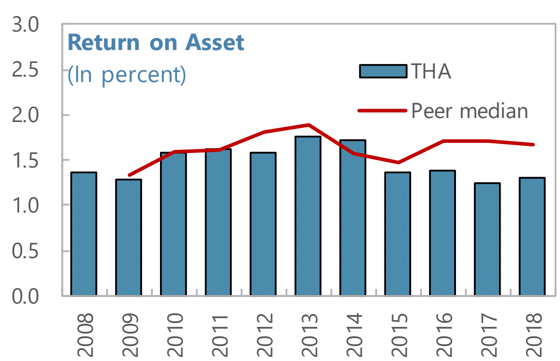
The share of liquid asset to total asset is moderately below the median of peer countries….



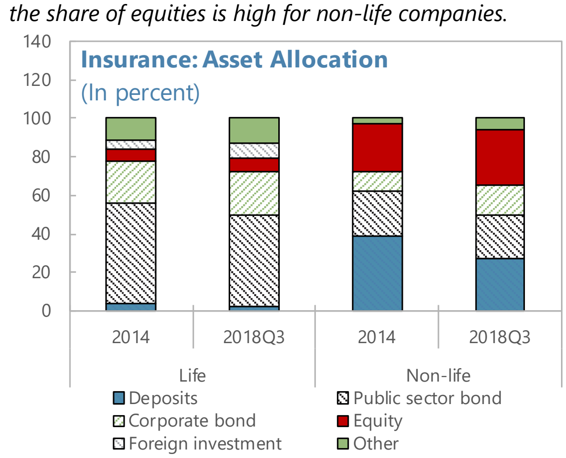
…and Thai banks appear to rely more on short-term liabilities.



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.

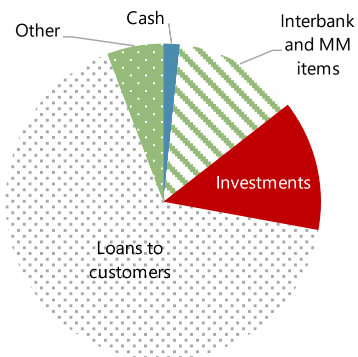
Figure 3. Thailand: Balance Sheet Structure of Banks and SFIs

(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.

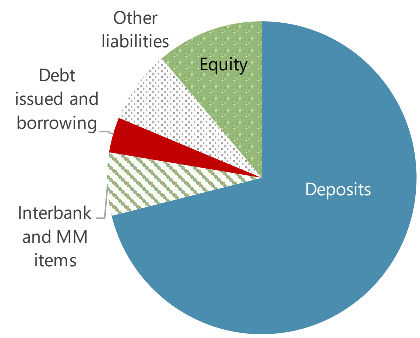
Loans account for around two-thirds of banks' assets…

Structure of Bank Assets



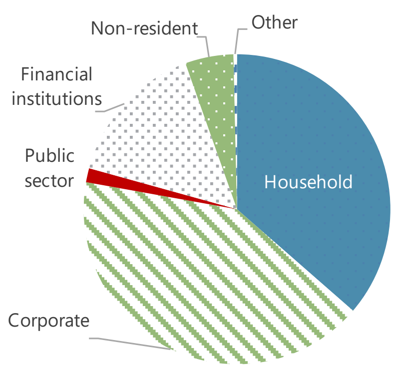
…and 70 percent of the liabilities are in deposits, with a loan-to-deposit ratio slightly below 100 percent.

Structure of Bank Liabilities and Equity



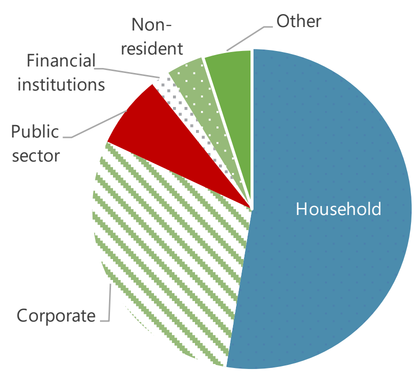
Corporates and households account for roughly one-third of banks' portfolio each, with small exposure to the public sector.

Structure of Bank Loans



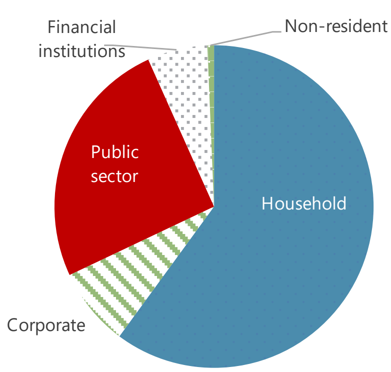
Banks rely mostly on retail deposits for funding.

Structure of Bank Deposits



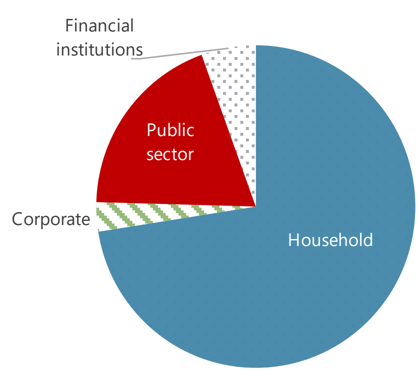
Households account for 60 percent of SFIs' loan portfolio…

Structure of SFI Loans



…and close to three-quarters of funding.

Structure of SFI Deposits



Sources: The BoT.

3. The assets of the main NBFIs reached 61 percent of GDP in 2018 (up from 33 percent in 2007). The insurance sector 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 at around 30 percent, and investments in riskier assets have increased.

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.

4. Thailand's capital markets are largely on par with regional peers (Figure 4). Equity market capitalization reached 99 percent of GDP at end-2018. The domestic bond market is dominated by government and central bank paper, and corporate bonds represent one quarter of outstanding debt securities mostly investment-rated, baht-denominated and held by domestic retail and institutional investors. Retail clients dominate the investor base for mutual funds. 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 asset under management (AUM).

5. Financial vulnerabilities appear to be contained, but household indebtedness is relatively high and there are weaknesses in some corporates and SMEs (Figure 5).

- ***The household debt to GDP ratio remains among the highest in the region, despite a moderate decline in recent years*** (Figure 6). The significant pick-up through 2013 was driven by personal loans and hire purchase (mainly autos), partly reflecting one-off factors (e.g., the 2011 floods and the first car tax rebate scheme). Housing prices have risen sharply in areas of Bangkok, especially condominium prices backed by an increase in foreign purchases, thus making the housing market vulnerable to volatility in external demand. The increase in the broader housing market has been moderate, particularly when compared to regional peers.

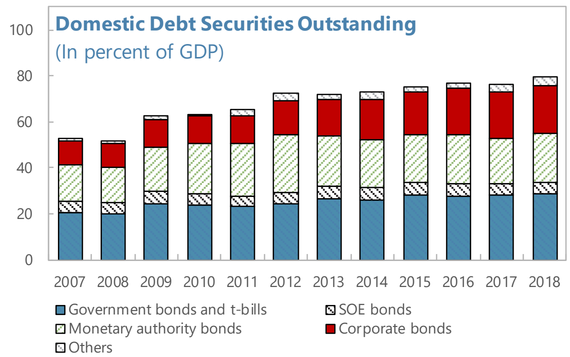
- ***While pockets of vulnerability have emerged in the corporate sector, systemic risks appear contained.*** Corporate debt has been broadly stable as a percent of GDP over the past decade. However, profitability of the companies listed on the Stock Exchange of Thailand (SET) on average has declined and the share of debt at risk (defined as the debt of firms with low interest coverage ratio (ICR) has increased since 2008 (Figure 7).[1] Vulnerabilities are also rising among SMEs, which represent around 40 percent of GDP and 80 percent of the total labor force.

[1] Based on a sample of 459 listed companies with asset size larger than US$25 million. The leverage ratio and debt-at-risk would be lower when the asset cut-off is reduced and the sample size is expanded to include smaller firms.

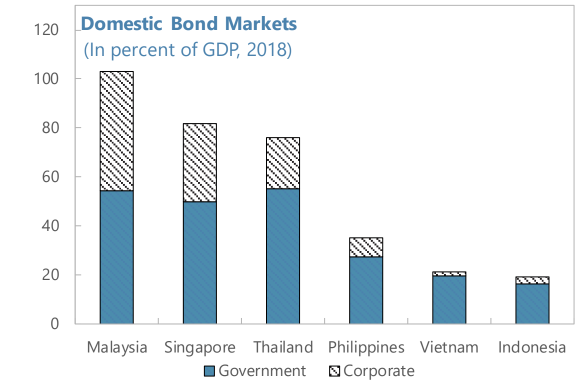
Figure 4. Thailand: Capital Markets and Mutual Fund Industry

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

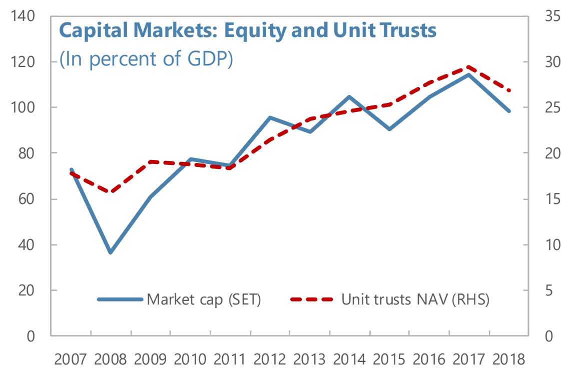
The domestic bond market is dominated by government and central bank papers.



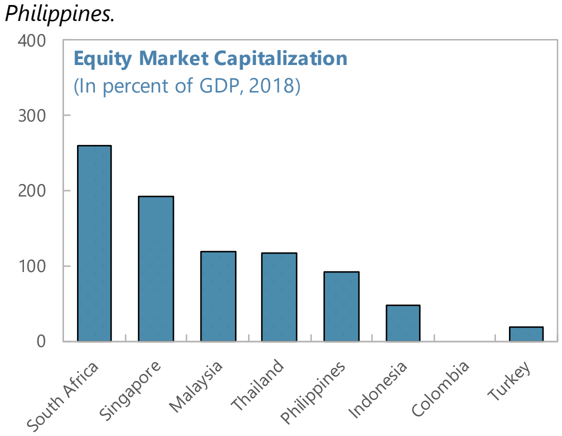
While the size of the government bond market is similar to that in Malaysia and Singapore, the corporate bond market is less developed.



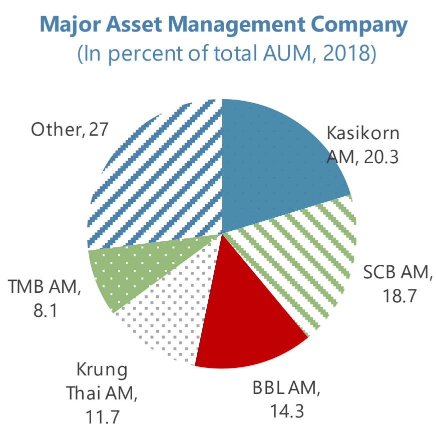
Equity market capitalization has tripled since 2008…



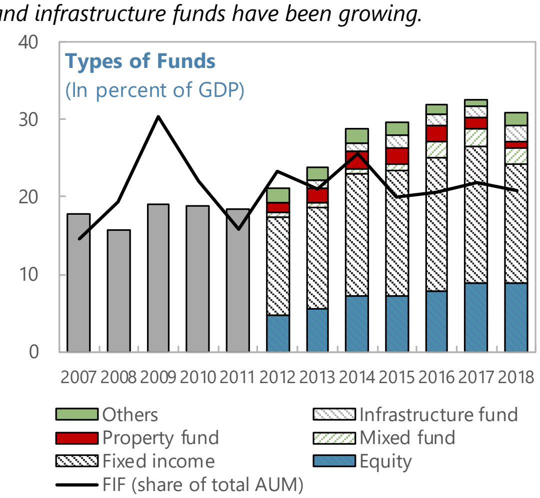
…and is at a similar level compared to Malaysia and the Philippines.



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.

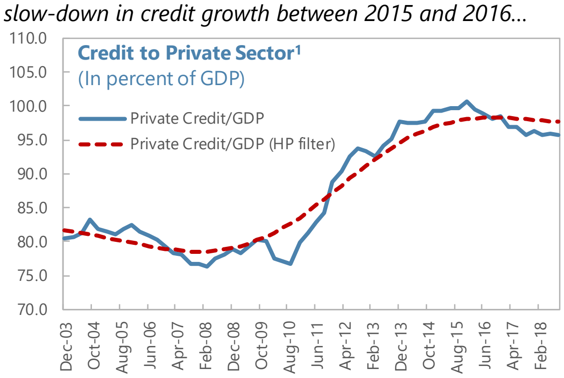


Sources: The BoT, Asian Bonds online, dXdata, Association of Investment Management Companies.

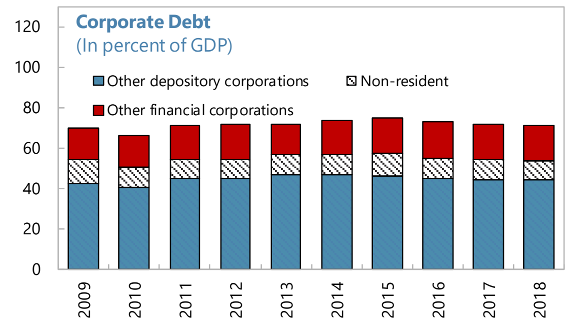
Figure 5. Thailand: Financial Vulnerabilities

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.

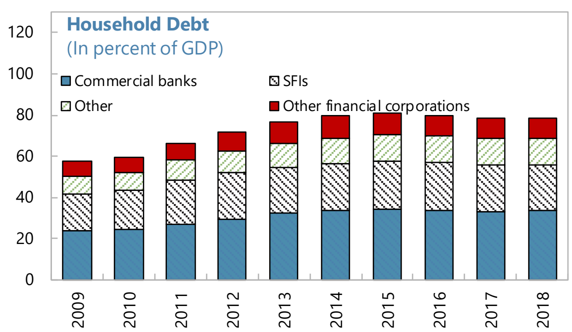
While the credit gap turned in mid-2016, reflecting a slow-down in credit growth between 2015 and 2016…



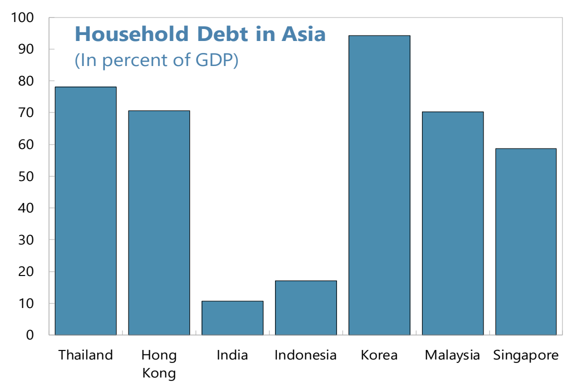
While corporate debt-to-GDP has been broadly stable…



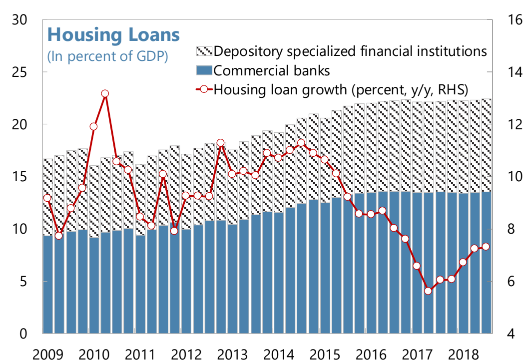
…total household indebtedness has decreased somewhat since its peak in 2015…



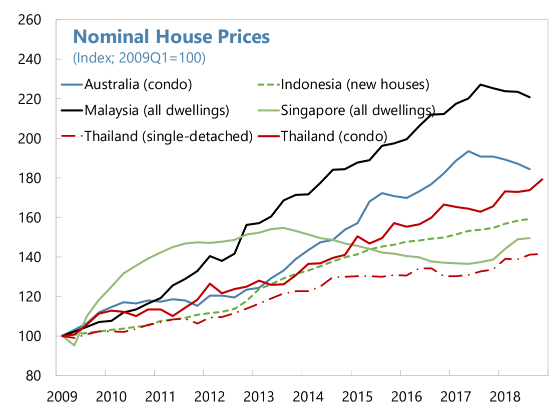
…but remains high compared to regional peers.



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.



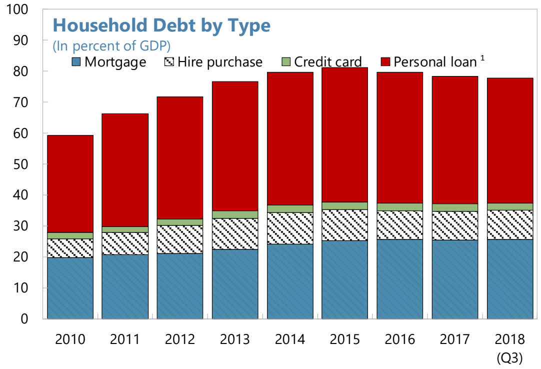
Sources: The BoT, CEIC Data Co. Ltd, Datastream, Haver Data Analytics, and IMF staff calculations.

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

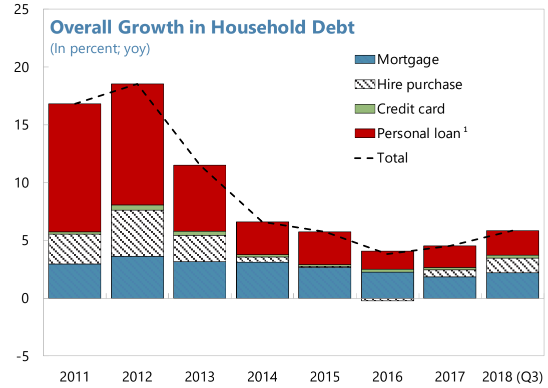
Figure 6. Thailand: Selected Facts of the Household Sector

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.

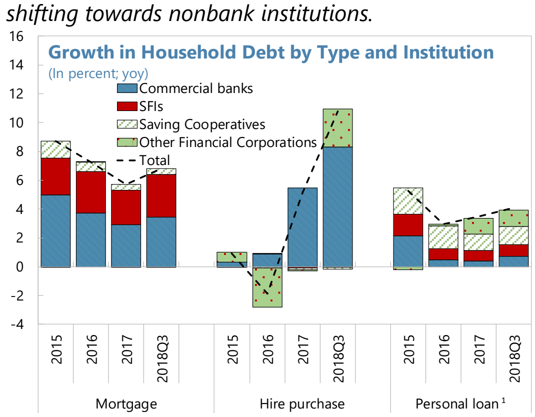
While total household debt as a share of GDP has stabilized since 2015…



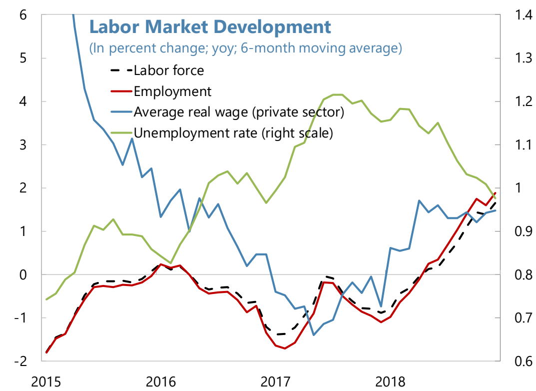
…in nominal terms, household debt continued to grow driven by hire purchase, mostly associated with auto loans.



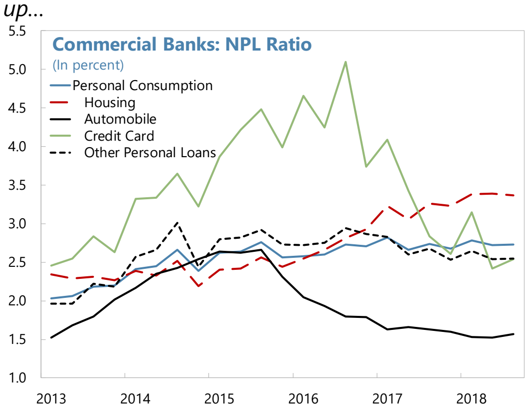
Growth in hire purchase (auto loans) accelerated in recent months; the contribution to the growth in personal loans is shifting towards nonbank institutions.



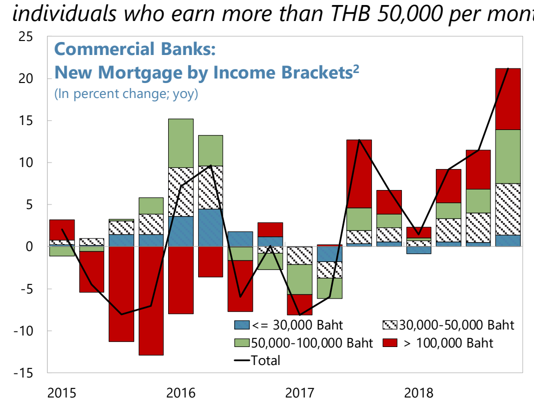
The recent pick-up in credit demand is supported by favorable labor market developments.



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.

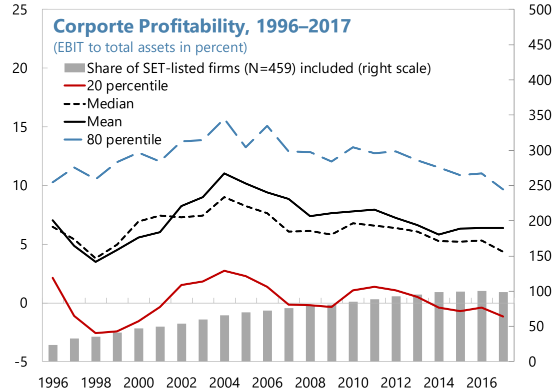
[1] Includes loan for business purpose and other categories.

[2] Based on monthly income.

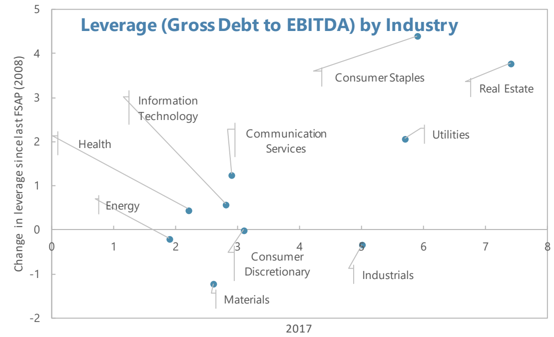
Figure 7. Thailand: Selected Facts of the Corporate Sector

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.

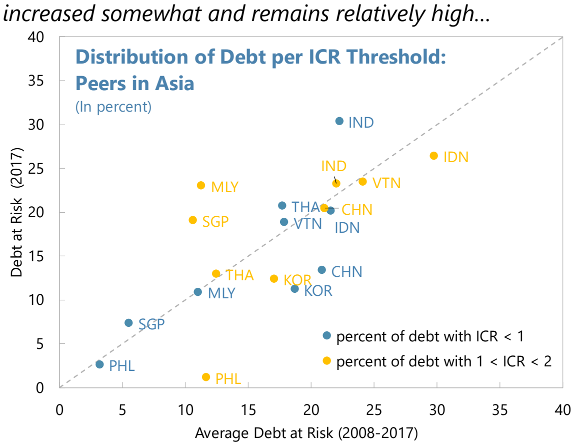
Corporate profitability has been on the decline since the fallout of the Global Financial Crisis in 2008–2009 …



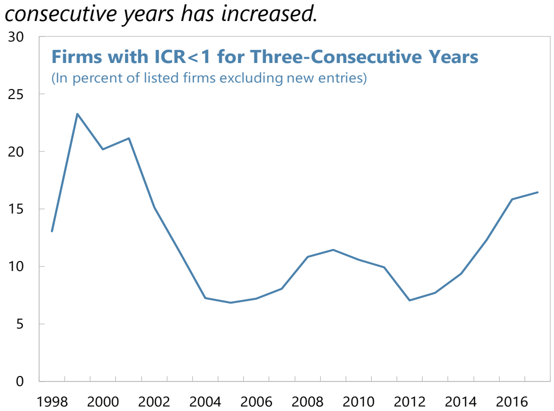
…and the leverage has increased substantially in sectors such as real estate, utilities, and some manufacturing …



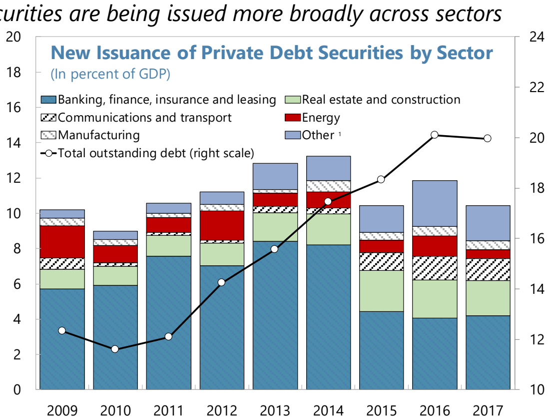
Debt held by Thai corporates with ICR less than 1 has increased somewhat and remains relatively high…



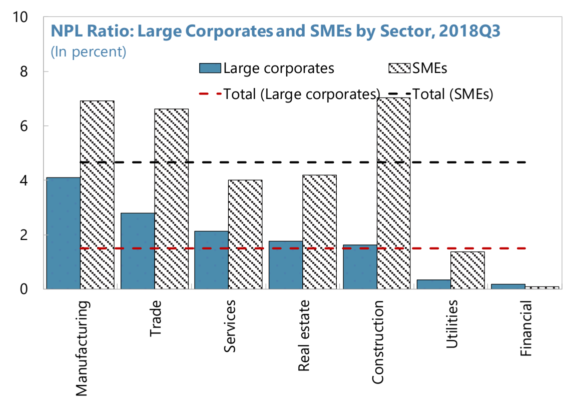
…and the number of firms with ICR less than 1 for three consecutive years has increased.



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.

The NPL ratio of SMEs has increased from 3.5 percent in 2015 to 4.5 percent at end-2018 and it is particularly high in the construction sector (but remains below the levels seen ten years ago). 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 (¶8 and 9).[2]

FINANCIAL SECTOR STABILITY AND RESILIENCE

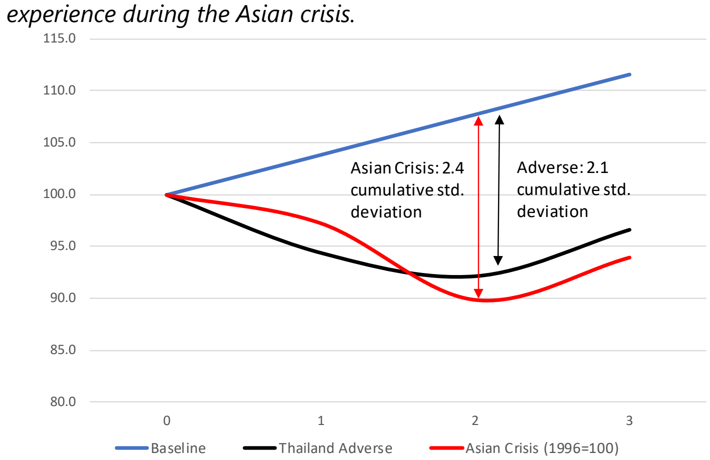
6. The analysis of resilience is linked to four major macrofinancial risks that might challenge the solvency or liquidity of the banking system (Risk Assessment Matrix (RAM), Table 5). These are: (i) weaker-than expected global growth in key advanced economies and in China, (ii) sharp rise in risk premia, (iii) entrenched low inflation, and (iv) debt overhang. In addition, should political uncertainty emerge and lead to a crisis of confidence, equity prices could collapse, the exchange rate could depreciate sharply, and funding pressures could arise. The FSAP team assessed the resilience of the banking system and investment funds (IFs) and conducted some basic risk analysis of SFIs under a battery of stress tests (Appendix II).

A. Solvency Stress Tests

7. The FSAP team and the BoT ran parallel solvency stress tests covering credit, market, funding, and interest rate risks under two common macroeconomic scenarios. The exercise covered eight commercial banks (the 5 D-SIBs and the three internal ratings-based (IRB) banks), representing 75 percent of the banking sector assets, with the cutoff date of end-June 2018. The baseline scenario reflects the June 2018 World Economic Outlook (WEO) macroeconomic projections (Table 6). The adverse scenario represents a tail-risk event and captures the key macrofinancial risks identified in the RAM. The adverse scenario assumes a significant slowdown, similar to the experience during the 1998 Asian Crisis (Figure 8 and Table 6) and is consistent with estimates based on Growth-at-Risk (GaR). It is assumed that the central bank would privilege restoring growth—by cutting the policy rate—over defending the currency, given the high level of international reserves and current account surplus (and likely fall of imports in the adverse scenario).

Figure 8. Thailand: Comparison Between Thailand Macroeconomic Baseline and Stress Scenarios

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



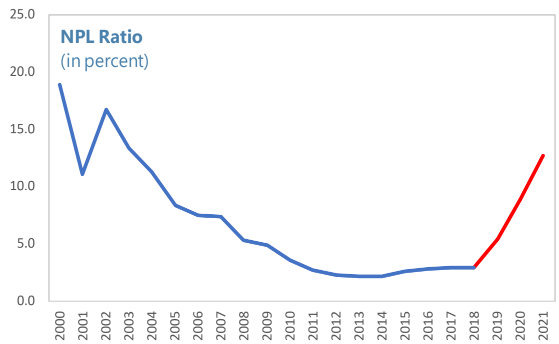
Sources: IMF staff estimates.

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

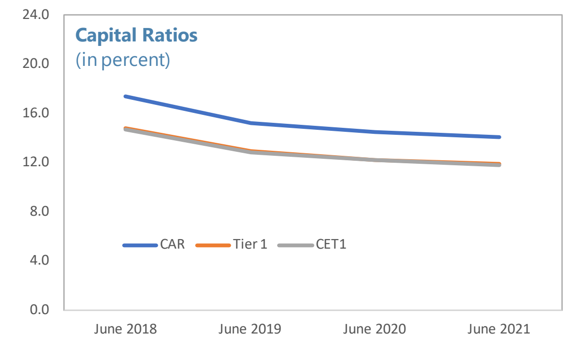
8. The results suggest resilience of the banks covered by the exercise to the adverse scenario (Figure 9). NPL ratios would increase substantially, and most banks would experience significant losses in net income and a decline in capital ratios. Three banks would experience a modest erosion of their capital conservation buffer, which would be easily restored with one-quarter of "normal" profits. The exploratory solvency stress tests on SFIs indicate an important vulnerability under the adverse scenario for certain SFIs due to limited asset diversification, but the impact could be largely absorbed by high provisioning. Collecting more granular data on SFIs is key to refine the exercise.

Figure 9. Thailand: Solvency Stress Test Results

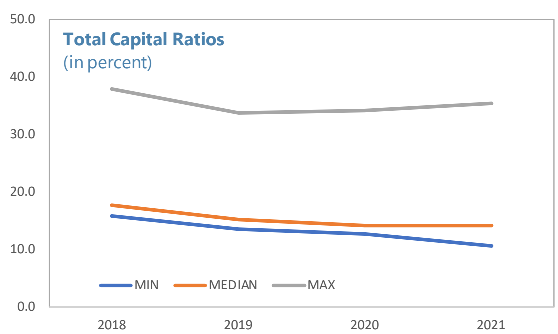
Under the adverse scenario the banks' NPL ratios increase substantially...



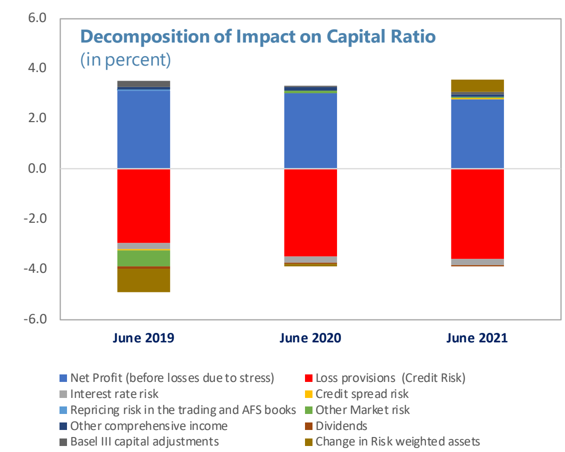
...capital ratios decline...



...although with significant dispersion...



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



Sources: The BoT and IMF staff estimates.

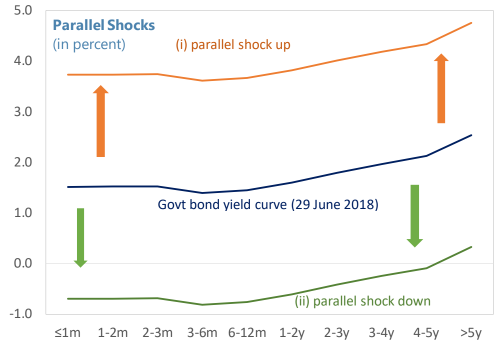
Note: Hurdle rates for total capital are 8.5 percent for minimum requirement, 9.5 percent including D-SIB surcharge, 11 percent including capital conservation buffer (CCB), and 12 percent including D-Sib surcharge and CCB.

9. Sensitivity tests broadly confirm the overall resilience of the banking system (Figures 10 and 11). The sensitivity tests for interest rate risk in the banking book (IRRBB) are meant to complement the moderate policy rate assumption in the macro scenario. The results indicate a relatively limited exposure of the banks; no bank would breach the 15 percent Tier 1 capital threshold for the impact on the Economic Value of Equity (EVE), and all remain within the existing capital buffers following the impact on Net Interest Income (NII). The risk of credit concentration is

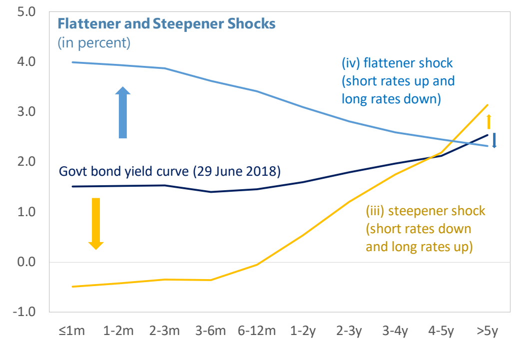
Figure 10. Thailand: Interest Rate Risk in the Banking Book—Impact on EVE and NII[1]

Sensitivity analyses indicate the impact of interest rate shocks is relatively contained.

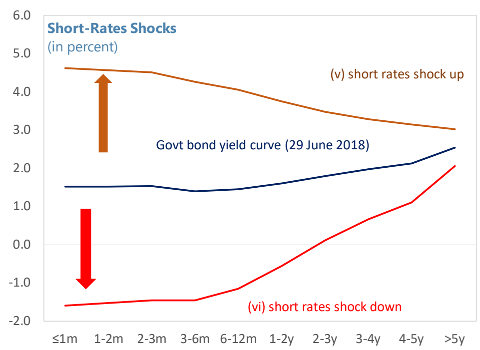
Six standard scenarios envisaged in the Basel standard are used, including parallel shocks…



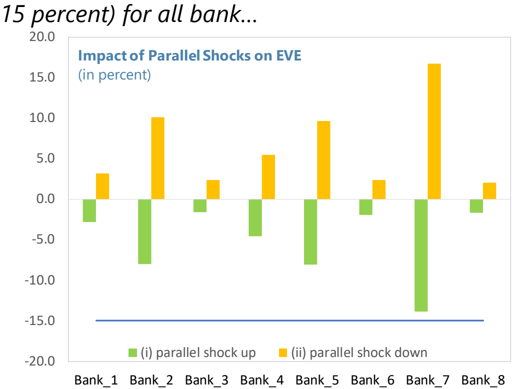
…different types of yield curve inversion…



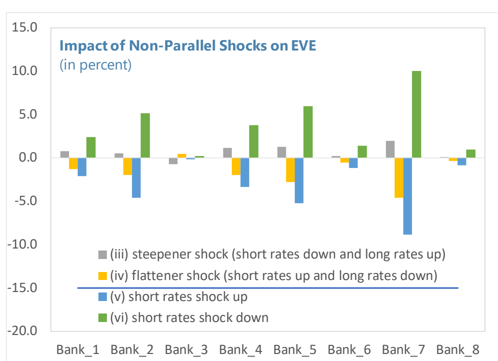
…and shocks concentrated in the short-end of the curve.



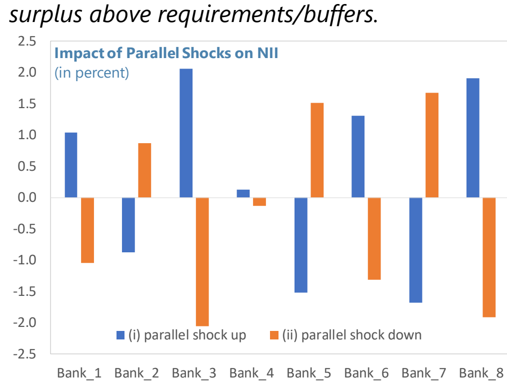
While the EVE impact, in terms of Tier 1 capital, of parallel shocks is within the suggested threshold (-15 percent) for all bank…



… non-parallel shocks generate a smaller impact.



For NII, parallel shocks cause impacts of different sign across banks, but all within the size of existing capital surplus above requirements/buffers.



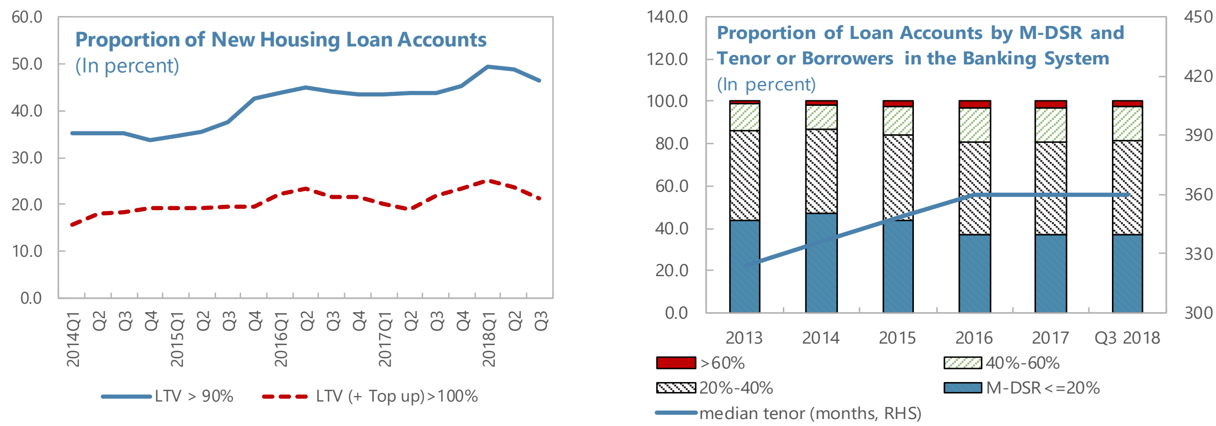
Sources: The BoT and IMF staff estimates.

[1] Basel Committee on Banking Supervision, "Interest rate risk in the banking book," April 2016. The impact on NII was estimated within a 1-year horizon based on two 'parallel shock' scenarios. The impact on EVE was estimated under the six scenarios envisaged by the Basel standard: (i) a parallel shock up; (ii) a parallel shock down; (iii) a steepener shock (short rates down and long rates up); (iv) a flattener shock (short rates up and long rates down); (v) a short rates shock up; and (vi) a short rates shock down.

moderate, and a reverse stress test indicates that the default of the five largest borrowers would cause two banks to breach the Tier 1 requirements, and one bank would breach the required threshold with the default of top three borrowers. Improving the analytical approach to concentration risk is recommended, including by developing analytical tools to assess its implications on systemic risk. Market risk is also moderate for most banks. A historical simulation of foreign exchange (FX) losses suggests that exchange rate risk is small, partly reflecting net open position limits (and indirect FX risk is likely to be low given the modest share of FX loans for most banks). While risks from the residential property market are difficult to assess due to limited data,[3] the FSAP team's estimate point to a likely steady increase in the debt service-to-income (DSTI) ratios in the past five years across all income brackets (see Figure 11 on loan-to-value (LTV) and DSTI ratios on mortgages). SFIs' exposure to interest rate risks appears to be significant.

Figure 11. Thailand: Profile of New Mortgages

The proportion of new housing loans has been increasing in recent years, though it declined in the course of 2018. The proportion of households with high mortgage debts service ratio continued to edge higher.



Source: The BoT.

B. Liquidity Stress Tests

10. A set of liquidity stress tests was performed jointly by the BoT and the FSAP team based on commonly agreed assumptions. The tests were based on two frameworks: (i) a severe scenario reflecting shocks to a baseline scenario, with outflows of retail deposits, wholesale funds, and mutual funds due to a confidence crisis and a resulting sharp exchange depreciation; and (ii) an implied cash-flow-based analysis by maturity bucket ranging from seven days to more than a year, with the same severe scenario in the liquidity coverage ratio (LCR) analysis resulting in higher run-off rates on funding sources. An analysis of the Net Stable Funding Ratio (NSFR) was not undertaken due to inadequate quality of the NSFR reporting, which began only in September 2018. All these

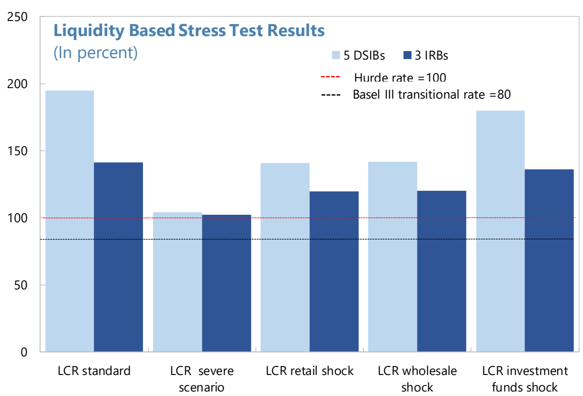
[3] In the BoT stress-testing framework, these risks are indirectly captured in the probability-of-default satellite models of banks that have a significant proportion of housing loans in their portfolios by including the change in house prices among the regressors.

tests were conducted in baht, as banks are not required to report their foreign exchange positions unless they have a significant FX position and Thai banks have limited exposure to FX currencies.

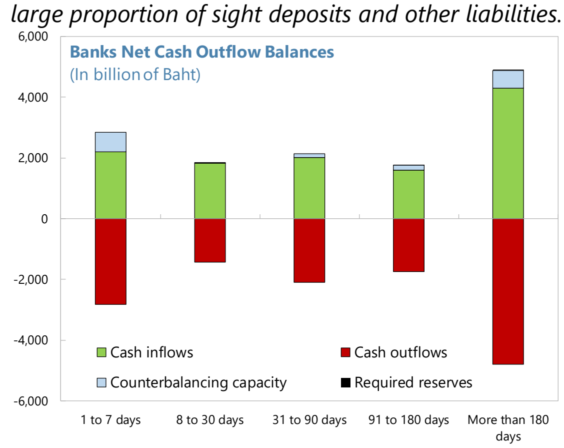
11. The results suggest that banks are resilient to large withdrawals of funding, despite their front-loaded funding maturity structure (Figure 12). Three banks fall below the hurdle rate of 100 percent in the severe scenario, of which one falls below the Basel III transitional threshold of 80 percent. The aggregate liquidity shortfall of 0.7 percent of total assets (1.5 percent of GDP). The results of the cash-flow-based analysis were broadly consistent with the LCR test over a one-month horizon. All but two banks have a positive funding over all the time horizons. Two banks would have a negative cash flow over the "180 days and beyond" window (with small shortfall of 6 and 7 percent respectively, of each bank's total assets). It is key to enhance the data management for liquidity risk to ensure the availability of more granular data, including on a detailed balance-sheet decomposition by maturity. A simplified liquidity stress test of SFIs suggests that all three SFIs have sufficient liquidity to withstand an 11 percent decline in deposits over a five-day period, but more granular data is also needed to refine this exercise.

Figure 12. 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.

12. The liquidity stress test on IFs showed that they would be able to withstand a severe redemption shock and its impact on the banks and the bond market would be limited (Table 7).[4] The cash positions of open-ended daily fixed income funds and money market funds are mostly sufficient to meet redemption demands when assuming that a fund covers redemptions by liquidating its most liquid assets in an orderly manner (waterfall approach); when assuming that a fund covers redemptions by maintaining intact the structure of assets (pro rata approach) a majority of the IFs retain a good amount of liquid assets, but a more aggressive sale of government bonds is required and would have a larger impact on the bond market. Credit lines between banks and asset management companies would provide an additional layer of liquidity buffer.

C. Interconnectedness, Contagion, and Systemic Risk

13. Contagion and systemic risks stemming from interlinkages are limited, reflecting the small interbank exposures and strong capital positions (Figure 13). The exercise based on Espinoza-Vega and Solé (2010) showed that no failure of a single domestic bank would trigger another bank to fail, indicating the absence of a "cascade effect." Banks' cross border exposures are also small. Inter-sectoral exposures under the balance sheet analysis also point to limited cross-border exposures except in the case of corporate sector (primarily through foreign direct investments (FDIs)). The relatively low degree of interconnectedness was confirmed by financial stability measures (Figure 14), which indicate that contagion among the five largest banks, at its highest at the height of the Global Financial Crisis (GFC), has subsequently decreased to the lowest levels in the past 11 years.

14. Market data-based measures suggest a low degree of interconnectedness between banks and nonbanks (insurance and IFs) (Figure 15). The pairwise interconnected measures covering 32 institutions (banks, insurance companies, investment funds, and corporates) indicate banks to generally have a net outward spillover effect. While insurance companies appear to have no strong pairwise interconnectedness with Thai banks, two insurers show a relatively high degree of outward spillovers to the rest of the nonbank sector.

INSTITUTIONAL ARRANGEMENT FOR COORDINATION

15. The establishment of an overarching body (e.g., a Financial Stability Committee (FSC)) would strengthen cooperation, coordination, and information sharing among the agencies. The FSC should be outside the BoT, with supervisory agencies, the MoAC, the DPA, the FIDF and the MoF represented by the head of the agency and a nominated deputy.[5] It would provide a forum for the regular exchange of information on and coordination in respect of all financial sector policy and

[4] The sample covered 72 percent of fixed-income funds or 33 percent of net asset value of the sector.

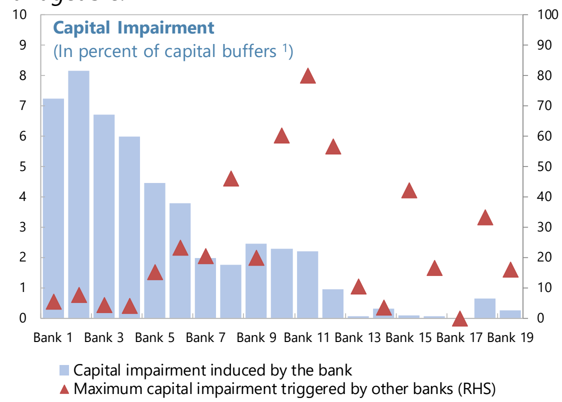
[5] This broader membership would enhance further the domestic coordination arrangements that are currently taking place through the FIPC, the three-regulator steering group comprising the BoT, SEC, and the OIC, as well as through the cross directorships in the supervisory agencies.

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.

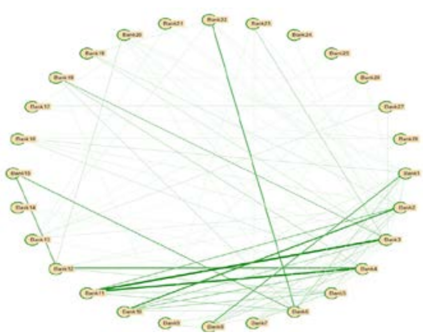
Interbank Exposure Network

The impact on capital buffers from extreme shocks is manageable.



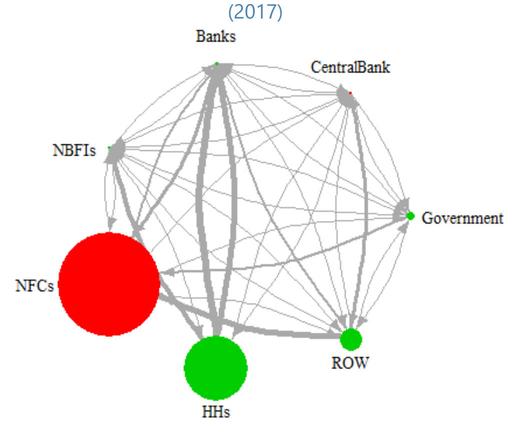
Cross-border exposures are limited, except for Bank 11, which has a strong relationship with its parent bank.

Interbank and Cross-Country Exposure Network



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.

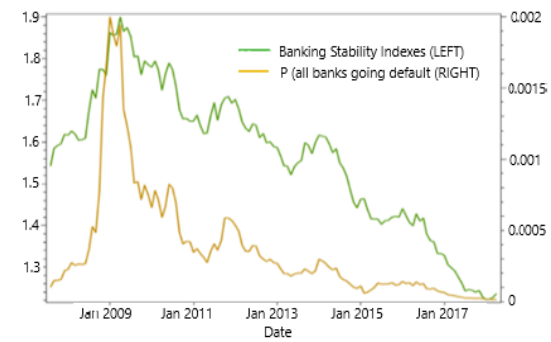
[1] Aggregate capital buffer of other banks when the bank is the trigger; capital buffer of individual bank otherwise.

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 of its deliberations should be established in law.

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

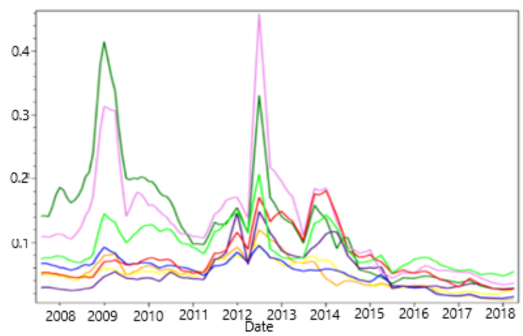
Contagion among the largest banks has steadily decreased in the past 10 years…

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



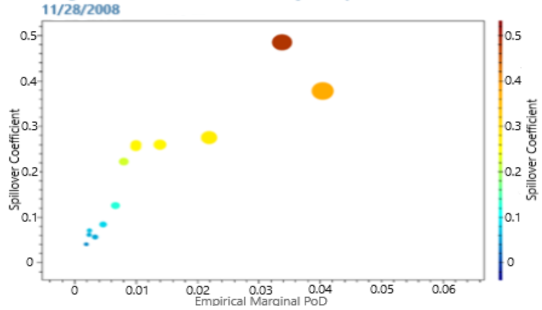
…while the spillover coefficients of the largest insurance companies show at least two separate peaks of increased systemic risk.

Spillover Coefficient for Eight Largest Insurance Companies



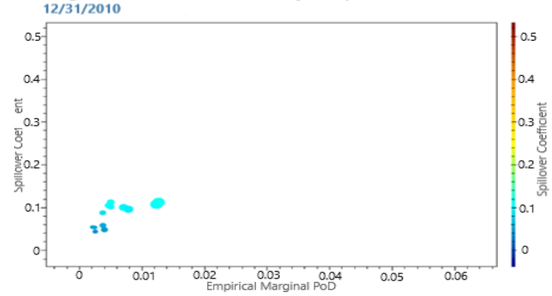
Marginal probabilities of distress and spillover coefficients reached their maximum during the GFC for banks. …

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



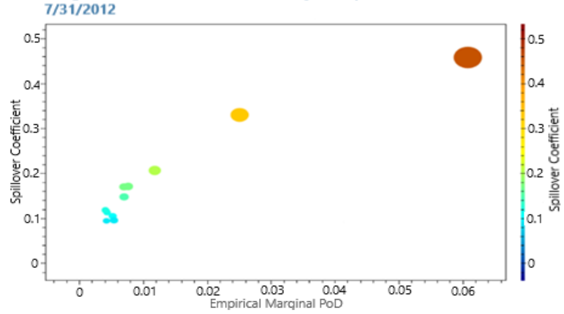
…and after a period of relative tranquility…

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



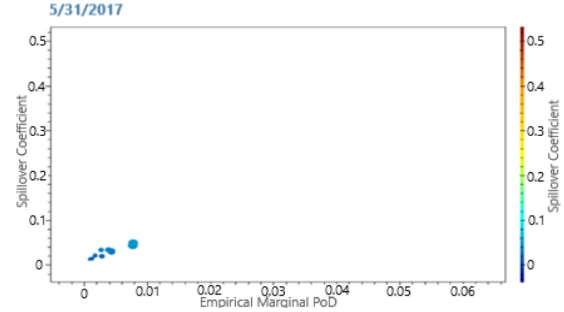
…tensions reemerged in 2012, triggered in the insurance sector…

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



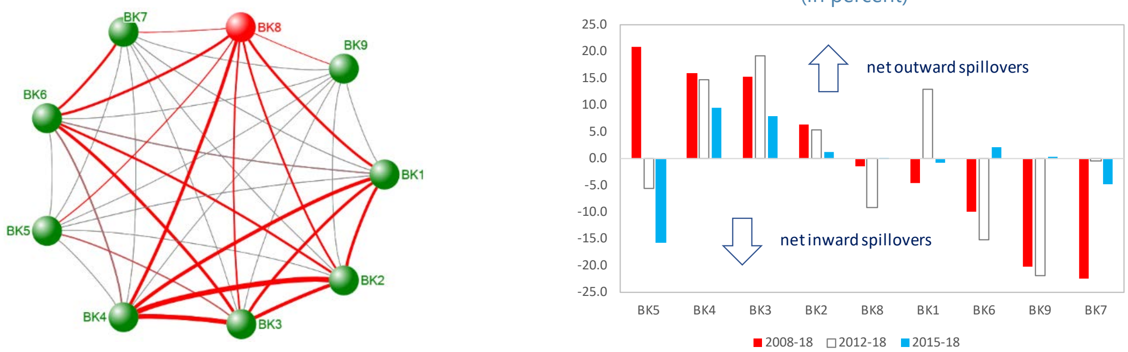
Sources: Moody's CreditEdge and IMF staff estimates.

[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.

Thai Bank Network | **Outward and Inward Spillovers** (In percent)



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).

16. 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. [6] 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 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 OVERSIGHT

A. Macroprudential Policy

17. Significant progress has been made on the macroprudential framework and policies in Thailand, but there is room for further improvement. The Financial Stability Unit (FSU) was created within the BoT in 2016. While not explicitly mandated, macroprudential authority lies

[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.

primarily with the FIPC. 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. Joint meetings between the MPC and the FIPC serve an important role in assessing risks to financial stability. The FIPC does not have any power over TCCs and CUs, which are regulated by the MoAC (which is also in charge of promoting these institutions). The OIC and the SEC also play a key role in macroprudential policy. The BoT's systemic risk analysis and monitoring are solid, but could be improved with better data, including dynamic information on borrowers' characteristics and LTV ratios,[7] as well as data on TCCs and CUs.

18. While recent macroprudential measures appear to have been effective, some could be strengthened, and existing leakages could be minimized. Maximum DTI ratios on credit cards and personal loans from commercial banks were introduced in 2017, and a hard limit on LTV was introduced in April 2019 (ranging from 70 to 100 percent, depending on the type of property). 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. Reflecting the close cooperation between the MoF and the BoT, 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]

19. 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 (¶16); (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

[7] This information is collected monthly at the inception of the loans for commercial banks (since 2008) and SFIs (since 2013). Monitoring the evolutions 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.

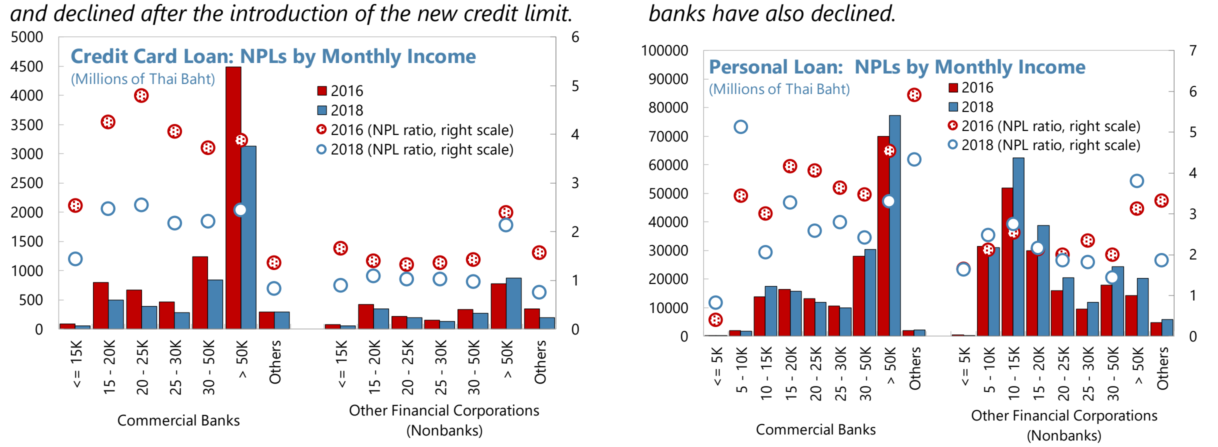
macroprudential tools are applied to SFIs (preferably by amending the Financial Institutions Business Act (FIBA)) and that the BoT macroprudential regulations cover TCCs and CUs when relevant, without requiring the approval of any external institutions (including by amending the BoTA and the Cooperatives 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: The BoT and IMF staff calculations.

B. Banks and Specialized Financial Institutions

Commercial Bank Supervision

20. The oversight of the banking sector is strong (Annex I). The enactment of the 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 enhanced the BoT's consolidated supervision and enforcement authority of conglomerates (typically structured with a bank as parent). The BoT's supervisory framework and practices provide the foundation for the continued development of risk-based supervision.

21. Notwithstanding the improvements, the efficiency of enforcement action and the operational independence of the BoT could be further enhanced. The corrective action requirements under FIBA and the BoT internal guideline requirements on prompt preventive action (PPA) and prompt corrective action (PCA) should be aligned to emphasize the flexibility that FIBA grants the BoT for implementing PCA and PPA. The criteria for notifying the MoF of corrective action taken should be narrowed to situations of systemic impact or bank failure. While there is no objective evidence of lack of independence, the negative net worth of the BoT could make it vulnerable to political interference. Moreover, the independence of the BoT could be usefully strengthened by: (i) narrowing the membership of the FIPC (¶16); and (ii) eliminating the requirement for Cabinet to approve decisions on ELA and bank resolution unless government funding or indemnities are needed (¶35).

22. 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 BoT supervisors are aware of these gaps and have issued a regulation to be implemented once IFRS 9 becomes effective in 2020. The impact of the shortcomings is also mitigated by the in-depth procedures performed by the BoT supervisors to assess the weaknesses and the high levels of provisioning compared to international peers.

SFI Supervision

23. The regulatory framework for SFIs is complex, with responsibilities divided between the MoF and the BoT. The Fiscal Policy Office and the State Enterprise Policy Office in the MoF act as the policymaker and 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, government policies, and functions. This could lead to forbearance and/or loosening of standards.

24. Establishing a neutral regulatory and supervisory framework for commercial banks and SFIs is important. Despite the general perception that the BoT is supervising SFIs 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 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

25. Insurance supervision has evolved significantly over the past decade (Annex II). Major improvements include the development of qualified and effective supervisory staff, the implementation of stronger supervisory requirements, an effective risk-based supervisory framework, and enhanced information exchange and cross-border cooperation. Areas for additional improvements include:

- ***Enhancing the operational independence of the OIC.*** The MoF should not be allowed to override any decision of the OIC, and all commissioners should be appointed based on technical qualifications rather than their positions in other government organizations. In addition, the OIC, rather than the Minister, should be given the authority to set fee levels on the industry.

- ***Developing the accountability framework.*** A more formal and more elaborate accountability framework to government should be developed. For example, a publicly available, multi-year strategic plan and a publicly-available annual report could be developed in which the OIC would report on progress in meeting the goals and objectives set out in the strategic plan.

- ***Updating licensing and suitability requirements to ensure 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.

D. Financial Market Infrastructures

26. Thailand has a well-developed payment, clearing, and settlement infrastructure (Annex III). The Bank of Thailand Automated High-Value Transfer Network (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 Thailand Securities Depository (TSD) is the sole central securities depository and the securities settlement system for government securities, corporate bonds, and equities. The TSD is a fully owned subsidiary of the SET.

27. While the BAHTNET and the TSD have sound operation and comprehensive management frameworks, there is room for further improvements. In particular:

- ***BAHTNET.*** Further improvements include: (i) preventing participants from pledging their own securities as collateral; (ii) implementing concentration limits; (iii) conducting independent review and test of the haircut methodology; and (iv) developing an automated collateral management system.

- ***TSD.*** Further enhancements include: (i) protecting security balances of its depositors and customers in the event of TSD going bankrupt; (ii) establishing beneficial ownership rights of securities balances of depositors and investors; and (iii) strengthening risk management on general business and investment risks, recovery tools, and wind-down plans.

E. Capital Markets

28. The capital markets regulatory framework has improved significantly since the last FSAP (Annex IV). Among others, amendments to the Securities and Exchange Act (SEA) empowered the SEC to bring and enforce civil actions for violations, improved the rights of minority shareholders, strengthened protection of investor assets held by a failed securities company, and provided SEC with greater authority to cooperate with foreign regulators. Areas for further improvements include:

- ***Enhancing the operational independence and authority of the SEC.*** Further amendments to the SEA should: (i) enable the SEC to institute civil proceedings for any violation of the SEA or of SEC regulations, and (ii) transfer from the MoF's to the SEC Capital Market Supervisory Board final authority to approve and revoke licenses.

- ***Conducting a comprehensive review of SET rules on market operations, fees, and trading.*** Transparency in the OTC bond market should be improved, and SEC and the BoT should develop a roadmap to implement mandatory centralized clearing of OTC derivatives contracts.

F. Thrift and Credit Cooperatives and Credit Unions

29. Strengthening the regulatory and supervisory regime of TCCs and CUs should be a top priority (Appendix III). The financial performance of these institutions has been mixed and many of their members appear to be over-indebted. Because cooperatives generally do not share information with the NCB, their borrowers' overall debts are not taken into account by other lenders. Thus, it is key to:

- ***Define and initiate a regulatory and supervisory regime for financial cooperatives that is proportionately equivalent to that applied to the banking system.*** In the medium-term, the MoAC should do its utmost to separate its regulation and supervision functions from its promotion function and ensure the independence of the regulation and supervisory functions. The ongoing collaboration between the BoT and the MoAC should be institutionalized, and the regulatory and technological capacities as well as the enforcement powers of relevant departments of the MoAC should be strengthened. If there is insufficient progress in addressing the current supervisory weaknesses 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 and supervisory powers.

- ***Determine the actual level of debt of cooperative members.*** Financial cooperatives should be required to report members' debts and repayments to the NCB. The supervisory capacity of the MoAC should be enhanced in collaboration with the BoT and MoF to adopt recommended macroprudential measures to cooperatives.

G. AML/CFT

30. The AML/CFT shortcomings identified by the Asia Pacific Group in the 2017 mutual evaluation report are being addressed, but further efforts are needed to enhance the effectiveness of Thailand's AML/CFT regime. It is key to require that: (i) lawyers are covered under the AML/CFT framework; (ii) beneficial owners are verified without the need to determine the presence of money laundering/terrorist financing (ML/TF) risks; (iii) the source of wealth of politically exposed persons (PEPs) is identified; and (iv) financial institutions report suspicions of ML/TF on transactions between government entities. The capacity of the Anti-Money Laundering Office (AMLO) to conduct AML/CFT supervision, especially in the financial sector, should continue to be enhanced and directed at the risks. Sanctions for AML/CFT violations need to be dissuasive and proportionate. TF and proliferation financing investigations should be pursued.

CRISIS MANAGEMENT AND RESOLUTION

31. The crisis management framework has 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. However, the law has room for improvement—for instance regarding the 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.

32. EWIs should be developed further, building on the existing framework. The BoT should develop additional EWIs for individual banks linked to more comprehensive triggers for PPA, PCA, and banks' recovery plans. The existing triggers for PPA and PCA are based on the BoT's supervisory ratings and occur at relatively advanced stages of deterioration. The PPA and PCA frameworks should be revised to set the triggers at earlier stages of bank stress.[11] Contingency plans should be developed and tested regularly by the BoT. D-SIBs have developed recovery plans and other locally incorporated banks are required to develop those plans by June 2020. The BoT could usefully issue further guidance following the review of the plans.

33. The bank resolution framework should be improved. The responsibility for resolution decision-making should be moved from the FIPC to a body within the BoT (without external members) to help ensure the BoT's operational independence, facilitate prompt decision-making, 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. If the BoT provides funding to the FIDF, it should do so only under a formal indemnity from the government.

34. The BoT has taken steps to develop bank resolution capacity. Further progress is needed to establish comprehensive bank resolution guidance within the BoT and across other agencies. The authorities need to develop policy frameworks to undertake bank resolvability assessments and prepare resolution plans for at least the D-SIBs. The BoT should work with the home authorities of foreign banks in Thailand to strengthen cross-border cooperation arrangements for bank recovery and resolution.

35. 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

---

[11] A new set of triggers for PPA and PCA was adopted in the second quarter of 2019 following the FSAP recommendations.

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 to ELA only when there is a high possibility that 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.

36. 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). A formalized funding line should be established with the MoF or the BoT (on a government-indemnified basis). A cost-benefit analysis could be undertaken over the medium-term on the merger of the DPA and FIDF, given the parallels in their respective functions.

37. The early intervention and resolution frameworks for SFIs should be 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 established resolution regime for SFIs. The resolution framework of SFIs should be formalized, along with the development of a funding arrangement for ELA and bringing retail deposit-taking SFIs within the deposit insurance scheme. Resolution plans should be established.

DEVELOPMENTAL CHALLENGES

A. Funded Pension Scheme

38. The private, funded pension system is inadequate to meet the needs of an aging population, and incentives lead to low participation and suboptimal investment allocations. 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, there is a low participation in the collective, private PVDs. AMCs and fund committees have limited incentives to pursue optimal investment strategies, leading to overly conservative investments and 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. Thus, it is important to 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, and limit lump-sum payouts.

B. FinTech

39. An active FinTech ecosystem is 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 mostly in a proliferation of new payments companies, including e-money wallet and card program operators, and instruments, such as PromptPay QR payments. While FinTech does not present a financial stability risk at this time, robust monitoring is needed. An overall regulatory strategy should be articulated, as use of digital financial services can rapidly change the risk profile of a product or customer segment. Supervisory frameworks and capacity need to be updated and strengthened as innovation enter the market to actively monitor risks and assess the potential need to shift supervisory resources. Further enhancement is recommended in several areas, including ID infrastructure, competition, data gathering, sandbox operations, product approval, and supervision of innovations (Appendix IV).

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 Matrix[1]

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 Baht)

	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: The BoT, SEC of Thailand, and IMF staff calculations.

Appendix I. Implementation of 2008 FSAP Recommendations

The IMF Board considered the previous FSAP for Thailand in 2008. 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.		

Appendix II. Banking Sector Stress Testing Matrix (STeM)

Banking Sector: Solvency Risk			
Domain		**Assumptions**	
		Top-Down by Authorities	**Top-down by FSAP Team**
1. Institutional Perimeter	Institutions included	• 8 banks (5 D-SIBs and 3 IRB banks) and 3 specialized financial institutions.	• 8 banks (5 D-SIBs and 3 IRB banks) and 3 specialized financial institutions (using a similar approach).
	Market share	• Banks representing 75 percent of banking sector assets.	• Banks representing 75 percent of banking sector assets *and* SFIs representing 95 percent of SFI sector. Combined accounting for 80 percent of bank+SFI sector.
	Data and baseline date	• Supervisory reports at June 2018. • Data on a 'solo consolidated' (banking group level). • PD/LGD/EAD data for IRB banks.	• Supervisory reports as of June 2018. • Data on a 'solo consolidated' (banking group level). • PD/LGD/EAD data for IRB banks.
2. Channels of Risk Propagation	Methodology	• In-home macro-ST framework (balance-sheet model).	• IMF Solvency Stress Test Workbox (balance-sheet model).
	Satellite models for macrofinancial linkages	• In-home satellite models for: o 'Group 1' variables, dependent on macro factors (effective lending and borrowing rates, effective rate on bonds, loans and liabilities' growth, equity holdings); relationships with macro factors estimated via VAR, OLS, dynamic panel regressions. o 'Group 2' variables, dependent on group 1 variables (bond holdings at market price, fees and commissions, non-interest expenses and non-interest-earning liabilities); relationships with macro factors estimated via OLS. o 'Group 3' variables, whose calibration is based on expert judgment (other non-interest income and net open position in FX).	• Seemingly unrelated regression of NPL inflow rates, by economic sector, on macro variables. • System-wide regression of credit growth as a function of domestic demand and unemployment (with a judgmental floor to prevent excessive deleveraging), growth of capital determined endogenously within the workbox, growth of liabilities obtained residually. • Pre-impairment income estimated piecewise: panel data estimation of banks' effective interest rates on loans, bonds, and deposits; loan and deposit growth based on system-wide forecasts; historical evidence for non-interest-income items, coupled with judgmental adjustments to factor in increasing competition on banking services.

Banking Sector: Solvency Risk			
Domain		Assumptions	
		Top-Down by Authorities	Top-down by FSAP Team
	Stress test horizon	• 3 years (2019–2021)	• 3 years (2019–2021)
3. Tail shocks	Scenario analysis	• Scenario-based tests on the entire portfolio. • One baseline and two adverse scenarios (one of which coincides with the adverse scenario undertaken by the FSAP team).	• Scenario-based test on the entire portfolio. • Variables in the scenarios include global variables (U.S., China, Japan and Euro area GDP, USD and JPY interest rates, and oil prices) and domestic macrofinancial variables (e.g., GDP, inflation, exchange rate, interest rates, unemployment rate, equity prices). • Baseline scenario based on the June 2018 WEO projections. • One Adverse Scenario simulated using IMF's Flexible System of Global Models for the external context and calibrated judgmentally with the country team for the domestic impact. • The Adverse Scenario is driven by a combination of external shocks amplified by domestic characteristics (see RAM). The major drivers of the Adverse Scenario are: o External shocks: weaker-than-expected growth in China and in advanced economies, coupled with sharp rise in risk premia leading to a reversal of capital flows and a depreciation of the Baht. o Domestic amplifiers: excessive risk taking by investors and highly indebted households. It is assumed that the central bank would privilege restoring growth—by cutting the policy rate—over defending the currency, given the high level of international reserves and current account surplus in the current situation and likely fall of imports under the adverse scenario.
			• Under the Adverse Scenario, the Thai economy experiences a U-shaped growth path, with annual GDP growth shocks of -5.6 percent, -2.4 percent, and +4.9 percent. This represents a cumulative two-year deviation of 15.6 percentage-points with respect to the baseline scenario, which is equivalent to a 2.1 standard deviation shock; compared with a GaR calibration, based on current financial conditions, the GDP decline in the

Banking Sector: Solvency Risk			
Domain		Assumptions	
		Top-Down by Authorities	Top-down by FSAP Team
			first year is close to the fifth percentile of GaR (-5.9 percent) for the first year; the growth rate over the second year is also close to the two years ahead GaR threshold at the tenth percentile (-2.45 percent). • This economic slowdown will be accompanied by unemployment rising to 3.0 percent, 3.5 percent, and 2.8 percent over the 3-year horizon. The cumulative decline of the stock price index is 40 percent over the three years, with a negative peak of -55 percent in the first year. • The Baht will depreciate by 12 percent in the first year and will still be 10 percent below the June 2018 level at the end of the horizon.
	Sensitivity analysis	• Sensitivity of listed companies' debt at risk to changes in sales (-10 to -50 percent) • Households' resilience to a drop in income (-20 percent).	• Sensitivity analysis of interest rate and sovereign/corporate spread risk in the banking book based on Basel methodology and Value-at-Risk approach; it is meant to complement the moderate policy rate assumption in the macro scenario. • Sensitivity tests on sovereign risk and corporate spread risk (historical simulation at 99 percent confidence level), stock market shocks, and concentration risk.
4. Risks and Buffers	Risks/factors assessed (How each element is derived, assumptions.)	• Credit losses: determined by the increase in NPLs, estimated via panel data regression with a range of macro factors as exogenous variables. • Market losses determined by changes in interest rates (including spreads) and exchange rate. • Interest income evolution based on projected assets and liabilities' growth and effective lending and borrowing rates. • Non-interest income forecast based on growth of net fee and commission and growth of other non-interest income; growth of non-interest expenses based	• Credit losses: determined by the increase in NPLs for non-IRB exposures and changes in PD/LGD for IRB exposures. • Funding costs and interest on loans and bonds estimated as a function of short-term interest rates. Interest on loans and bonds also incorporate a spread, which reflects the increased credit risk in the economy. • Income forecast based on evolution of prices (interest rates), quantities (growth of assets and liabilities), and impairments (for credit risk). • Market risk: impact of financial variables' evolution on fixed income holdings of sovereign/corporate bonds, FX and equity positions.

Banking Sector: Solvency Risk			
Domain		**Assumptions**	
		Top-Down by Authorities	**Top-down by FSAP Team**
		on model (fees and commissions) and expert judgment (other expenses).	
	Behavioral adjustments	• Growth rate of loans and interest-bearing liabilities (deposits and other borrowings) estimated via VAR with macro factors. • Growth of equity holdings assumed to be either zero (for banks showing no significant variation in the size of holdings across time) or via OLS with the return on stock index as explanatory variable (other banks). • Share of bond holdings (over total assets) estimated as an inverse relationship with the loans/assets share. • Non-interest-bearing liabilities modeled as a function of total liabilities. • Net open position in FX (NOP) projected as historical long-term average of year-on-year NOP. • Dividend payout based on historical experience.	• Credit growth for the whole banking system estimated as a function of domestic demand and unemployment; portfolio allocation constant over the horizon. • Dividend payout judgmental, based on historical experience, with limits on distribution in case of breach of capital buffers.
5. Regulatory and Market-Based Standards and Parameters	Calibration of risk parameters	• PDs and LGDs: point in time for credit losses. RWA estimated via regression models.	• PDs and LGDs: point in time for both credit losses and stressed RWA calculations.
	Regulatory/ Accounting and Market-Based Standards	• Hurdle rates: capital (CET1, T1, CAR). • RWAs for credit risk are modeled at aggregate level, separately for performing and NPLs: via a regression of credit risk weights on macro factors; via a regression of credit risk weights over specific provision over NPL and the share of retail NPL over total NPLs, respectively.	• Hurdle rates: capital (CET1, T1, CAR) requirements (inclusive of Capital Conservation Buffer) and leverage ratio requirements as per local regulation (largely implementing Basel III); D-SIB capital surcharge included for domestic systemically important banks. • RWAs evolving according to assumed credit growth, net of increase in provisions; the latter is modeled via changes in PD/LGD for IRB exposures and the increase in NPLs for non-IRB exposures.

Banking Sector: Solvency Risk			
Domain		**Assumptions**	
		Top-Down by Authorities	**Top-down by FSAP Team**
6. Reporting Format for Results	Output presentation	• Macroeconomic scenarios for the macro-ST. • Results of the sensitivity tests on listed corporates and households.	• Capital ratios pre and post-shock and capital shortfall, by bank (anonymized) and system wide. • Distribution of capital ratios: minimum, average, maximum.

Banking Sector: Liquidity Risk			
Domain		**Assumptions**	
		Top-Down by Authorities	**Top-down by FSAP Team**
1. Institutional Perimeter	Institutions included	• 5 D-SIBs and 3 IRB banks for the LCR and cash-flow analysis.	• 5 D-SIBs and 3 IRB banks for the LCR and cash-flow analysis. Simplified liquidity stress test for 3 largest SFIs.
	Market share	• 75 percent banking sector assets.	• 75 percent of banking sector assets and 95 percent of SFI sector assets. Combined accounting for 80 percent of bank+SFI sector.
	Data and baseline date	• June 2018 LCR analysis and liquidity gap analysis. • Supervisory data.	• June 2018 for LCR and cashflow analysis. • Supervisory data.
	Scope of consolidation	• Consolidated basis.	• Consolidated basis.
2. Channels of Risk Propagation	Methodology	• Basel III-LCR. • LCR scenario with variants (baseline and severe) based on the RAM.	• Basel III-LCR and NFSR. • LCR and cash-flow test scenario with variants (severe, retail, wholesale funding, and mutual funds). • Cash-flow based liquidity stress testing using maturity buckets by banks.
3. Risks and Buffers	Risks	• Funding liquidity shock (short-term liquidity outflows). Market liquidity shock (asset price shocks and fire-sales).	• Funding liquidity shock (short-term liquidity outflows). • Market liquidity shock (asset price shocks and fire-sales).
	Buffers	• Counterbalancing capacity Central bank facilities HQLA-equivalent assets (for cash flow analysis only).	• Counterbalancing capacity. • Central bank facilities.
4. Tail shocks	Size of the shock	• Run-off rates calculated following historical data, BoT expert judgement, as well as internal forecasts derived from RAM.	• Run-off rates calculated following historical events, IMF expert judgement, Thai authorities and LCR rates. • Bank run and dry up of wholesale funding markets, taking into account haircuts to liquid assets.

Banking Sector: Liquidity Risk			
Domain		**Assumptions**	
		Top-Down by Authorities	**Top-down by FSAP Team**
		• Bank run and dry up of wholesale funding markets, taking into account haircuts to liquid assets.	
5. Regulatory standards and Parameters		• Regulatory: haircuts and run-off rates based on regulatory parameters. For LCR, see BCBS (2013), The Liquidity Coverage ratio and Liquidity Risk Monitoring Tools Basel, January 2013. Stressed: RAM severe scenario (one-month horizon for LCR Severe scenario). Inflow rates derived from projected NPL of solvency stress test. Haircuts are based on historical data of bond price movement as well as haircuts applied by BoT under the ELA framework. Run off rates are calibrated based on the percentile of the distribution of monthly changes in deposits where the percentile chosen mimics the weighted average of outflows during the 1997 Asian Crisis (where FSAP RAM was based upon in terms of degree of severity).	• Regulatory: haircuts and run-off rates based on regulatory parameters. For LCR, see BCBS (2013), The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools Basel, January 2013. • Stressed: more severe haircuts under a political turmoil scenario and larger run-off rates to reflect more severe episodes of market and funding based on historical events.
	Regulatory standards	• For the LCR phase in, the hurdle is set to 80 percent.	• For the LCR , the hurdle is set to 100 percent. • For the cash-flow analysis, the hurdle rate is to have a non-negative cash balance.
6. Reporting Format for Results	Output presentation	• Number of banks that fail to meet the hurdle and their assets share in the banking sector. • Bank-level survival period in days, number of banks that still can meet their obligations.	• Number of banks that fail to meet the hurdle and their assets share in the banking sector. • Bank-level survival period in days, number of banks that still can meet their obligations.

Banking Sector: Contagion Risk			
Domain		Assumptions	
		Top-Down by Authorities	Top-down by FSAP Team
1. Institutional Perimeter	Institutions included	• All commercial banks (for analyses based on balance-sheet data) or listed banks, listed insurance companies, listed finance, and securities companies (for analyses based on market data).	• Banks. • Insurance companies.
	Market share	• 36 commercial banks and 27 sectors listed in SET.	• 91 percent of total banking assets. • 65 percent of banking and insurance assets.
	Data and baseline date	• June 2018. • Supervisory and market data.	• June 2018. • Supervisory and market data.
2. Channels of Risk Propagation	Methodology	• For its systemic risk analysis, the BoT relies on five models and indicators: (i) a bank network analysis model (Espinosa-Vega and Solé, 2010); (ii) an interbank market network model (based on Bonacich's Eigenvector Centrality measure); (iii) payment system network model (also based on Bonacich's Eigenvector Centrality measure); (iv) CoVaR measures; and (v) Variance Decomposition results from Diebold-Yilmaz methodology. • A new methodology is going to be introduced (based on Civilize et al., 2018, forthcoming) to profile and stress test the financial system via the Disaggregated Balance Sheet Network, which is a consistent system of balance sheets with disaggregated balance sheet profiles of non-financial corporations, banks, and mutual funds.	• Interbank and cross border network model by Espinosa-Vega and Solé (2010). • Diebold-Yilmaz variance decomposition connectedness methodology. • A Comprehensive Mutli-sector Tool for Analysis of Systemic Risk and Interconnectedness (SyRIN approach).

Banking Sector: Contagion Risk			
Domain		**Assumptions**	
		Top-Down by Authorities	**Top-down by FSAP Team**
3. Tail shocks	Size of the shock	• Balance-sheet data: analysis of the impact of the default of single institutions or group of institutions on the whole network; ranking of institutions according to their degree of contagion (outward spillover) or vulnerability (inward spillover). • Market-based data: conditional probability of distress for single institutions or the whole network in case of one or more institutions defaulting; ranking of institutions according to their degree of "from" connectedness (inward spillover), "to" connectedness (outward spillover), and "net" connectedness (difference between "to" and "from" connectedness measures).	• Balance-sheet data: analysis of the impact of the default of single institutions or group of institutions on the whole network; ranking of institutions according to their degree of contagion (outward spillover) or vulnerability (inward spillover). • Market-based data: conditional probability of distress for single institutions or the whole network in case of one or more institutions defaulting; ranking of institutions according to their degree of "from" connectedness (inward spillover), "to" connectedness (outward spillover), and "net" connectedness (difference between "to" and "from" connectedness measures). • SyRIN: Various metrics, including tail risk, cross-entity interconnectedness and the contribution to systemic risk by different entities and sectors.
4. Reporting Format for Results	Output presentation	• Number of undercapitalized, failed or illiquid institutions, and their shares of assets in the system. • Evolution and direction of spillovers within the network.	• Number of undercapitalized, failed or illiquid institutions, and their shares of assets in the system. • Evolution and direction of spillovers within the network.

Mutual Funds: Liquidity Risk		
Domain		**Assumptions**
		Top-down by FSAP Team
1. Institutional Perimeter	Institutions Included	• 32 daily FI and 11 MMFs.
	Market Share	• 31 percent of total AUM.
	Date and the baseline date	• September 2018.
2. Channels of Risk Propagation	Methodology	• Liquidity measures by (i) cash and short-term debt securities < 1year; and (ii) cash and high-quality liquid assets.
3. Risks and Buffers	Risks	• Liquidity outflows and inability to liquidate assets to cope with redemptions.
	Buffers	• Liquidity buffers.
4. Tail shocks	Size of the shocks	• Monthly redemption shock equal to 1th percentile of historical net flows.
5. Regulatory and Market-Based Standards and Parameters	Regulatory Standards	• None.
6. Reporting Format for Results	Output presentation	• Redemption coverage ratio by investment fund and liquidity shortfall. • Number of funds and share of funds that cannot meet their obligations.

Appendix III. Thrift and Credit Cooperatives and Credit Unions

1. **Financial cooperatives, such as TCCs and CUs, are important providers of financial services in Thailand, serving over 4 million members and accounting for 16 percent of household debt.** The positive financial performance of TCCs could be masking over-indebtedness of many of their members and risks to other financial institutions that lend to the same customers. The low level of their NPL indicator may also be distorted by the priority that claims of TCCs have over those of other lenders and lending practices that allow for a systematic rollover of debt. The performance of CUs has been mixed, with its loan portfolio exhibiting high levels of past due loans: 58 percent in 2016 and of 26 percent in 2017, which may not be adequately provisioned for. 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. Cooperatives generally do not share information with the NCB. As a result, their borrowers' overall debts are not taken into account by other lenders. The TCC and CU sectors are organized into federations, but these play a limited role.

2. **A regulatory and supervisory regime for financial cooperatives should be defined and its implementation initiated that is proportionately equivalent to that applied to the banking system.** The Cooperative Promotion Department (CPD) of the MoAC is responsible for promoting cooperatives and for regulating and supervising them. In the medium term, MoAC should do its utmost to separate its regulation and supervision functions from its promotion function and ensure the independence of the former. Ongoing collaboration between the BoT and the MoAC should be institutionalized, and the regulatory and technological capacities of the CPD and the Cooperative Audit Department (CAD) of the MoAC as well as CPD's enforcement powers should be strengthened.

3. **Given the risks and social implications of high indebtedness of cooperative members, CPD should work closely with BoT and the cooperative federations to determine the actual level of debts.** The monitoring of loan portfolio should be strengthened, and the authorities should consider requiring cooperatives to report their members' debts and repayments to the NCB. 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 information technology, management, and internal control, provided that they are properly regulated and supervised according to their roles and functions.

4. **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 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.

5. Given the weaknesses in the administrative and reporting capacity of TCCs and CUs, the poor quality of information and mixed financial performance, it is not advisable that the sector be covered by deposit insurance at this stage. In addition, ELA of the BoT should not be extended to the sector for the foreseeable future. Instead, the strategy should focus on: (i) strengthening the prudential soundness of the entities in the sector (broadly aligned to the prudential requirements applicable to small banks in the case of financial cooperatives of similar size) while enhancing the supervisory capacity of MoAC with support from BoT, and (ii) establishing liquidity and solvency funds (similar to the IPS system in Europe) for the two main types of cooperatives that could help implement recovery plans / facilitate the exit of troubled entities through mergers and acquisitions. In addition, in the medium-term, the resolution law applicable to the sector should be amended to broadly align to the Key Attributes in a proportionate manner. Coverage by deposit insurance and the access to ELA facilities could then follow at a later stage, once all of these measures have been implemented and the deposit-taking entities meet acceptable prudential standards.

Appendix IV. FinTech

1. **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. 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.

2. **FinTech does not at this time present a financial stability risk, but robust monitoring is needed.** An overall regulatory strategy should be articulated, as use of digital financial services can rapidly change the risk profile of a product or customer segment. Supervisory frameworks and capacity need to be updated and strengthened as innovation enter the market to actively monitor risks and assess the potential need to shift supervisory resources. Further enhancement is recommended in the following areas:

- **ID infrastructure**: The building blocks for e-KYC and fully digital onboarding exist. At the time of the mission there was no public authoritative source that can be accessed digitally, on a level playing field, by all qualified private sector participants. There are some recent initiatives in this area, including 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 the 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 products with a focus on joint innovation, for example, the industry standard QR code and e-KYC projects that involve joint connectivity testing. 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 the 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 the 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 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 the 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, BigTech companies, and others beyond the traditional financial services regulatory perimeter.

- **Supervision**: The oversight processes of the BoT, OIC, and SEC may need to be updated, consistent with each regulator'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 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.

Annex I. Report on the Observance of Standard and Codes: Basel Core Principles for Effective Banking Supervision (BCP)—Summary Assessment[1]

A. Introduction

1. **This assessment of the implementation of the BCP by the BoT is part of the FSAP undertaken by the IMF and the World Bank.** The assessment was performed October 25 through November 16, 2018 and is based on the regulatory and supervisory framework in place at the time of this visit.

2. **Compliance was measured against standards issued by the Basel Committee on Banking Supervision (BCBS) in 2012.[2]** Since the previous assessment, conducted in 2008, the BCP standards have been revised and reflect the international consensus for minimum standards based on global experience. The view is that supervision should be based on a process involving well-defined requirements, supervisory onsite and offsite determination of compliance with requirements and risk assessments, and a strong program of enforcement and corrective action and sanctions. The 2012 revision placed increased emphasis on corporate governance, on supervisors conducting reviews to determine compliance with regulatory requirements, and on thoroughly understanding the risk profile of banks and the banking system.

3. **The assessors appreciated the high quality of cooperation received from the authorities.** The mission extends its thanks to the staff of the BoT for its excellent cooperation and hospitality. The BoT provided a comprehensive and detailed self-assessment and granted access to supervisory manuals, onsite inspection reports, monitoring reports and risk assessments.

B. Institutional and Market Structure—Overview

4. **Thailand has a sizeable and diversified financial sector.** The financial system assets amount to 259 percent of GDP (June 2018). Assets of Thailand's 30 commercial banks (including 15 foreign branches or subsidiaries) account for 46 percent of financial sector assets, while 8 state-owned SFIs account for 15.6 percent. The three largest commercial banks account for 44 percent of banking sector assets. In 2017, the banking assets amounted to 125 percent of GDP, compared to 105 percent in 2007. Other segments of the financial sector have grown significantly. The market capitalization of the SET in 2017 was 96.6 percent of GDP, up from 67 percent of GDP in 2005 (and from 37 percent of GDP in 2008 at the depth of the international financial crisis). Likewise, insurance sector assets have grown from 10 percent of GDP in 2006 to over 25 percent of GDP in

[1] The assessment team comprised Jose Tuya (IMF external expert) and Kathia D' Hulster (World Bank staff).

[2] Basel Committee on Banking Supervision: *Basel Core Principles for Effective Banking Supervision*, May 2012: http://www.bis.org/publ/bcbs230.pdf.

2017 now constituting 9 percent of financial sector assets. Savings and credit cooperatives and credit unions represent about 6.5 percent of the financial sector assets.

5. **The commercial banking sector appears to be sound and stable with a diversified lending profile and a steady source of funding.** As of end-2017, the loan portfolio of the commercial banking sector was diversified and distributed among the following sectors: financial and insurance (23 percent); mortgages, real estate, and construction (20 percent); manufacturing (15 percent); consumer finance (14 percent); wholesale and retail trade (13 percent); and others (15 percent). To support banking sector activities, commercial banks have been traditionally funded by customer deposits, which represented more than 70 percent of total funding in December 2017. At the same time, banks have been consistently well capitalized, with an aggregate capital adequacy ratio above 15 percent over the last decade and reaching a peak of 18.5 percent in Q3 2017, well above the regulatory requirement of 8.5 percent, and with no banks below 15.5 percent. Commercial banks' NPLs are also low at 3 percent (down from a peak of 8 percent in 2007) but have ticked up from 2.15 percent in 2014 primarily due to loans to the mining sector as well as wholesale and retail trade.

6. **SFIs, savings and credit cooperatives, and credit unions provide a significant amount of financial services to households but experience weaker governance and supervision than commercial banks.** SFIs provide some 25 percent of consumer loans (compared to 41 percent of consumer loans provided by commercial banks). The 8 SFIs were recently (2017) brought under the supervision of the BoT, but still do not face the same disclosure requirements or supervision regime as commercial banks. Their reported NPLs of 4.5 percent are higher than commercial banks. Likewise, their aggregate CAR of 12.5 percent is lower than commercial banks but still above the BoT regulatory requirement of 8.5 percent. There are 1,409 savings and credit cooperatives and 544 credit unions, which provide 16 percent of consumer loans. Risks are accumulating in this segment as the deposits and investment in securities continue to grow robustly due to search-for-yield behavior. Saving cooperatives invest the excess liquidity in long-term securities and long-term lending to other cooperatives that lack of liquidity. In addition, there is a maturity mismatch between the long-term assets and the short-term funding from borrowing from financial institutions and other savings and credit cooperatives. With the relatively small size and limited linkage to other institutions in financial system, the saving cooperatives currently do not pose significant financial stability risks. However, risks are accumulating in this segment as debt rollover is allowed, and these institutions are monitored but not prudentially supervised by the Ministry of Agriculture and Cooperatives.

C. Preconditions for Effective Banking Supervision

Soundness and Sustainability of Macroeconomic Policy

7. **Since the last FSAP in 2008, the BoT has continued to conduct a managed float exchange rate regime and inflation targeting policy.** Macroeconomic policies remain on the same regime and have been effective in preserving economic growth and maintaining price stability during periods of uncertainty. Thailand's sound macro policy coupled with strong fundamentals,

including a large build-up of international reserves and low foreign debt, shielded the economy from the global economic crisis in 2008–2009.

8. GDP growth in 2017 continued a positive trend, reaching 4.0 percent yoy in Q4. Headline inflation dropped below the target range in 2015–17, resulting from a decline in oil prices and falling core inflation, but is projected to rise along with stronger domestic demand and move toward lower bound of the target in H1/2018. Overall, financial conditions continue to be accommodative and conducive to economic growth. Financial stability remains sound but there remain pockets of risk, especially in search-for-yield behavior due to the prolonged low interest rate environment and low debt serviceability of households and SMEs, which are been closely monitored. Thailand's external position reflects a current account surplus and low foreign debt. International reserves stood at US$215 billion representing 51 percent of GDP as of Q1/2018, and low foreign debt.

9. The fiscal stance remains expansionary to support economic recovery. The fiscal deficit is expected to widen to support the expansion of public investment. Public debt to GDP registered at 41.2 percent at the end of 2017, below the fiscal sustainability framework of 60 percent. The Fiscal Responsibility Act B.E. 2561 (2018) was issued in 2018 to enhance transparency in the government budget process.

Financial Stability Policy Framework

10. The BoT assumes the leading role in safeguarding financial stability. The BoT monitors systemic risk and cooperates with the relevant supervisory authorities, primarily the SEC, the OIC, and the FPO to ensure financial system stability with respect to financial institutions, financial markets, payments systems, and sustainability of macroeconomic policies.

11. There are several departments and committees within the BoT tasked with monitoring financial stability risks. In 2016, the BoT established the FSU to monitor and identify areas of financial risk build-up and cross-cutting issues, drawing on sectoral surveillance conducted by different departments within the BoT as well as cooperate with other supervisory authorities by exchanging information and jointly conducting risk monitoring and assessments. The FSU develops the tools and capacity for financial stability assessments, undertaking the design of macroeconomic scenarios for stress testing, and developing a macroprudential toolkit and framework in preparation for policy functions. The FSU also acts as secretariat for financial stability meetings and is the editor of the Financial Stability Report.

12. The FSU and line departments meet regularly to discuss and assess financial stability issues both formally and informally. The sub-committee of Financial Stability holds formal, quarterly meetings chaired by the BoT Governor, during which risk assessments are discussed. In preparation for the sub-committee meetings, the BoT internal Financial Stability Working Group (internal FSWG) meets to discuss issues regarding financial stability and risk assessments. Assistant governors from financial stability-related line departments participate in the internal FSWG meetings, where the meetings are chaired by assistant governors of the Monetary Policy Group and Financial Institutions Policy Group with the Financial Stability Unit director as a secretary.

13. The BoT, SEC, and OIC coordinate financial system surveillance through the FSWG. These authorities also participate in the Three-Regulator Steering Committee, which reports to both the Committee and the Joint Meeting of the Monetary Policy Committee (MPC) and the Financial Institutions Policy Committee (FIPC). The SEC and the OIC are also members of the FIPC. Risks to financial stability are discussed and key issues consolidated at FSWG meetings. Key issues are then escalated to the Joint Meeting of the MPC and the FIPC as well as the Three-Regulator Steering Committee.

Well Developed Public Infrastructure

14. Thailand has a civil legal system based on case law, where the court decides a case based on an interpretation of statutory provisions. Under the Constitution, the sovereign power belongs to the Thai people. The King as Head of State exercises such power through the Parliament, the Cabinet, and the Courts. The Constitution is the supreme law of the State to which all legislative sources are subject. Enactment of a law could be done by the power of the Legislative Branch (Parliament) or through the Executive Branch (Cabinet). Subordinated law can be issued in the form of a Royal Decree, promulgated by the Cabinet with the suggestion of the minister of the relevant ministry authorized under a specific act to set forth details under the guidelines of such act. Subordinated law can also be issued in the form of ministerial regulation by the minister who is authorized under a specific act to issue or change detailed regulations from time to time.

15. Courts in Thailand are classified into four categories: Constitutional, Administrative, Military, and the Courts of Justice. The Constitutional Court has powers and duties in adjudicating and ruling on constitutional cases. The Administrative Court tries and adjudicates administrative disputes between state organizations and the private sector, whereas the Military Court tries and adjudicates cases involving persons within its jurisdiction. The Courts of Justice try and adjudicate all cases including most of the business cases except those specified by the Constitution or other laws. The Courts of Justice are classified into three levels: Courts of First Instance (which comprise general courts, juvenile and family courts, and specialized courts), the Courts of Appeal (which consist of the Court of Appeal and nine Regional Courts) and the Supreme Court (which is the final court of appeal in all civil and criminal cases in the country).

16. The practice of law is in accordance with the Lawyer Act, the Judicial Service Act (the Judicial Service or the Court of Justice Act), and the Public Prosecution Organ and Public Prosecutor Act. Lawyers must obtain a license by passing an examination of the Law Society of Thailand and become its member. Judges and public prosecutors must pass the examination of the Institute of Legal Education of Thai Bar Association and the Legal Education of Thai Bar Association, respectively.

17. The Accounting Profession Act establishes the Federation of Accounting Professions (FAP) (October 2004) as a self-regulated entity aiming to promote and develop the

accounting profession. The FAP has the power and responsibility to formulate accounting and auditing standards; develop a code of ethics; ensure that accountants and auditors act in compliance with laws and regulations; issue, suspend, or revoke auditing licenses; and issue the regulation for Continuing Professional Development. Thai Accounting Standards (TAS) and Thai Financial Reporting Standards (TFRS) are in line with the International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS), except for the standards covering financial instruments (IAS 32, IAS 39, and IFRS 7). The Thai Standards of Auditing conform to the International Standards on Auditing (ISA). TASs and TFRSs are applied to all public companies, banks, insurance companies, securities companies, and mutual funds.

18. The BoT is empowered under the BoT Act to operate the payment systems and conduct activities to maintain payment systems stability. BAHTNET (BoT Automated High-Value Transfer Network) is the only large value payment system operated on real time gross settlement basis and is considered as a Systemically Important Payment System (SIPS). BAHTNET, owned and operated by BoT, provides inter-institution funds transfer service for financial institutions and provides final settlement to net clearing positions from retail payment systems such as cheque clearing (ICAS) and interbank retail funds transfer system (ITMX). Under the BoTA, the Payment Systems Committee (PSC) is established and empowered to formulate policies about the payment systems under supervision of the BoT and inter-bank clearing systems to ensure their efficiency and stability and to monitor the BoT's related activities. The PSC acts as both the oversight board of the payment systems and the FMI's board for BAHTNET. The PSC performs other oversight functions such as establishing supervisory policies and the oversight framework. As an FMI Board, the PSC oversees the operations and key performance of BAHTNET and approves the risk management framework for the BAHTNET's operations.

19. The National Credit Bureau (NCB) is the single private credit bureau in Thailand banks can join. The NCB is the result of the 2005 merger by the Thai Credit Bureau and Central Credit Information Services. The NCB is governed by the Credit Information Business Act B.E. 2545 (2002) and aims to gather loan data from financial institution members and in return offers reliable credit data of both consumers and corporates for financial institutions to analyze credit risk of the borrowers. As of June 2017, the NCB had 96 members including banks, nonbanks, leasing companies, and saving cooperatives. Currently, the NCB encourages more numbers of saving cooperatives and other financial institutions to join the membership as to improve data coverage. Since May 2017, the NCB has been offering NCB scores for both consumers and SMEs to members which could be incorporated into their internal credit scoring.

20. The legal framework specifies duties and responsibilities of, and grants authority to, supervisory agencies to oversee financial safety net mechanisms. The BoT, the SEC, and the OIC are responsible for supervising, issuing policies, and resolving entities under supervision in the financial institutions (commercial banks, finance companies, and credit foncier companies) sector, capital market, and insurance sector, respectively. The BoT performs the duty as "a lender of last resort" of financial institutions in accordance with BoTA; while the Deposit Protection Agency (DPA) is responsible for deposit protection.

21. The Deposit Protection Act B.E. 2551 (DPA Act) was passed in 2008, establishing the DPA supervised by the MOF. The DPA acts as a paybox-plus[3] and has three primary objectives as stated in the deposit protection law: (i) to provide protection for deposits in financial institutions; (ii) to enhance confidence and stability in the financial institution system; and (iii) to manage financial institutions subject to control under the FIBA and liquidate financial institutions whose licenses have been revoked. Membership under the DPA scheme is compulsory for all financial institutions, comprising commercial banks (both local and foreign), finance companies, and credit foncier companies; currently, there are 35-member institutions. The maximum annual premium rate that members remit to the Deposit Protection Fund cannot exceed 1 percent of the average value of eligible deposits at the insured institution; at present, the annual premium rate is 0.01 percent. As of the end of 2017, the size of the Deposit Protection Fund was THB 120.03 billion. This represents around 3 percent of insured deposits.

22. The DPA protects Baht deposits and accrued interest of both individuals and legal persons. The types of accounts under DPA protection include current accounts, savings accounts, fixed deposit accounts, certificates of deposit, deposit receipts, and other deposit accounts under different names with obligations to pay back depositors. However, Non-Resident Baht Accounts, derivative-embedded deposits, and interbank deposits are excluded from the deposit protection scheme.

23. Several measures have been taken by the SEC in collaboration with the SET and the Thai Institute of Directors to enhance corporate governance standards. Examples of these measures are the requirement that companies obtain approval to issue and offer for sale securities to protect investors from unfair practices and ensure the availability of adequate information for making investment decision in accordance with international standards and the Investment Governance Code for institutional investors.

24. For financial institutions and financial business groups, the BoT focuses on enhancing corporate governance and management systems. In May 2018, the BoT revised the regulations on (i) fit and proper criteria of the director, manager, person with power of management, and advisor of the financial institution, (ii) the directors' responsibilities in financial institution management, (iii) the establishment of the board of directors and subcommittees including their composition, qualifications, and responsibilities, and (iv) disclosure of information. Moreover, the BoT has recently revised the Handbook for Directors of Financial Institutions to be in line with the changing environment by focusing on the roles and responsibilities of the board for each aspect of governance.

D. Main Findings

Responsibilities, Objectives, Powers, Independence, and Cooperation (CPs 1–3, and 13)

25. The BoT has clear objectives and the necessary legal powers to conduct ongoing supervision, address compliance with laws, and undertake timely corrective actions to address

[3] DPA's mandate also covers liquidation.

safety and soundness concerns for banks. In the areas where the BoT recommends and the MOF approves (licensing, revoking a license, and approving non-Thai shareholders and directors), there have been no instances where the MOF has not followed the BoT's recommendations.

26. The current mix of roles in SFI supervision and regulation between the MOF and the BoT increases BoT's reputational risk as a result of potential political interference that could spill over to its role as the regulator and supervisor of banks. There are eight SFIs in Thailand, each with a different mandate assigned by its founding law. Four SFIs are deposit-taking institutions and comply with the definition of a commercial bank in accordance with FIBA. The SFIs are regulated and supervised by the BoT with extensive involvement of the State Enterprise Policy Office (SEPO) as owner and the FPO as policy maker. The MoF has delegated large parts of supervision to the BoT but not the corresponding powers to take corrective action against problems in SFIs or to set legally binding SFI regulations without ministerial approval. This incomplete transfer of responsibilities exposes the BoT to reputational risk that could affect its role as regulator and a supervisor of banks.

27. FIBA provides a framework for the BoT to set minimum enforceable prudential standards for banks and banking groups as well as guidance to clarify good practices. The BoT issues banking notifications that are subordinate legislation of FIBA and considered as law. The BoT guidance is not considered as law since the BoT issues it without referring to a statutory provision. Guidance is usually released to apply industry best practice in areas such as risk management. Thai banks have not challenged the non-binding nature of the BoT's guidance and have complied with all orders and recommendations imposed by the BoT examiners based on this guidance. To better explain its policy positions and further strengthen its standing in the international supervisory community, the BoT should publish more comprehensive response papers to public consultations on important notifications instead of, or in addition to, attaching brief questions and answers to the notifications.

28. The BoT is well resourced, has transparent processes for the appointment and removal of the governor and members of its governing body, and has adequate legal protection for its staff. The process for the appointment and removal of the governor and the members of the FIPC is transparent, and the BoT has adequate resources for the conduct of effective supervision and appropriate training plans. Discussions with supervisors and banks confirmed that the BoT staff have credibility based on their professionalism and integrity. The BoT regularly benchmarks its salary scales to the market and has sufficient funding to cover cross-border inspections and training. The legal framework for banking supervision includes adequate legal protection for the supervisors.

29. Rotations of frontline supervisory staff appear to occur as a matter of practice. These should be formalized in policy and enforced within the supervision groups to ensure adequate rotation in supervisory staff. Relationship managers and their teams should be rotated to other (supervisory) roles after 3–5 years of supervising the same institution or banking group. While there should be room for flexibility in the rotation policy, a maximum period that any supervisor can be assigned to the same institution should also be established.

30. While the assessors did not observe evidence of a lack of independence, there are a few factors that have the potential to interfere with the BoT's independence. First, the permanent presence of the Director General of the FPO on the FIPC is not in accordance with international good practice. Second, the presence of the Secretary-General of the Insurance Commission and the Secretary-General of the Securities and Exchange on the FIPC, and their participation in decisions also compromises operational independence and dilutes accountability. Third, Section 42 of FIBA requires that when a financial institution faces a liquidity problem that may seriously endanger the stability of the economic and monetary system, the BoT, after approval of the FIPC and the Cabinet, may approve the granting of a loan or financial assistance to that financial institution. Hence, any ELA to a D-SIB is likely to fall under Section 42, expose the BoT to political interference, and delay the process. Fourth, the BoT needs to notify the MOF in case it applies the PPA framework and the PCA. Finally, even though the BoT has continued to discharge its duties for many years despite negative net worth, its weak financial position further exacerbates the risk to the BoT's independence and vulnerability to political interference.

31. Parts of the SFI supervision and regulation were recently transferred to the BoT, and SFIs are supervised by a separate department that reports to the Assistant Governor of the Supervision Group, same as the commercial bank supervision departments. In other words, SFI and commercial bank regulatory and supervisory actions are decided by the same staff, following the same procedures. Considering their significantly differing degrees of independence, it is not unlikely that contamination seeps through and that matters arising in the SFI area spill over to the commercial bank decision-making process, particularly because some commercial banks also have state ownership.

32. Formal and informal arrangements for domestic and international cooperation have been established and function well in practice. Domestic coordination at senior levels occurs through cross directorship of the FIPC and the Three-Regulators Steering Committee. At the working level, various working groups have been established and hold regular meetings, including domestic supervisory colleges. These arrangements are formalized in MOUs and allow the exchange of confidential information, based on the FIBA provisions. The foreign exposures of Thai banks are small; nevertheless, the BoT has concluded MOUs with most host supervisors and has provided the assessors with evidence of effective cooperation.

Methods of Ongoing Supervision (CPs 8–10, and 12)

33. The supervisory process is well established. The BoT bases its supervisory scope on a risk-based analysis of the banks. Banks are supervised by a team of examiners under a relationship manager (RM); the team is responsible for onsite examinations and offsite analysis. The process is flexible, enabling the BoT to promptly respond to a changing environment by: (i) decreasing reliance on an annual onsite examination or expanding offsite analysis and communications with banks, resulting in ongoing monitoring; (ii) expanding the use of early warning indicators; and (iii) incorporating the possible impact of macroeconomic trends into the supervisory scope.

34. Effective follow-up ensures that recommendations from the BoT are implemented. Recommendations in examination reports are discussed with senior bank management and a copy of the report is sent to the bank's board. Date for responses are established and examiners follow-up as part of their offsite ongoing monitoring. Numerous examples of examination reports follow-up were shared with assessors.

35. A bank's risk profile is reflected in a composite rating. Banks are analyzed and, based on their risk profiles, governance and operating policies, are assigned forward-looking ratings covering the significant activities that may have an impact on financial condition and performance. At the completion of the analysis, the bank is also assigned a composite rating that aids supervisors in developing their supervision plans. The BoT can further leverage its risk analysis by increased targeting of activities to areas of higher risk and more narrowly scoping annual onsite examinations, as appropriate.

36. The BoT's consolidated supervision powers have been significantly enhanced. FIBA was amended to include consolidated supervision over banking groups and financial business groups (FBGs). FIBA grants the BoT authority to approve the establishment of FBGs, require changes in their structure if it impedes proper supervision, and to supervise the bank, its parent, subsidiaries, and affiliates as if they were the same juristic person. The BoT maintains detailed organizational charts of all FBGs and their ultimate beneficial owners.

37. The BoT 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 in determining the bank's composite rating. The BoT onsite examination has focused both on the quantitative (e.g., capital, liquidity) as well as qualitative aspects (e.g., adequacy of board policies, quality of risk management). Moreover, to ensure that the Bank complies with the BoT notifications, transaction testing is performed to assess bank operations and processes. Inspection reports are moving away from past audit and compliance approaches. Issuance of best practices guidance and defining supervisory expectations would encourage the migration from auditing to risk analysis and facilitate corrective action based on qualitative factors. An additional pillar is ensuring banks' internal controls and audit adequately monitor and control transaction risk.

Corrective and Sanctioning Powers of Supervisors (CP11)

38. The BoT has available a broad range of possible measures to timely address safety and soundness issues, but the BoT internal procedures could be enhanced. As currently described under the Guideline, PPA measures are applied to banks classified as "weak" and, which "would cause damage to public interest." Chapter 5 of FIBA defines and provides the BoT authority to apply the measures addressed in the BoT Guideline but does not link their application to the bank classification. Chapter 5 very broadly defines actions causing public damage and requiring notification to the MOF. The BoT is of the opinion that Chapter 5 measures may be applied and not require the MOF notification. Amending the Guideline to clarify that Chapter 5 measures may be applied independent of a specific bank classification and clarifying the need to notify the MOF would increase effectiveness and clarity for supervisors.

39. Aligning FIBA, the Guideline and the BoT practice would expedite application of PPA. It is a good practice to have internal guidelines that put in practice legal and regulatory requirements. Banks promptly respond to the BoT inspection report recommendations (orders) and the BoT has not had to apply stronger measures. However, situations change, and now is a good opportunity to amend the Guideline accordingly to clarify the BoT authority to implement PPA and the circumstances. The Guideline has integrated the financial triggers according to the early warning system aligning it with PPA/PCA. Additionally, the BoT is enhancing qualitative elements such as the quality of risk management into triggers.

Corporate Governance (CP14)

40. The BoT's corpus of regulations, guidelines, and the corporate governance supervisory manual are comprehensive, enforceable, and in line with international good practice. The BoT has been updating its governance regulation to keep up with the development of international good practices. At the assessment date, the BoT notification regulation with regards to corporate governance of financial institutions have already been enhanced at solo basis by the newly issued regulation which has been in came to effect since June 2018. For FBG, the enhancement to the governance requirement will be in effect from May 2019 onwards. In the meantime, the governance of FBG follows the existing BoT notification no. FPG 8/2560 on supervision of corporate governance of financial business group which covers almost all aspects of effective governance. The enhancement to the corporate governance regulation aims to strengthen management systems, transparency, and market discipline by reinforcing the BoT's expectation of (i) responsibility of the parent company board on oversight of subsidiaries, and (ii) composition of the parent company's board and subcommittees.

41. Similarly, some requirements of the corporate governance regulation are still subject to transitional and grandfathering measures and are not yet enforced at the assessment date. For example, independent directors that have been in service for more than nine years will be grandfathered till May 2022. The requirement for a risk oversight committee also comes into effect on May 1, 2019.

Prudential Requirements, Regulatory Framework, Accounting, and Disclosure (CPs 15–29)

42. The BoT determines that banks have comprehensive risk management processes, including effective board and senior management oversight, to identify, measure, evaluate, monitor, report, and control all material risks on a timely basis. The BoT has comprehensive and detailed requirements for various risk categories (credit risk, market risk, operational risk, liquidity risk, and IT risk), which include conservative assumptions and are linked to capital adequacy requirements. The BoT also requires the development of, and reviews, banks' contingency plans. The risk management supervision process is commensurate with the risk profile and the systemic importance of banks. The BoT supervisors evaluate the effectiveness of risk management policies, processes, and practices on an ongoing basis and instruct financial institutions to make corrections where appropriate. As a risk-based supervisor, the BoT should better articulate its supervisory expectations by publishing best-practice guides, after thematic reviews or when a diverging range of practices is observed, for example on risk management and governance. This will also contribute to the international standing of the BoT as a world class prudential supervisor.

43. The BoT sets conservative capital adequacy requirements, the components of capital absorb losses and the capital requirements are in line with Basel III. The average CET1 ratio for D-SIBs sits around 15 percent and 16 percent for non-D-SIBs. Foreign bank branches are required to hold capital like domestic banks. Three banks can use internal models for credit risk, and two foreign bank branches have been accredited to use the market risk internal model approach. The BoT has a well-staffed specialized team that accredits and oversees modelling by banks. Even though the BoT has the power to set individual capital ratios and will require a 1 percent add-on for D-SIBs by 2020, it has not yet tailored capital ratios to the risk profile of individual banks. The BoT should build on its risk-based supervisory framework to develop a methodology that facilitates individual capital ratios, at least for its largest and most complex banks.

44. Parts of the credit risk and asset classification requirements fall short of international good practice, but the impact is limited due to strong supervision practices and high provisions. The BoT's definition of restructuring and rescheduling is not in line with the definition of forbearance in international good practice; it should include financial difficulty of the borrower, and it should not be conditioned on the bank making a loss. Also, the probation period for restructured exposures to be upgraded is currently three months, while international good practice requires it to be a minimum of one year. The BoT regulation also allows an upgrade of the exposure to take place when restructuring or rescheduling is granted. Moreover, there is also no limit on the number of times banks can reschedule or restructure (evergreening). Furthermore, the regulation should be more detailed on the level of application of the asset classification (borrower or transaction level). Finally, banks should be required to include a list of indicators to determine the "unlikeliness to pay" in their policies. The BoT supervisors are well-aware of these gaps in the regulation and perform in-depth procedures to address these weaknesses. Current provisioning coverage levels are standing at 140 percent, high compared to international peers.

45. The BoT has issued a revised regulation to be implemented after TFRS 9 becomes effective in 2020, which should address most of the shortcomings identified above. That is, the assets will be classified into 3 classes: performing, under-performing, and nonperforming. For assets classified as performing, provisions shall be set against expected credit losses over a 12-month period, while for assets classified as under-performing and nonperforming, provisions shall be set against expected credit losses over the expected life. The revised regulation was not in force at the time of the assessment but is expected to address most of the weaknesses listed above.

46. A detailed related-party lending legal framework has been established. The definition of related party is broad and provides significant latitude for the BoT to use supervisory judgment.

Directors, senior managers, and persons with power of management are not permitted to borrow from the bank. The BoT closely monitors related party transactions and reviews intra-group lending.

47. Country, liquidity, market, interest rate, and operational risks are monitored under a fully-developed and comprehensive regulatory framework. Basel guidance is followed in the monitoring of these risks, and the data collected and analyzed by the BoT provides a comprehensive overview that feeds the risk dashboards. Cross-border lending and establishments are increasing and highlight the need for close monitoring of risk appetite statements and growth strategies.

48. At the assessment date, the Thai accounting standards are generally in line with IFRS. The BoT's asset classification and provisioning standards used in banks' financial statements are more conservative provisioning standards than IAS 39. Quantitative impact studies have revealed that the quantitative outcomes of the current the BoT provisioning standards are closer to IFRS 9. The latter will be fully implemented in 2020.

49. The mutual evaluation review (MER) by the Asia Pacific Group disclosed areas for improvement in AML/CFT supervision. The AMLO is the primary regulator but the BoT also plays an important role. The MER identified gaps in the AML/CFT standards. For example, identification of beneficial owner is not always required to be identified, there is no explicit requirement for PEP source of wealth to be identified, and originator and beneficiary information for wire transfers is not required for transactions originated by non-customers of the bank. There is no requirement to file suspicious transactions reports (STRs) for transactions between government entities, including state owned enterprises (SOEs). Amendments to legislation are undergoing the approval process to address these shortcomings.

Table 1. Thailand: Summary Compliance with the Basel Core Principles	
Supervisory Powers, Responsibilities, and Functions	
Principle 1	**Responsibilities, Objectives, and Powers**
Comments	The BoT has objectives and the necessary legal powers to conduct ongoing supervision, address compliance with laws and undertake timely corrective actions to address safety and soundness concerns for banks. In the areas where the MOF decides based on recommendation of the BoT (licensing of a bank, revoking a license, and approving non-Thai shareholders and directors), there have been no instances where the MOF has not followed the BoT’s recommendations. Although, the BoT has been delegated statutory power in supervising SFIs according to section 120 of FIBA and three supervisory authorities have agreed to develop a framework for responsibilities of each party, there still be a mix of roles in practice. Furthermore, the BoT is empowered to issue SFIs' regulations with approval of the MoF but not corresponding powers to take corrective action against problems in SFIs. This incomplete transfer of responsibilities may potentially expose the BoT to reputational risk especially when an SFI encounters problems. This is resulting from a misperception of its supervisory

Table 1. Thailand: Summary Compliance with the Basel Core Principles (continued)

	role in the banking system since the BoT may be perceived as having full supervisory powers over the SFIs. This weakness has been considered in the assessment of CP 2. Thai banks have not challenged the non-binding nature of the BoT's guidance and have complied with all recommendations imposed by the BoT examiners based on this guidance. Banks also expressed overall satisfaction to the assessors with the consultation process and timelines. Based on the discussions of this CP, the assessors suggest that, where appropriate, the BoT should publish response papers to consultations on important notifications instead of, or in addition to, attaching questions and answers to the relevant notification. This would give the BoT an opportunity to better explain its policy positions in writing. It would also further strengthen the international standing of the BoT in the regulatory community, clarify and give more prominence to BoT policy positions.
Principle 2	**Independence, Accountability, Resourcing, and Legal Protection for Supervisors**
Comments	The process for the appointment and removal of the governor and the members of the FIPC is transparent, and the BoT has adequate resources for the conduct of effective supervision and appropriate training plans. Discussions with supervisors and banks confirmed that BoT staff has credibility based on their professionalism and integrity. The BoT regularly benchmarks its salary scales to the market and has sufficient funding to cover overseas inspections and training. The legal framework for banking supervision includes adequate legal protection for the supervisors. While the assessors have not observed any objective evidence of lack of independence of the BoT, there are some factors that have the potential to interfere with the BoT's operational independence: • First, the permanent presence of the Director General of the FPO on the FIPC is not in accordance with international good practice. The FIPC is a decision-making body. The BoT clarified that the presence of the Director General of the FPO contributes to checks and balances and facilitates BoT's actions during a crisis. The assessors agree that there is an obligation to explain to the government the impact of the BoT's activities (external accountability), but there are other mechanisms than participation in a decision-making body to achieve this objective. A well-designed system of accountability supports independence. The assessors consider that the membership of the FIPC could be expanded during crisis situations or if the FPO needs to be involved, or other coordinating structures could be used. • Second, the presence of the Secretary-General of the Insurance Commission and the Secretary-General of the Securities and Exchange on the FIPC, and their participation in decisions also compromises operational independence and dilutes accountability. The assessors understand that this was decided to ensure better coordination between the agencies. Yet, the direct involvement of officials from other agencies in the BoT decision making is not good practice. • Third, Section 42 of the BoT Act affects the independence of the BoT, risks political interference in the BoT and implies government underwriting of ELA. It requires that when a financial institution faces a liquidity problem, which may seriously endanger the stability of the economic and monetary system, the BoT, after approval of the FIPC and the Cabinet may approve the granting of a loan or financial assistance to that financial institution. Section 42 is likely to be used if a D-SIB requires ELA.

Table 1. Thailand: Summary Compliance with the Basel Core Principles (continued)	
Principle 2	**Independence, Accountability, Resourcing, and Legal Protection for Supervisors**
	• Fourth, the BoT needs to inform the Minister in case PPA or PCA is taken (see Principle 11). • Finally, the BoT has had negative net worth for several years; the assessors confirm that the BoT has continued to adequately discharge its duties for many years despite its weak financial position. Nevertheless, a weak financial position further exacerbates the risks to the BoT's, reputation, independence and vulnerability to political interference outlined above. The BoT also supervises SFIs. There are eight SFIs in Thailand, each with a different mandate assigned by its founding law. Four SFIs are deposit taking institutions and three comply with the definition of a commercial bank in accordance with FIBA. The SFIs are regulated and supervised by the BoT with extensive involvement of the SEPO as owner and the FPO as policy maker. This involvement affects the independence of the BoT in the regulation and supervision of the SFIs. It also poses a reputational risk, as explained in CP 1. In terms of governance, the SFIs are supervised by a separate department, the Specialized Financial Institutions Supervision and Examination Department, but this department reports to the Assistant Governor of the Supervision Group, just like the commercial bank supervision departments. The assessors were also informed that the supervisory governance and decision-making for commercial banks and SFIs is the same. In other words, the members of the Financial Institution Examination Development Sub Committee and the Financial Institutions Policy subcommittee must decide both on commercial banks and SFIs regulatory and supervisory actions, considering their divergent degrees of independence. It is not unlikely that contamination seeps through and that matters arising in the SFI area spill over to the commercial bank decision making process, particularly because some commercial banks also have state ownership. The assessors make the following recommendations: • The composition of the FIPC should not include the Director General of the FPO on a permanent basis, but he/she could be added in crisis times. • Rotations among supervisory staff assigned to individual institutions appear to occur as a matter of practice. Rotations should be formalized in a policy and enforced within the supervision groups to ensure renewal in supervisory staff. Relationship managers should be rotated to other roles after 3–5 years of supervising the same institution/banking group. While there should be room for flexibility in the rotation policy, a maximum period that any supervisor can be assigned to the same institution should also be established.
Principle 3	**Cooperation and Collaboration**
Comments	The assessors discussed domestic and cross border cooperation with the relevant supervisors. They reviewed the MOUs as well as agendas of supervisory colleges held. They obtained evidence that cooperation between and information sharing with domestic and international authorities is effective.
Principle 4	**Permissible Activities**
Comments	Permissible activities are limited to financial sectors. Through subsidiaries, banks may offer securities and insurance products. The role of the BoT as supervisor of the SFIs continues to be developed with further work planned for the regulatory framework.

Table 1. Thailand: Summary Compliance with the Basel Core Principles (continued)	
Principle 5	**Licensing Criteria**
Comments	Applications for new banks are only accepted in pre-determined periods. The last period for filing applications closed in 2014; four licenses were granted. One application was denied in 2016 because it was filed after closing of the 2010–2014 licensing period established in the Financial Sector Master plan. Application reviewed included a request by the applicant for a waiver on paid-in capital at inception, the BoT denied, and the MOF concurred.
Principle 6	**Transfer of Significant Ownership**
Comments	Since 2017, there have been two significant ownership changes approved and two denied. One denial was due to failing the fit-and-proper review and the other due to the proposed ownership structure that would have hindered consolidated supervision.
Principle 7	**Major Acquisitions**
Comments	Cases reviewed denote that most applications are routine as they involve investing in financial business only and most are auxiliary functions such as Fintech subsidiaries. One denial involved an application to establish an FBG, but the applicant was unable to provide sound reasoning for the establishment and proof of sufficient financial resources.
Principle 8	**Supervisory Approach**
Comments	The BoT has established a supervisory process that supports the risk-based supervisory approach. The supervisory approach process was discussed and reviewed in detail using the risk matrix that rates the banks on their risk profile and forms the basis for developing the supervisory scope for the bank. The examination reports are comprehensive, and recommendations are followed-up with bank management and the Board as warranted. Banking groups and their structure/affiliates are incorporated to identify any risk feedback channels. Further linking of benchmarks, and analysis results to scope of supervisory activities for individual banks would continue development of risk-focused supervision.
Principle 9	**Supervisory Techniques and Tools**
Comments	Offsite and onsite reviews are performed by the same supervisory teams under a relationship manager and results in ongoing monitoring. A review of recommendations to banks reveals that the supervisory approach is comprehensive, and the supervisory tools yield a wide range of recommendations from governance to financial issues. Onsite inspections continue to evolve away from an audit or compliance and are addressing qualitative factors, such as the adequacy of board policies are receiving increased attention from examiners.
Principle 10	**Supervisory Reporting**
Comments	The BoT collects financial reports on a regular basis and has authority to collect supplemental information as warranted. Information collected enables the BoT to monitor the banking group and to produce detailed risk indicator analyses. A review of reports provided a broad overview of the banking system and detailed loan portfolio breakdowns and trends.
Principle 11	**Corrective and Sanctioning Powers of Supervisors**
Comments	The BoT has well-developed operational policies and guidance for the application of enforcement to ensure bank implementation of preventive and corrective orders. FIBA establishes the detailed legal framework supporting the BoT enforcement program.

Table 1. Thailand: Summary Compliance with the Basel Core Principles (continued)	
	Chapter 5 of FIBA provides the BoT with a broad range of possible measures to address safety and soundness issues at an early stage. The BoT has implemented an internal operating guideline for the application of the measures outlined in Chapter 5. However, as currently structured under the Guideline for PPA and PCA, implementation of Chapter 5 corrective action by BoT is linked to "Weak" banks thus not initiating until the bank is exhibiting significant weaknesses. Chapter 5 does not set Weak bank classification as a threshold. The Guideline should be amended to expand on the application of corrective measures in Chapter and clarify that Weak bank status is just one of the benchmarks. The Guideline also links corrective action to FIBA section 92, and bank conditions that may "cause damage to the public interest." Section 92, which is in Chapter 5 provides an expansive list of circumstances that may cause damage to public interest and requiring notification to the MOF if corrective action applied. Notifying the MOF may be more appropriate for actions involving banks with a composite rating of "5" or systemically important banks. In discussing this CP, the BoT representatives confirmed that most of the actions listed under the Guideline could be applied at earlier stages and independently of the process described in the Guideline and FIBA, and without MOF notification. In conducting its supervision and requiring banks to correct deficiencies, the BoT has not had to resort to PPA measures. Banks promptly respond to the BoT recommendations (Orders). However, it is recommended that FIBA, the Guideline and actual practices be aligned. Amending the Guideline to reflect ability of the BoT to exercise flexibility in pursuing formal corrective actions at earlier stages of bank condition, increasing implementation triggers and medium-term amending FIBA to narrow causing public damage definition to parallel possible bank resolution cases. Recommendations: • Amend Guideline to address application of corrective measures in Chapter 5 in general terms and in specific circumstances such as a Weak bank. Consider using the term PPA as it is used internationally and not in the narrow sense of extreme circumstances. • Discuss and provide a revised Guideline to stakeholders to ensure transparency. • Medium-term, work with MOF to narrow definition of the public damage clause to approximate actions taken in cases of serious deterioration of a bank that may lead to possible resolution and require MOF involvement. • Raise expectation for more formal supervisory action and PPA to banks at the "3" rating level and establish other early financial triggers and qualitative benchmarks for supervisory action.
Principle 12	**Consolidated Supervision**
Comments	The BoT supervises FBG which are headed by banks, and for the three that are headed by holding companies, the BoT can request all information required for proper supervision and perform fit-and-proper tests on significant shareholders, directors and management. Changes to the FBG structure must receive the BoT approval. Review of reports and discussions with staff revealed full familiarity with ownership, activities, and condition of the groups.
Principle 13	**Home-Host Relationships**
Comments	The assessors reviewed the agenda of the supervisory colleges organized by the BoT and attended by the BoT. As a host supervisor, the BoT has attended four supervisory colleges in 2017 and two in 2018.

Table 1. Thailand: Summary Compliance with the Basel Core Principles (continued)	
	As a home supervisor, the BoT has organized one supervisory college in 2018 and two in 2016. In view of the insignificance of the foreign operations, this is considered adequate. Also, the assessors discussed the effectiveness and intensity of the supervision of cross border operations with the relevant supervisors and they concluded that these are working effectively. No shortcomings were identified in the current practices.
Prudential Regulations and Requirements	
Principle 14	**Corporate Governance**
Comments	The assessors reviewed several inspection reports, corrective orders, recommendations, and supporting supervisory documents and determined that the BoT comprehensively assesses if financial institutions have robust corporate governance policies and processes that are commensurate with the risk profile and systemic importance of the financial institution. The corpus of regulations, guidelines, and the supervisory manual in corporate governance is comprehensive, enforceable, and in line with international good practice. At the assessment date, the BoT regulation with regard to corporate governance of financial institutions have already been enhanced at solo basis by the newly issued regulation, which came into effect since June 2018. For FBG, the enhancement to the governance requirement will be in effect from May 2019 onward. In the meantime, the governance of FBG follows the existing BoT notification no. FPG 8/2560 on supervision of corporate governance of FBG which covers almost all aspects of effective governance. The enhancement to the corporate governance regulation aims to strengthen management systems, transparency, and market discipline by reinforcing the BoT's expectation of (i) responsibility of the parent company board on oversight of subsidiaries, and (ii) composition of the parent company's board and subcommittees. The new notification will enhance corporate governance of financial institutions on a consolidated basis with the objective to strengthen oversight of the group's governance framework, the Board's annual performance assessment, remuneration structure, management of conflict of interests, and effective control, oversight, and audit mechanisms. Moreover, the regulation introduces a performance assessment. Also, the following requirements of the BoT Notification No.FPG. 10/2561: Corporate Governance of Financial Institutions are still subject to transitional and grandfathering measures are not yet enforced at the assessment date. • The nine-year renewal requirement of independent directors will become effective on May 1, 2022. • Independent directors who have been appointed before Clause 5.2.3. came in to force are grandfathered until May 1, 2022. 74 percent of directors of locally incorporated banks are already in compliance with this requirement. Clause 5.2.3. covers the 9-year director renewal period. It also covers the 2-year waiting period for taking up a position as independent director after being discharged from a non-independent director, manager, person with power of management, advisor, or staff position from the relevant financial institution. Finally, Clause 5.2.4 (2). limits the number of appointments as director of companies listed on the domestic and overseas stock exchanges to five for directors, managers, and persons with power of management. All directors are already in compliance with this requirement.

Table 1. Thailand: Summary Compliance with the Basel Core Principles (continued)	
	• The requirement for a risk oversight committee in accordance with Clause 5.4.2. comes into effect on May 1, 2019. In the meantime, the Risk Management Committee set up according to the previous notification shall be in charge for the duties of ROC. As of the assessment date, 5 out of 15 domestic banks have already set up a risk oversight committee. Two banks will establish one by December 2018 and the remaining eight banks will be in full compliance by May 2019. The two-year waiting period after being discharged of their functions for non-independent directors, managers, persons with power of management, advisors, or staff members of financial institutions before they can be appointed as independent directors is at the shorter end of the spectrum. The pilot on behavior & culture (B&C) assessment in four large financial institutions is at the cutting edge of good practice. To continue to raise awareness of governance and risk culture, the assessors recommend the BoT incorporates regular meetings with independent directors as part of its supervisory process.
Principle 15	**Risk Management Process**
Comments	The assessors reviewed examination reports, risk assessments, and supporting supervisory documents in risk management. They found that the BoT supervisors assess the financial institutions' policies, procedures, and practices in sufficient depth and scope across the risk categories. The assessors recommend that the BoT better articulate its supervisory expectations by publishing best practice guides, for example after thematic reviews or when a range of practice is observed on topics, for example risk management and governance. This will also contribute to the international standing of the BoT as a world class prudential supervisor.
Principle 16	**Capital Adequacy**
Comments	The assessors reviewed the BoT regulations for compliance with the Basel standards. The assessors also reviewed an ICAAP and the BoT assessment of the ICAAP and concluded that the BoT's assessment and analysis was thorough and consistent. The assessors discussed the approval, application, and the BoT review processes for advanced IRB and other modeling approaches with the Head of the modelling unit and reviewed supporting documents. The BoT sets prudent and appropriate capital adequacy requirements for banks that reflects the risks undertaken by banks in the market in which it operated. The components of capital absorb losses and the capital requirements are not less than the Basel standards. The assessors recommend that the BoT build a more integrated approach towards Pillar 2, starting by developing a methodology to set individual bank capital ratios as part of its risk based supervisory framework.
Principle 17	**Credit Risk**
Comment	The assessors reviewed inspection reports including the orders and recommendations following the inspections. They discussed the follow-up of these recommendations with the relevant examiners.

Table 1. Thailand: Summary Compliance with the Basel Core Principles (continued)	
Principle 18	**Problem Assets, Provisions, and Reserves**
Comments	The assessors reviewed several examination reports and risk assessments for asset classification and provisioning. They found that the examinations were comprehensive and in sufficient depth to cover the implementation of BoT laws and regulations. The findings of the thematic examinations were reviewed and discussed with the relevant examination teams. The BoT ensures that banks have adequate policies and processes for the early identification and management of problem assets, and the maintenance of adequate provisions and reserves. The BoT supervisors closely monitor the asset quality at a very granular level in individual banks and at the level of the banking system. The assessors were shown trends in cure rates and migration rates for restructured and defaulted exposures, at individual bank level and for the banking system. These trends inform the intensity of supervision of asset quality during the annual inspections. Provision coverage is also high. It stands at 140 percent (total provisions/total NPLs) and 170 percent (total provisions/required provisions). There are areas that should be revised to align the BoT regulations and practices with the most recent Basel guidelines ("Prudential Treatment of Problem Assets—Definitions of Nonperforming Loans and Forbearance—April 2017"). • Banks should be required to include a list of indicators to determine the qualitative criterion of unlikeliness to pay in their policies. While the assessors were shown evidence that at least one Thai bank has a list of indicators of unlikeliness to pay, it is recommended the BoT regulations explicitly require banks to do so. • The BoT definition of restructuring and rescheduling is not in line with the definition of forbearance in international good practice; it should refer to financial difficulty of the borrower and it should not be conditional on the bank making a loss. • The probation period for nonperforming restructured exposures to be upgraded to performing exposures is currently three months. International good practice requires it to be a minimum of one year. • No upgrade of the exposure should take place when restructuring is granted (The BoT Notification FPG 5/2559 Regulations on Asset Classification and Provisioning of financial Institutions paragraph 5.2.3 (2)). Upgrades should only be allowed after the debtor has successfully completed the probation period. - More detailed guidance should be given in the BoT regulation on the level of application (borrower or transaction level) of the classification. The BoT has included guidance on the level of application in the Q&A attached to the regulation, but the assessors believe the topic is important enough to ensure this be included in the regulation. The BoT has issued a revised Asset Classification. After TFRS 9 becomes effective in 2020, asset classification, provisioning and write off shall be in accordance with the TFRS 9, considering economic, business, and financial conditions of the debtors. That is, the asset will be classified into 3 classes: performing, under-performing, and nonperforming. For assets classified as performing, provision shall be set against expected credit loss over 12-month period while assets classified as under-performing and nonperforming shall be set against expected credit loss over the expected life. The revised regulation was not in

Table 1. Thailand: Summary Compliance with the Basel Core Principles (continued)	
	force at the time of the assessment but is likely to address most of the recommendations listed above.
Principle 19	**Concentration Risk and Large Exposure Limits**
Comments	The assessors reviewed examination reports, risks assessments, and a Pillar 2 assessment and concluded that the BoT supervisors review concentration risks adequately.
Principle 20	**Transactions with Related Parties**
Comments	Except for credit cards, directors, bank management, and persons with power of management are not permitted to borrow from the bank. The framework regulating related party lending is comprehensive and compliance closely supervised by the BoT.
Principle 21	**Country and Transfer Risks**
Comments	Cross-border activities, including establishing onsite presence, are increasing. Examiners conduct onsite reviews of cross-border offices as warranted. Country risk manual should be enhanced by providing best practices on strategic risk analysis of banks expanding cross-border and linking to corporate customers due diligence that they are serving.
Principle 22	**Market Risk**
Comments	Market risk is considered low and is monitored through onsite and offsite activities. Trading income is less than 10 percent of Thai bank earnings. Stress tests do not disclose any significant impacts.
Principle 23	**Interest Rate Risk in the Banking Book**
Comments	Fixed car loans funded by floating rate deposits; represents the main risk. But the exposure is small, less than 8 percent of total loans and is housed in banks that the BoT judges able to manage the risk
Principle 24	**Liquidity Risk**
Comments	Operationally, liquidity is monitored through gap analysis and is mainly derived from deposits. LCR and NSFR have been adopted.
Principle 25	**Operational Risk**
Comments	The assessors reviewed inspection reports and risk assessments. They concluded that the BoT examiners assess the operational risk management framework comprehensively and in sufficient depth.
Principle 26	**Internal Control and Audit**
Comments	Adequate regulatory requirements are in place.
Principle 27	**Financial Reporting and External Audit**
Comments	At the assessment date, the Thai accounting standards are generally in line with IFRS. The BoT's asset classification and provisioning standards for CL/PIL are more conservative standards for provisioning than IAS 39. Quantitative impact studies have revealed that the quantitative outcomes are closer to IFRS 9. In 2020, once TARS 9 comes into force, the financial statements of Thai banks will be fully aligned with widely accepted international standards.

Table 1. Thailand: Summary Compliance with the Basel Core Principles (concluded)	
Principle 28	**Disclosure and Transparency**
Comments	Adequate requirements are in place.
Principle 29	**Abuse of Financial Services**
Comments	Substantial resources are applied to AML/CFT work, and an AML/CFT strategy (2017–2021) to continue enhancing supervision has been adopted. In 2017 Thailand underwent a Mutual Evaluation Review (MER) by the Asia Pacific Group on Money Laundering. The MER identified gaps in the AML/CFT standards. For example, identification of beneficial owner is not always required to be identified, there is no explicit requirement for PEP source of wealth to be identified, and originator and beneficiary information for wire transfers is not required for transactions originated by non-customers of the bank. Amendments to AMLA and Ministerial Regulation are in-process that address these issues.

E. Recommended Actions

Table 2 below lists the suggested actions for improving compliance with the BCPs and the effectiveness of the regulatory and supervisory framework.

Table 2. Thailand: Recommended Actions	
Reference Principle	**Recommended Action**
Principle 1	Where appropriate, the BoT should publish response papers to consultations on important notifications instead of, or in addition to, attaching questions and answers to the notification. This would give the BoT an opportunity to better explain its policy positions in writing. It would also further strengthen the international standing of the BoT in the regulatory community and clarify BoT policy positions.
Principle 2	• The composition of the FIPC should not include the Director General of the FPO on a permanent basis, but he/she could be added in crisis times. • The Secretary-General of the Insurance Commission and the Secretary-General of the Securities and Exchange should be removed from the FIPC. • Rotations among supervisory staff assigned to individual institutions appear to occur as a matter of practice. Rotations should be formalized in a policy and enforced within the supervision groups to ensure renewal in supervisory staff. Relationship managers should be rotated to other roles after three–five years of supervising the same institution/banking group. While there should be room for flexibility in the rotation policy, a maximum period that any supervisor can be assigned to the same institution should also be established.
Principle 4	Continue reforms to supervise deposit-taking SFIs under the same standards as commercial banks.

Table 2. Thailand: Recommended Actions (continued)	
Reference Principle	**Recommended Action**
Principle 8	Further linking of benchmarks, and analysis results to scope of supervisory activities for individual banks would continue the development of risk-focused supervision.
Principle 9	Continue to augment emphasis on qualitative factors, such as the adequacy of board policies and risk management when evaluating bank condition.
Principle 11	1. Amend Guideline to advance PPA application prior to Weak bank status. 2. Align FIBA, Guideline and BoT operational views on the application of FIBA Chapter 5. 3. Medium-term, work with the MOF to narrow definition of public damage in FIBA to reflect actions to be taken in cases of serious deterioration that may lead to possible resolution such a 5-rated bank), and that require MOF involvement. 4. Raise expectation for more formal supervisory action and PPA to banks at the "3" rating level and establish other early financial triggers and qualitative benchmarks for supervisory action.
Principle 14	To continue to raise awareness of governance and risk culture, the assessors recommend the BoT incorporates regular meetings with independent directors as part of its supervisory process.
Principle 15	The assessors recommend that the BoT better articulate its supervisory expectations by publishing best practice guides, for example after thematic reviews or when a range of practice is observed on topics, for example in the area of risk management and governance. This will also contribute to the international standing of the BoT as a world class prudential supervisor.
Principle 16	The assessors recommend that the BoT build a more integrated approach towards Pillar 2, starting by developing a methodology to set individual bank capital ratios as part of its risk based supervisory framework.
Principle 18	The following areas should be revised to align the BoT regulations and practices with the most recent Basel guidelines ("Prudential Treatment of Problem Assets—Definitions of Nonperforming Loans and Forbearance—April 2017"): • Banks should be required to include a list of indicators to determine the qualitative criterion of unlikeliness to pay in their policies. While the assessors were shown evidence that at least one Thai bank has a list of indicators of unlikeliness to pay, it is recommended the BoT regulations explicitly require banks to do so. • The BoT definition of restructuring and rescheduling should be aligned with the definition of forbearance in international good

Table 2. Thailand: Recommended Actions (concluded)	
Reference Principle	**Recommended Action**
Principle 18	practice; it should refer to financial difficulty of the borrower and it should not be conditional on the bank making a loss. • The probation period for nonperforming restructured exposures to be upgraded to performing exposures is currently three months. International good practice requires it to be a minimum of one year. • No upgrade of the exposure should take place when restructuring is granted (The BoT Notification FPG 5/2559 Regulations on Asset Classification and Provisioning of Financial Institutions paragraph 5.2.3 (2)). Upgrades should be allowed only after the debtor has successfully completed the probation period. • More detailed guidance should be given in the BoT regulation on the level of application of the asset classification (borrower or transaction level). The BoT provided evidence that at least one bank applies the definition at the borrower level, but the regulation should be more explicit.
Principle 21	Country risk manual should be enhanced by providing best practices examples on strategic risk analysis of banks expanding cross-border and linking back to corporate customers that they are serving.
Principle 29	Implement amendments to AMLA and Ministerial Regulation once approved by legislature.

F. Authorities' Response to the Assessment

50. The Thai authorities appreciate the comprehensive and positive assessments and the constructive dialogues during the FSAP mission as Thailand's banking sector has continued to develop since the last assessment in 2008.

51. The Thai authorities note the assessors' observations on institutional arrangement, the recommendation on the composition of FIPC and the finding of no objective evidence of lack of independence of the BoT. We would like to reiterate our view that there are merits to each institutional arrangement design and there is no one-size-fits-all in this matter, but rather a 'best suited' one, tailored to the jurisdiction's context and shaped through experiences. The current institutional arrangement in Thailand has been purposely designed based on our experiences, particularly by drawing upon lessons learned during the 1997 financial crisis. The FIPC members consist of three BoT ex officio members, the Director of the FPO, the Secretary of the OIC, the Secretary of the SEC and five external experts, each with one voting right. As such, the three representatives from MOF and other regulatory agencies are outnumbered by external experts. This institutional framework has proven to be practical and effective, suitable for Thailand's context, while not compromising the independence of the BoT as the bank regulator.

52. With the increased interconnectedness among banking, securities and insurance sectors, the MOF and other financial regulatory agencies' participation in the decision-making process of the FIPC are useful in ensuring an effective oversight of financial stability. Their knowledge and understanding in financial system and real economy has brought in broader perspective and helped formulate recommendations that take into consideration potential impacts on the overall economy. In the complex financial landscape, it became rather challenging to find a knowledgeable and well-experienced individuals to serve in the FIPC that have no involvement in the financial sector and no conflict of interest. The existing arrangement gives due regards to the followings:

- **timely engagement of the authorities** to promote effective and efficient coordination in policy-making and crisis management

- **appropriate check and balance** and due consideration of overall economy and financial stability

- **capitalization on synergy among authorities and harmonization of regulations across sectors through cross-directorships** with appropriate arrangement to safeguard operational independence. This model should support policy harmonization better than a consulting forum.

53. The FIPC's institutional credibility and commitment to ensure financial stability have contributed to strategic decision-making and effectiveness of supervisory and regulatory framework. The authorities are of the view that macroprudential policy decision should not be the sole responsibility of the FIPC but should also involve the Monetary Policy Committee (MPC) in order to have a holistic macroeconomic view and can deploy other policy tools to help safeguard the overall financial stability. The mandates of MPC and FIPC are stipulated in the BoT Act, for which the primary objective of the MPC is price stability and that of the FIPC is financial institution system stability. Effective policy decisions could leverage on the complementarity between monetary and macroprudential policies, while separating monetary policy and financial stability decisions could be sub-optimal.

54. Accountability of the FIPC can be assured with various measures, including submitting the biannual report to the cabinet through the Finance Minister as required by the BoT Act, disseminating data to the public, and engaging with third party/independent stakeholders on performance evaluation of the Committee. Additionally, the BoT has actively engaged with the committees and subcommittees under national legislative body who oversee economic and financial stability and policy issues.

55. SFIs supervisory framework is undergoing a major reform with an aim to implement supervisory standards for deposit-taking SFIs in a comparable manner to commercial banks. Since 2015, the BoT has strengthened the supervisory and regulatory actions of SFIs in various aspects, such as governance, credit process, accounting and information disclosure, etc. As part of the screening process, SFI examination results have to go through the BoT subcommittee. The final examination report will be submitted to both the MOF and SFI's Board. It is worth noting that the regulatory formulation process for SFIs is separated from that of commercial banks, whereby the draft of SFIs regulations are reported to FIPC only for acknowledgement before submitting to the MOF for approval.

56. The authorities share the view of the recommended action to continue reforms to supervise deposit-taking SFIs with the same standards as commercial banks. However, we would like to stress that such reform efforts should take into account: (1) the SFIs' respective mandates to fulfill financial gap and foster economic development; (2) capability and readiness of the SFIs; and (3) mutual understanding/agreement among relevant authorities.

57. To further strengthen cooperation, coordination and information sharing among key regulatory agencies, an existing Three-Regulator Steering Committee (3RSC) serves as a platform for regular exchange of information and coordination in respect of all financial sector surveillance and regulatory policy issues. 3RSC has been established as a non-statutory body outside of the BoT, comprising the BoT Governor, the SEC, and the OIC Secretary-Generals as well as high-level executives of these regulatory agencies. The 3RSC meets at least quarterly to discuss policy-related issues, share information, and coordinate their regulatory policies. The MOF also attends the 3RSC meeting on a regular basis. The newly established 3RSC working group on crisis preparedness includes other relevant agencies such as DPA and FIDF. Currently, the Thai authorities are discussing the possibility of setting up an overarching and advisory body with respect to financial stability risks.

58. The Thai authorities welcome the assessors' recommendations, which are in line with our action plan, such as enhancing clarity of internal guidelines for preventive actions, PPA/PCA and revising regulation on asset classification to be implemented in 2020 once IFRS 9 becomes effective. We aim to continue to strengthen our supervisory framework in line with international best practice, and to further promote stability and development of the banking sector in Thailand.

Annex II. Report on the Observance of Standard and Codes: Insurance Core Principles—Summary Assessment[1]

A. Introduction and Scope

1. This paper provides an assessment of significant regulatory and supervisory practices in the insurance sector of Thailand. The current assessment is benchmarked against the ICPs issued by the International Association of Insurance Supervisors (IAIS) in October 2011, including revisions authorized up until December 2017. The assessment was undertaken as part of the FSAP conducted by the IMF and World Bank. The Insurance Core Principles (ICPs) apply to all insurers, whether private or government controlled. Specific principles apply to the supervision of intermediaries.

B. Information and Methodology Used for Assessment

2. The assessment is based solely on the laws, regulations, and other supervisory practices in place in February 2019. While the assessment does not reflect ongoing regulatory initiatives, some key proposals are discussed by way of additional comments in this report. The authorities have provided a self-assessment, supported by examples of actual supervisory practices and assessments, related to entities (the identities of which have not been disclosed), which enhanced the robustness of the assessment. Technical discussions with, and briefings by, officials from the Thai authorities have also enriched this report as did discussions with some industry participants. The assessors did not meet with any consumer groups.

C. Institutional and Macroprudential Setting—Overview

Institutional Framework and Arrangements

3. Financial sector regulation in Thailand is dependent on three main supervisory authorities, each with its own sector specific legislation. Insurance is the responsibility of the Office of the Insurance Commission (OIC). Banking is supervised by the BoT, Securities is regulated by the SEC as are provident funds. These authorities operate with considerable autonomy and there is cooperation and some overlap in powers and responsibilities with respect to financial groups and financial stability issues.

4. The OIC is within a portfolio of agencies reporting to the MoF. It is led by a Board of Directors which includes the Permanent Secretaries for Finance and Commerce, the Secretary-General of the Consumer Protection Board, the Governor of the Bank of Thailand, the Secretary-General of the SEC and the Secretary-General of the OIC who serves as its Secretary and the OIC's Chief Executive Officer. The Board also has at least six (and not more than eight) other

[1] The assessment team comprised Thomas Finnell (IMF external expert) and Charles Michael Grist (World Bank external expert).

members who are appointed based on their professional backgrounds ((law, accountancy, business administration, finance, economics, and/or insurance).

5. The OIC became an independent authority with the passage of the Insurance Commission Act (ICA) in 2007. As previously mentioned, the Secretary General is its Chief Executive and supervises day to day insurance business through authorities and requirements established under the Civil and Commercial Code, the Life Insurance Act 1992 (LIA) and Non-Life Insurance Act 1992 (NLIA), (including amendments and subordinate legislation through 2018), and in accordance with policies or regulations laid down by Insurance Commission as defined under section 6, 12, 17, and 20 of ICA 2007.

6. The OIC is financed by levies on the sector it regulates. These are approved by the Minister and Cabinet. In January 2019, the OIC had a staff of 575, of which 389 are at the central office in Bangkok and 186 are in regional offices.

Industry Structure and Recent Trends

7. The Thai insurance industry is a relatively small but growing part of the country's financial services sector. Insurance sector assets have grown from 10 percent of GDP in 2006 to over 22 percent of GDP in 2016, constituting 9 percent of total financial sector assets. Similarly, between 2008 and 2017, gross premiums written have grown at an average annual rate of approximately 16.9 percent, substantially above nominal GDP growth of 9.9 percent during the same period. As a result, the insurance penetration ratio (the ratio of premiums written to GDP) has gradually increased from 3.63 percent in 2008 to 5.39 percent in 2017.

8. Insurance penetration is high by regional standards, fueled by growing per capita income, and expectations of longer-term economic growth. Thailand is the world's 29th largest insurance market.[2] Insurance penetration is below that seen in higher income Singapore (8.75 percent) but higher than most other countries in the region including Malaysia, Indonesia, and Vietnam. It is also higher than many countries with similar per capita income like Columbia (2.87 percent), Peru (1.62 percent), and Ecuador (1.99 percent).

9. There was a total of 82 authorized insurers including 6 foreign branch insurers operating in Thailand at the end of December 2018.[3] They include 58 non-life insurers, 22 life and pension insurers, and two locally established reinsurance companies. Market participants must either be locally established public companies or branches of foreign insurers. Less than 2 percent of gross premiums written is written outside the country. Separate entities are required for life and non-life business. The number of insurers has gradually decreased from 90 in 2013. The 2 reinsurance companies write non-life and life business but life reinsurance accounts for only a small fraction of gross premiums written in the market.

---

[2] Axco Global Statistics

[3] Source OIC

10. International participation in the industry is restricted. There are currently six foreign branches licensed to operate in Thailand, but no new branches have been licensed in several years. In practice, a moratorium on new licenses (domestic and foreign) has been in place for over 20 years (although there is no official policy on this matter), the rationale being that there were many insurers in Thailand. However, new players could still enter the Thai insurance industry through a joint investment in an existing insurance company. Section 10 of the LIA and Section 9 of the NLIA require that Thai nationals hold at least 75 percent of the total number of a public limited company insurer's voting shares and three quarters of the company's directors must be Thai nationals.

11. At present, approximately 25 percent of total industry assets are foreign owned. This has decreased from approximately 31 percent in 2013. In total, there are 34 insurance companies, which have some international participation and are part of international insurance groups: 11 life insurance companies and 23 non-life insurance companies. Approximately 23 insurance companies have equity links to banking groups and non-financial conglomerates.

12. Insurance market concentration is low. The Herfindahl-Hirschman Index of market concentration is less than 1400 for the life industry indicating an unconcentrated industry while the index for the non-life industry is less than 200 indicating a highly competitive industry. The largest market share of any participant for the life industry was 26 percent while that of the non-life industry was 8 percent.

13. International financial reporting standards and an independent audit function and actuarial involvement are observed in Thailand. The Federation of Accounting Professions (FAP) is authorized to develop accounting standards in Thailand under the supervision of the Accounting Profession Supervision Committee, and has generally adopted all International Financial Reporting Standards (IFRS) with a one-year delay from the equivalent IFRS Standard's effective date. Thai Financial Reporting Standards (TFRS) are aligned with the 2016 version of IFRS. The TFRS approach to the valuation of assets and liabilities implies a risk-adjusted present value approach to both assets and liabilities, assuming a going-concern basis.

14. TFRS have been adopted by all insurers in Thailand. Currently, Thai insurers are preparing to adopt IFRS 9, Financial Instruments, that will be effective in 2020. FAP is in the process of issuing a guideline for insurance companies who elect to further defer the implementation of IFRS 9 until IFRS 17, Insurance Contracts, becomes effective in Thailand, tentatively, in 2023.

15. The financial statements of Thai insurance companies have to be reviewed or audited by a CPA who must comply with Thai Auditing standards. The FAP prescribes Thai Auditing standards, closely following international auditing standards. Independent auditors of Thai insurance companies must be licensed. Licensing requirements include training in the insurance business, IFRS, international auditing standards, corporate governance, risk management and internal controls. Independent auditors must use actuaries to review the technical accounts, and reserves of the insurance companies they audit. The FAP, under the oversight of Accounting Professions Regulatory Commission, is responsible for regulating the audit profession. In addition, the Central Bank of

Thailand requires that auditors of all financial institutions must be those approved by the SEC as auditors in the capital market.

16. A licensed actuary is required to certify the valuation of liability annually on both a gross and net of reinsurance basis. The license is issued by OIC and must be renewed every two years. The qualification of a licensed actuary for non-life business includes either being a fellow of the Society of Actuaries of Thailand or having graduated from an Office of Civil Services Commission-approved university and have at least five years of reserving experience. Life actuaries are required to be a fellow of the Society of Actuaries of Thailand.

Risks and Vulnerabilities

17. The continued growth and stability of the insurance sector is dependent on continued economic growth and stability of the region, and the broader financial sector. While economic growth is expected to continue in the range of 2–3 percent per annum, economic or political shocks could have significant impacts on these expectations. The authorities are aware of these issues and are working to maintain a stable environment.

18. Thailand's life insurance industry faces a number of challenges. Thailand's aging population impacts on the sale of traditional products. There are strategic, operational and conduct of business risks that must be managed in the development of new products. Seniors accounted for about 14.2 percent of the national population in 2015 and are expected to grow to more than 25 percent by 2023. Another continuing challenge for Thailand's life industry is the ability of insurers to match long-duration insurance liabilities with investment instruments in local markets.

19. The low interest rate environment also presents challenges for life insurance. Thailand, like many jurisdictions, has seen interest rates decline to levels below what was assumed when many long-term guaranteed policies were issued. Bancassurance has been a major driver of premium growth in the past decade, and most of the life insurance products sold through that channel have been guaranteed endowment products, which remain popular in Thailand. Life insurers could not perfectly match the duration of their assets and liabilities, which causes volatility in earnings, capital requirements and capital resources. Thai life insurers, especially those with guaranteed products in their portfolio, aim to prospectively offer less guaranteed benefits and focus instead on life protection, health protection and unit-linked products to shift investment risks to policyholders.

20. The Thai non-life insurance market is intensely competitive and there is a large number of insurers for the size of market. There is a risk that fierce competition among insurers on price, rather than on quality of service, could result in the erosion of underwriting discipline and could create solvency problems. This is particularly true for smaller insurers. Further industry consolidation may help mitigate these pressures. The exposure to natural disasters and catastrophic loss in the region is also an important challenge for the non-life insurance sector and part of insurer risk management requirements.

D. Preconditions for Effective Insurance Supervision

Sound and Sustainable Macroeconomic and Financial Sector Policies

21. Thailand was ranked 32nd in global competitiveness by the World Economic Forum (WEF). Some of the positive factors discussed in the WEF assessment included the quality of the macroeconomic environment, health and primary education, and market size. The top challenges indicated by the forum were some inefficient institutions and lack of innovation.

Mechanisms for Consumer Protection

22. Although there is no insurance ombudsman in Thailand, the OIC can arbitrate any dispute between the public and insurers and has imposed a requirement that all insurance policies must contain an option (binding on the insurer) for arbitration of claims under the OIC's rules. The decisions of the OIC are binding on the insurer but are not binding on the policyholder. The arbitration process exists as a quick and economical way of settling contractual disputes, with cases expected to be settled within 90 days. The Thai General Insurance Association also runs an arbitration office, the primary objective of which is to reduce the number of disputes between insurers and their clients where the amounts involved are relatively modest and recourse to the courts would be a costly option. The four arbitrators are retired criminal and appeal court judges. Almost all cases handled by the arbitration office relate to motor insurance.

23. Thailand has two policyholder protection funds to protect policyholders in the event of insurer insolvency. Under Chapter V of the NLIA, a "protected fund," or policyholders' protection fund, is financed by a 0.1 percent levy on the gross written premium for each company. The OIC has issued guidelines outlining the rules, procedures and conditions for creditors seeking to obtain payments from the fund. Each creditor has the right of repayment from the non-life fund and the amount repaid, together with the insurer's reserves deposited with the OIC, must not exceed the amount due under the policy. The total repayment amount to any single claimant for all non-life insurance policies with the same insurance company is limited to THB 1 million (US$31,299). Similarly, in 2008 an amendment to Chapter 5 of the LIA established a policyholder protection fund for life insurance companies. Neither fund is guaranteed by the state. The OIC is also responsible for the administration of the Protection of Motor Vehicle Accident Victims Act, which is administered through its offices around the country and has a separate fund for compensation.

24. Table 1 summarizes the observance of the ICPs arising from this assessment.

Table 1. Thailand: Summary Compliance with the Insurance Core Principles
1. Objectives, Powers, and Responsibilities of the Supervisor
The authority responsible for insurance supervision (the OIC) is clearly defined in primary legislation. The operations of the OIC appear to be broadly focused on the maintenance of a fair, safe and stable insurance sector for the benefit and protection of policyholders. Under current legislation, however, several key supervisory powers under the legislation, like the power to approve licensing decisions, rest with the Minister and/or Cabinet rather than the supervisory authority. Establishing these powers with the Minister rather than the supervisor creates a risk that the supervisor may not have adequate powers that can be used in a timely manner to achieve the objectives of supervision.
2. Supervisor
While many of the ICP standards are fully addressed, the independence and transparency of the supervisory organization can be improved and should be made more consistent with international standards. Improving independence of the OIC should be accompanied by measures to increase its formal accountability to government.
3. Information Exchange and Confidentiality Requirements
The supervisor has the necessary legislative authority and demonstrates the ICP standards in its supervisory practice.
4. Licensing
Licensing criteria need to be updated and applied across all industry applicants. For example, consideration of corporate or group structure does not currently appear to be part of licensing requirements. Consideration should be given to proposed governance structure, risk management, and internal control functions of all licence applicants at the licensing stage and identification and suitability assessment of controlling beneficiaries should be part of the licencing process. The OIC is aware of the licensing deficiencies and is working to make appropriate changes to insure consistency with international standards.
5. Suitability of Persons
Requirements for significant owners and, in particular, for all real person controlling beneficiaries of insurers should be strengthened, particularly with respect to identifying these individuals and assessing their integrity and financial resources. Consideration should be given to developing more specific competency requirements for people in control functions (e.g., risk management).
6. Changes in Control and Portfolio Transfers
The insurance legislation does not include an appropriate definition of control, nor does it include general provisions requiring ongoing approval of all changes in control, other than those with respect to foreign shareholders.
7. Corporate Governance
Corporate governance requirements for insurers have been strengthened and appear to be consistent with the requirements of the ICP.

Table 1. Thailand: Summary Compliance with the Insurance Core Principles (continued)
8. Risk Management and Internal Controls
Internal control requirements for insurers have been strengthened and appear to be consistent with the requirements of the ICP.
9. Supervisory Review and Reporting
The OIC has made significant progress in developing and implementing a good supervisory framework for insurers. Some refinements to the framework may be required as new regulatory requirements are implemented.
10. Preventive and Corrective Measures
The ladder of intervention appears to leave the use of the OIC's strongest preventive and corrective powers until an insurers' financial condition is extremely serious and when the supervisor should be focused on its orderly wind-up as a gone concern rather than its recovery.
11. Enforcement
The OIC's ability to enforce corrective action should be enhanced by strengthening its enforcement powers to take control of non-life insurers and increasing the supervisor's enforcement powers over intermediaries.
12. Winding-up and Exit from the Market
The legislation does not specify a clear point at which it is no longer permissible for an insurer to continue its business. These concerns are partially mitigated by the strong supervisory practice of the OIC with respect to capital and the existence of policyholder protection funds.
13. Reinsurance and Other Forms of Risk Transfer
While the assessment observes compliance with the ICP principle statements, it is noted that assuring amounts recoverable from large foreign-based reinsurers without a physical presence in Thailand could be challenging should a domestic insurer become insolvent.
14. Valuation
The notifications on valuation provide requirements for the measurement of assets and liabilities but could be clearer in some respects, e.g., as to their recognition or derecognition, including for insurance and reinsurance contract receivables and liabilities.
15. Investment
No comments.
16. Enterprise Risk Management (ERM) for Solvency Purposes
The expanded notifications on ERM and ORSA were only recently adopted in January 2019. While insurers have some prior experiences and training with aspects of those notifications, including ORSA, ORSA is nonetheless a key new requirement for which insurers and the OIC will benefit from experience going forward. Reporting on ORSA by insurers won't begin until 2020. The notification is largely principles-based, and variations in compliance and the granularity and quality of reporting can be expected across insurers. The new information that will be soon be reported to the OIC resulting from the new notifications on ERM/ORSA presents an onus for the OIC to identify deficiencies, but also an opportunity to highlight best practices.

Table 1. Thailand: Summary Compliance with the Insurance Core Principles (continued)
17. Capital Adequacy
The Thai solvency regime uses RBC as a standard method for all insurers to determine and report to the OIC and to the public on capital adequacy. Currently, RBC excludes provisions for operational and catastrophe risks.
18. Intermediaries
Many of the COB conduct requirements for intermediaries are new and have not yet been fully tested in the market, and supervisory programs for brokers, agents and insurers are still evolving.
19. Conduct of Business
• Many COB requirements are new to the market and have just been implemented. While the OIC has engaged in extensive consultation and provision of implementation assistance, time will tell whether or not they are being fully adhered to. • Requirements concerning the use of client information by insurers are basic and do not guard against misuse of client information for purposes like unwanted cross selling of products. • Conflict of interest/disclosure of compensation requirements for agents and intermediaries should be enhanced.
20. Public Disclosure
The notifications on disclosure are recently enacted (2018). The notifications do not explicitly require certain disclosures that are contained in the ICP 20 principles. For example, the notifications do not explicitly require reporting of information concerning the level of sensitivity to market variables associated with disclosed amounts; the methodology used and the key assumptions employed in measuring assets and liabilities for asset liability management (ALM) purposes and any capital and/or provisions held as a consequence of a mismatch between assets and liabilities; financial performance by segment; or information about the nature, scale and complexity of risks arising from insurance contracts. While the ICP calls for disclosure of insurance risks (which can include underwriting, pricing, lapse, and expense risks), the notifications require disclosure only of underwriting risks. However, it is noted that required disclosures of such risks in audited financial statements are more comprehensively stated.
21. Countering Fraud in Insurance
The new notifications on fraud (2018) have only recently been enacted and do not go into force until mid-2019. The Life Insurance Act was also recently amended in February 2019 to increase penalties and sanctions and does not take effect until August 2019. The 2018 notifications do not require that frauds or acts with a material impact on the financial position, performance or reputation of an insurer be reported by an insurer to the OIC, if the company has rectified the matter within a timeframe deemed appropriate by the audit committee.
22. Anti-Money Laundering and Combating the Financing of Terrorism
No comments.
23. Group-wide Supervision
The OIC does not serve in the capacity of a group-wide supervisor for any groups. As an involved supervisor it cooperates and coordinates with the BoT as the group-wide supervisor of Thailand-domiciled financial conglomerates, and with insurance supervisors in other jurisdictions who serve as group-wide supervisors

Table 1. Thailand: Summary Compliance with the Insurance Core Principles (concluded)
for groups operating on a cross-border basis in Thailand through investment in local insurers or through branches.
24. Macroprudential Surveillance and Insurance Supervision
No comments.
25. Supervisory Cooperation and Coordination
No comments.
26. Cross-border Cooperation and Coordination on Crisis Management
The OIC does not formally participate in all supervisory colleges or, where applicable, of crisis management groups, of foreign-based groups operating in Thailand, due in part to the relatively small share of the domestic business of some groups relative to the group on a consolidated basis. For firms operating in Thailand on a cross-border basis, contingency plans are not required as a matter of course, but they may be required on an ad hoc basis by the OIC in light of events or emerging risks. Certain aspects covered by the ICP principles, e.g., for the supervisor to share certain information with other relevant supervisors, are not covered by a specific local requirement (although, as a practical matter, they may be handled by the OIC in the course of inter-supervisor communications including through colleges. Such information includes about group structure (including legal, financial, and operational intragroup dependencies); interlinkages between the insurer and the financial system in each jurisdiction where it operates; and potential impediments to a coordinated solution.

Table 2. Thailand: Recommendations to Improve Observance of ICPs

Insurance Core Principle	Recommendations
1. Objectives, Powers, and Responsibilities of the Supervisor	It is recommended that the authorities amend the primary legislation at their next opportunity to vest greater power for key supervisory decisions with the OIC. In particular, consideration should be given to transferring each of those powers that are currently vested in the MOF to the OIC directly.
2. Supervisor	It is recommended that the government and OIC consider: • Repealing or revising Section 45 of the ICA to ensure that the OIC is independent in the administration of its supervisory duties and that its decisions cannot be suspended without appropriate administrative process (e.g., appeal to the court system). • Requiring all commission appointments to be based on the qualification of candidates rather than their positions in other government organizations. Board members appointed on the basis of their positions in other government organizations could face conflict of interest issues between their regular position

Table 2. Thailand: Recommendations to Improve Observance of ICPs (continued)	
Insurance Core Principle	**Recommendations**
	responsibilities and their responsibilities to the commission. • Giving the OIC, rather than the Minister, the authority to set fee (or contribution) levels on industry. While the OIC appears to be adequately resourced at present, vesting authority for fees outside the OIC creates a risk that restrictions on resources could be used to inhibit the operational independence of the supervisory organization. Improving independence of the OIC should be accompanied by measures to increase its formal accountability to government. This should include a more formal and more elaborate accountability framework including, for example, an annual multiyear strategic and operational plan that includes a set of performance measures, and an annual report designed to report on the organization's progress in meeting plan requirements. It is also recommended that in order to more fully meet the requirements of ICP 2.7, the OIC should also consider publishing more information on the insurance sector that it regulates in its annual report and elsewhere.
3. Information Exchange and Confidentiality Requirements	No recommendation.
4. Licensing	It is recommended that OIC continue with its review of licensing requirements and introduce appropriate changes to legislation at its earliest opportunity.
5. Suitability of Persons	It is recommended that: • The OIC include suitability requirements for significant owners and all real person controlling beneficiaries as part of its review of licencing requirements in order to make them consistent with ICP standards. • Consideration be given to developing more specific competency requirements for the heads of some control functions (e.g., risk management, compliance).
6. Changes in Control and Portfolio Transfers	It is recommended that the OIC review its control provisions in conjunction with the licensing and suitability requirements for significant owners and make legislative changes at its earliest opportunity.
7. Corporate Governance	As many of the Corporate governance requirements are principle based, it is recommended that the OIC closely monitor the application of these requirements by insurers over the next supervisory cycle.

Table 2. Thailand: Recommendations to Improve Observance of ICPs (continued)

Insurance Core Principle	Recommendations
8. Risk Management and Internal Controls	As many of the Risk Management and Internal control requirements are principle based, it is recommended that the OIC closely monitor the application of these requirements by insurers over the next supervisory cycle.
9. Supervisory Review and Reporting	It is recommended that the OIC consider: • Documenting and publishing a high-level supervisory framework document that describes the basic principles, high-level concepts, and core processes that it uses to guide its supervision of insurers. • Developing some more specific guidance to help staff and industry in emerging operational risk areas (e.g., cyber risk). This may help to increase transparency, and consistency of supervision in these areas. • Augmenting supervision of COB requirements for insurers and intermediaries over time to include fuller examination of policies, procedures, and practices of insurers and intermediaries once new requirements are assimilated in due course, the introduction of more thematic examinations should also be considered.
10. Corrective and Preventative Action	It is recommended that OIC consider modifying the ladder of intervention to add an additional stage (Stage 5) focused on preparing for the orderly wind-up of the insurer as a gone concern.
11. Enforcement	It is recommended that: • The current legislation does not include the authority for the OIC to take control of non-life insurers. The ability for the supervisor to take control is an important tool needed to minimize losses when an insurer is headed towards insolvency. • The OIC proceed to implement proposed legislation to increase the supervisor's powers over intermediaries including the power to suspend intermediary licences, and issue administrative orders. • Consideration might also be given, in due course, to require insurers or intermediaries to make restitution for harm caused by inappropriate Conduct of Business.
12. Winding-up and Exit from the Market	It is recommended that: • The legislation be amended to clearly establish a point at which it is no longer permissible for an insurer to continue its business (e.g., a CAR of less than 100 percent). This could perhaps be tied to a risk-based solvency requirement for insurers and/or the ladder of intervention.

Table 2. Thailand: Recommendations to Improve Observance of ICPs (continued)

Insurance Core Principle	Recommendations
13. Reinsurance and Other Forms of Risk Transfer	It is recommended that the OIC: • Consider development of criteria to require domestic insurers ceding material amounts of risk to foreign reinsurers to perform ongoing credit risk assessments of the assuming reinsurers as part of ERM, and not rely solely on credit ratings of reinsurers. • Consider development of additional guidance for ceding insurers to use in selecting reinsurers, e.g., in respect of the current requirement that they consider the supervisory regime of assuming reinsurers. • Consider, in advance of any actual need, whether and how the legal framework might be strengthened to improve the security of reinsurance recoverables owed to an insolvent domestic insurer from a foreign reinsurer with no domestic presence.
14. Valuation	It is recommended that: • The OIC clarify guidance for the recognition and derecognition of assets and liabilities, e.g., by expanding the references to TFRS in the notifications to indicate that assets for which any aspect of its valuation method is not specified by the OIC, that such aspect is to be handled according to TFRS.
15. Investment	No recommendation
16. Enterprise Risk Management for Solvency Purposes	It is recommended that: • The OIC work with the industry to enhance the overall performance of insurers in respect of these new requirements as insurers embed them into more effective business practices. • Once the new ORSA reporting has begun, and at least for several reporting cycles thereafter, the OIC should 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.
17. Capital Adequacy	It is recommended that: • The OIC improve upon RBC by providing for operational and catastrophe risks. It is understood that the OIC is moving toward "RBC2" and may also increase the RBC calibration confidence levels from 95 percent to 99 percent VaR over a one-year time horizon, once accounting standard setters have adopted pending new requirements for accounting for insurance contracts (expected to be implemented in Thailand in 2023). This may also provide an opportunity for the OIC to

Table 2. Thailand: Recommendations to Improve Observance of ICPs (continued)	
Insurance Core Principle	**Recommendations**
	study the means and potential impact of adding provisions for operational and catastrophe risks to RBC during the intervening period.
18. Intermediaries	It is recommended that: • Legislation be amended to require intermediaries to disclose the amount and/or the basis of their compensation to clients; • The OIC consider establishing a requirement for professional indemnity insurance for insurance intermediaries operating in its market to ensure that the public is adequately protected by intermediary errors and omissions.
19. Conduct of Business	It is recommended that the authorities: • Provide additional guidance for insurers and intermediaries on how to deal with potential, perceived, or actual conflicts of interest. • Work together with industry associations to develop a notification on the use of client information for cross selling and other ancillary purposes. • Consider development of an industry complaint handling system in due course to collect information from all insurers and brokers on the number of complaints they receive, the types of complaints received and how the complaints were dealt with.
20. Public Disclosure	It is recommended that: • The OIC amend the notifications to address, at a minimum, all the risk and factors covered by the principle statements of ICP 20. • The OIC's reliance on TFRS and audited financial statements as a backstop for its own public disclosure requirements results in a bifurcated disclosure approach; the OIC should consider revising its disclosure requirements to apply more broadly and explicitly to any risk arising from insurance contracts.
21. Countering Fraud in Insurance	It is recommended that: • The OIC avail itself of the data that will soon be available through fraud databases at insurers and consider a centralized fraud database at the OIC to analyze bad actors and their actions across the sector, identify trends, and work with insurers and industry trade organizations to be more proactive in combatting fraud. • The OIC amend the notifications to require that any fraud or act that may have a material impact on an insurer be reported to the OIC on a timely basis, whether or not the insurer may have rectified the matter.

Table 2. Thailand: Recommendations to Improve Observance of ICPs (concluded)

Insurance Core Principle	Recommendations
22. Anti-Money Laundering and Combating the Financing of Terrorism	No recommendation
23. Group-wide Supervision	No recommendation
24. Macroprudential Surveillance and Insurance Supervision	No recommendation
25. Supervisory Cooperation and Coordination	No recommendation.
26. Cross-border Cooperation and Coordination on Crisis Management	It is recommended that: • The OIC develop criteria to identify groups operating in Thailand on a cross-border basis for which the OIC should require a contingency plan to protect Thailand policyholders, both on a gone and going concern basis. • The OIC amend notifications to address, at a minimum, all the information required to be shared by the principle statements of ICP 26.

E. The Authorities' Response to the Assessment

25. **The Office of Insurance Commission, Thailand (OIC) has appreciated the opportunity to have been assessed against the IAIS Insurance Core Principles.** The OIC would also like to express its gratitude to the World Bank, the IMF and the Assessors for their understanding and the fruitful exchange of views throughout the assessment process. The entire process has provided an opportunity for the OIC to thoroughly review the insurance regulatory framework of Thailand and pave ways for further improvement.

26. **The OIC agrees with the Assessors' comments and observations.** The OIC also agrees with the recommendations contained in the report, which will be put into practice over the coming years. The implementation of many of the Assessors' recommendations will help the OIC make insurance supervision even more effective.

27. **The Thai government's policy of supporting the insurance supervisor's independence is apparent and significantly contributes to the maintenance of a fair, safe and stable insurance sector for the benefit and protection of policyholders.** Even though, the OIC has a close relationship with the Government, it has never occurred that the government has interfered with the OIC's policies, operations or the supervision of the insurance sector.

28. **The OIC is currently amending the Non-Life Insurance Act (NLIA) and the Life Insurance Act (LIA) to improve supervisory legislations to align with international standards.** The latest amendments of the NLIA and the LIA, were approved by the National Legislative Assembly in February 2019, increasing the enforcement powers of the OIC over intermediaries. In

addition, there are other NLIA and LIA amendments, approved by the Cabinet in November 2018, addressing other shortcomings such as the OIC 's power to approve changes in control, improvement of preventive and corrective measures, and specification of a clear point at which it is no longer permissible for an insurer to continue its business.

29. With respect to recommendations on new insurance regulations, the OIC is committed to ensure the effectiveness of these requirements by working closely with industry and related stakeholders in order to achieve these objectives and enhance the overall performance of the insurance industry for the benefit and protection of policyholders.

Annex III. Report on the Observance of Standard and Codes: Principles for Financial Market Infrastructures (FMIs)—Summary Assessment[1]

A. Institutional structure and FMIs in Thailand

1. Thailand's payment, clearing, and settlement infrastructure consists of a consolidated set of systemically important FMIs, as well as retail payment systems. The BAHTNET is the interbank payment system and the backbone of the infrastructure in which the ultimate payments of various markets are settled in central bank money. It is operated by the BoT. The retail payment systems settling in BAHTNET are: (i) the Image Cheque Clearing and Archive System (ICAS); (ii) the National Interbank Transaction Management and Exchange Co., Ltd. (NITMX), which is used for bulk payments, PromptPay, and to switch ATMs and local debit cards; (iii) the Processing Center Co., Ltd (PCC); and (iv) the Thai Payment Network (TPN). The Thailand Securities Depository (TSD) is the sole central securities depository and the securities settlement system for government securities, corporate bonds, and equities. The funds leg of the securities trades of all markets are settled in BAHTNET. The Thailand Clearing House (TCH) is the other financial market infrastructure, which 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 Stock Exchange of Thailand (SET).

2. BAHTNET is the real-time gross settlement (RTGS) system, which is owned and operated by the BoT. The BoT has been operating Thailand's large-value payment system, BAHTNET, since May 24, 1995. The BoT has continually been improving BAHTNET to: (i) respond to changing business needs and technology innovation; and (ii) strengthen its observance of international standards. For example, the BoT has implemented a link with the TSD system for Delivery Versus Payment of government bonds, equity, and corporate bonds and a link with the Government Fiscal Management Information System to facilitate government agencies' revenue submission and budget disbursement through BAHTNET. In 2014, a link was established with the U.S. Dollar Clearing House Automated Transfer System (USD CHATS) overseen by the Hong Kong Monetary Authority (HKMA) to eliminate settlement risk. In practice, this link is used by BAHTNET participants as an alternative solution for their correspondent banking arrangements. The BoT is already considering the next generation of the BAHTNET system, such as the introduction of the ISO 20022 standard and a Proof of Concept (POC) for the use of Distributed Ledger Technology (DLT).

3. The TSD is the sole central securities depository (CSD) and securities settlement system (SSS) operating in Thailand and acts as a registrar for common and preferred stocks. It is a fully owned subsidiary of the SET and was established on November 16, 1994, with a registered capital of THB 200 million and commenced operations on January 1, 1995. Government and

[1] The assessment team comprised Dorothee Delort and Gynedi Srinavas (World Bank staff).

corporate securities are immobilized and dematerialized and held in book-entry form with TSD. The TSD acts as the securities registrar and CSD/SSS for corporate securities, while the BoT is the registrar for Government securities with TSD only performing the CSD/SSS function. TSD also provides a Securities Borrowing and Lending (SBL) platform for TCH. It is the International Securities Identification Number (ISIN) issuer for securities in Thailand. As part of its registrar activities, it undertakes corporate actions. It provides a service for payments of dividends electronically through e-dividend service and an investor portal for customers. The TSD is regulated by the Securities Exchange Commission and is governed under the provisions of the Securities Exchange Act, and other relevant general laws such as the Civil and Commercial Code of Thailand.

B. Methodology and Information use for the Assessment

4. **The scope of the assessment includes two main FMIs (BAHTNET and TSD) as well as the authorities (BoT and SEC) in Thailand responsible for regulation, supervision, and oversight of FMIs.** BAHTNET and TSD are assessed against all relevant principles of the PCPMI-IOSCO Principles for Financial Market Infrastructures (PFMI). The authorities, the BoT and the SEC, are assessed using the responsibilities for authorities of FMIs.

5. **The information used in the assessment includes relevant national laws, regulations, rules, and procedures governing the systems and other available material.** Other available material included annual reports; self-assessments; responses to the WB questionnaire; websites from the regulators, overseers, supervisors, operators, and stakeholders; and other relevant documents. In addition, discussions were held with regulators, overseers, and supervisors, i.e., the BoT and SEC. The assessment also benefited from discussions with the SET, TSD, and main stakeholders.

6. **At the request of the World Bank, the FMIs and authorities conducted self-assessments, based on the PFMI.** The assessment is based on information available in November 2018. Information available after November 2018 has not been considered in determining the assessment ratings.

C. Assessment Findings and Recommendations

7. **BAHTNET has a high degree of observance with the Principles for PFMI and is a sound system.** It is 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. All transactions once settled in BAHTNET are deemed final and irrevocable, as well as bankruptcy remote.

8. **The TSD is also largely observant of 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. Delivery-versus-payment one (DvP 1) model is used for the settlement of over-the-

counter (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 leg; 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.

D. Key Findings and Follow-up for BAHTNET

General Organization (Principle 1–3)

9. The BoT has a well-founded, clear, transparent, and enforceable legal and regulatory framework governing the operations of BAHTNET and its participants' rights and obligations. The BoT Act (B.E. 2485, C.E. 1942), the Payment Systems Act (B.E. 2560, C.E. 2017), and the relevant regulations articulate the legal basis for BAHTNET to participants and the public in a clear and understandable way. The rules and regulations are enforceable and in accordance with the relevant acts. The Payment System Act, effective since April 16, 2018, provides an explicit basis for settlement finality (section 9), collateral protection (section 10), and default management (section 8). The BoT Regulation for Electronic Financial Services covers BAHTNET services, ILF, and SRS. The BoT has articulated its legal basis by placing the relevant acts and regulations on its payment systems webpage. The FSAP team suggested to get a legal opinion to verify the enforceability of the netting arrangements in judicial and administrative insolvency proceedings and avoid the unwinding of net positions of retail payment systems. The BoT legal services provided a legal opinion stating that multilateral netting is covered in case of SIPS.

10. The BoT has an explicit commitment towards payment systems stability, as stated in section 7 of the BoT Act. The BAHTNET Services Regulation (B.E. 2549, C.E. 2006), article 2, mentions that BAHTNET reduces risks by settling transactions with finality and irrevocability through Real Time Gross Settlement system. BAHTNET has a sound, comprehensive, well documented, and tested framework for the management of risks. Risk management decisions related to BAHTNET are taken by or reported to the PSC, the ultimate decision-making body. The ERMD provides guidelines for the BAHTNET risk management framework, and the internal Audit department audits the operation of BAHTNET. A consultative committee of participants in BAHTNET, the BAHTNET Advisory Group, has been established. The committee meets at least twice a year to discuss various issues relating to risk management, business procedures, standardization of IT systems, and fees. When the BoT changes its major policies with respect to payment and settlement systems, it must notify the relevant institutions in advance and collect their opinions. The revised policy changes are placed on the website of the BoT and are also notified to the participants. The changes are also reflected in the oversight report placed on the website of the BoT.

11. The BoT has clearly identified the risks borne by BAHTNET and implemented policies, procedures, and controls, which are reviewed annually or in case of a change in the system, to monitor and manage those risks. Other systems, such as the securities settlement system and the retail payment systems, conduct their ultimate settlements in BAHTNET. The BoT recognizes that any operational disruptions in BAHTNET could cause risks to the participants and other FMIs, leading to increased credit and liquidity risks. Operational disruptions in TSD could be a potential source of risk to BAHTNET since the collaterals used for ILF are deposited at the TSD. BAHTNET has developed early warning indicators to monitor potential liquidity issues of its participants and offers participants real-time monitoring tools. The BoT has identified scenarios that may potentially prevent the system from being able to provide its critical operations, and the business continuity plan (BCP) is reviewed annually. It is recommended to further develop coordinated scenarios that deal with the simultaneous disruption of more than one FMI.

Credit and Liquidity Risk Management (Principle 4–7)

12. **While the BoT's exposure to credit risk is limited as it provides intra-day credit to participants on a fully collateralized basis, the collateral framework could be enhanced.** The collateral management system is operated through a link with TSD, which keeps the securities that the BoT accepts as collateral. The assets that are accepted as collateral are subject to a daily mark-to-market, haircuts are determined[2] by calculating value at risk at a 95 percent level of confidence, and the haircut policy is reviewed on a yearly basis. Procyclicality is limited by the design of the haircut methodology.[3] However, BAHTNET accepts as collateral bonds or debt securities issued by SOEs and SFIs, and there is currently no feature to verify that participants do not post their own debt or equity securities as collateral. The BAHTNET doesn't have concentration limits to avoid concentrated holdings of certain assets where this would impair the ability to liquidate such assets quickly without significant adverse price effects. There is a need to review several aspects of the collateral framework, to include a rule preventing participants to pledge their own securities as collateral, to implement concentration limits, and to have annual independent validation of the haircut procedures. In addition, it is recommended to explore what would happen to assets held by BAHTNET in case of non-availability or insolvency of TSD and that BAHTNET addresses it appropriately as part of its risk management framework.

13. **Liquidity risk in the BAHTNET system is minimized due to the provision of an ILF by the BoT to the participants.** BAHTNET provides several efficient tools to monitor and manage liquidity, such as queuing mechanisms, gridlock resolution, Securities Requirements for Settlement of net settlement files, and throughput guidelines. The differential pricing fees mechanism also contributes to smoothening payment flows throughout the operating hours of BAHTNET. It is suggested to review the relevance of the requirement that larger participants should post at the beginning of the day collateral representing 10 percent of the average value of their transactions in BAHTNET. The reason for this recommendation is that such a requirement would not be needed from a risk management point of view if BAHTNET had an automated collateral management system, and it might represent an opportunity cost for the participants.

[2] By the Enterprise Risk Management Department.

[3] The data cover a long historical time span that includes several periods of stress.

Settlement (Principle 8–9)

14. **Settlement of payment transfers in BAHTNET is achieved in real-time and in central bank money, and payments once settled are final and irrevocable.** The BAHTNET provides for finality of settlement. Articles 40 and 41 of the BAHTNET Regulation explicitly define the point at which settlement is deemed final and irrevocable as the time when funds are debited from the sending institution's account and credited to the receiving institution's account. The BAHTNET Regulation also clearly defines in article 39 that an unexecuted transfer order can be canceled by a participant upon request to BAHTNET and with the consent of the beneficiary institution. The BAHTNET prohibits the unilateral revocation of accepted and unsettled orders.

Exchange-of-Value Settlement Systems (Principle 12)

15. **Delivery versus payment (DVP) and payment versus payment (PVP) settlement mechanisms are being used for the settlement of securities and foreign exchange transactions respectively in BAHTNET.** There are two exchange-of-value settlements in BAHTNET, the DVP link between BAHTNET and TSD for government securities and equity settlement and the PVP link between BAHTNET and the USD CHATS regulated and overseen by HKMA. Securities traded on the exchange are settled using a DVP model 3[4] arrangement, OTC securities on a DVP model 1.[5] For the Thai Baht vs. U.S. dollar transactions, the settlement in U.S. dollar is done in commercial bank money and the finality of the linked obligations is achieved simultaneously upon completion of settlement in BAHTNET and USD CHATS. The adoption of these forms of settlement has led to the elimination of principal risk.

Default Management (Principle 13)

16. **The BoT has clear rules and procedures defining a default and is well prepared to implement the default rules and procedures.** These rules are reflected in the Payment Systems Act (sections 8 and 10) and the BoT "Procedures for members of highly important payments system to enter business rehabilitation or bankruptcy proceedings." These rules and procedures are publicly available on the BoT webpage.

General Business and Operational Risk Management (Principle 15–17)

17. **The BoT has developed and implemented a comprehensive operational risk management framework, covering technology, risk factors, human resources, monitoring, control, and periodic testing.** The PBD, the BAHTNET operator, conducts Control Self-Assessments (CSA) focusing on operational risk and reports to the ERMD. It has a recovery time objective (RTO) of two hours, with a recovery point objective of zero data loss, and the target system availability is set at 99.9 percent for 2018. The BoT has a secondary site with real time data replication and is setting

[4] Securities and funds are settled on a net basis.

[5] Securities and funds are settled on a gross basis.

up a third site with a different geographical risk profile.[6] The BoT has developed KRIs to monitor risks, assess their severity, and assist in response and prevention.

18. The BAHTNET BCP is developed in line with the relevant regulations and deals with adequate potential scenarios.[7] These are found to be adequate in tackling operational risk and ensuring the continuity of operations of BAHTNET. Even though annual market-wide testing is organized, it is suggested to adopt a holistic approach taking into account a disaster scenario when the operations of more than one FMI are disrupted. Custody risk is adequately managed since BAHTNET doesn't invest the collateral and holds it at TSD, an FMI regulated and supervised by SEC.

19. The BoT applies the CPMI-IOSCO Guidance on cyber resilience for financial market infrastructures (June 2016) to BAHTNET to enhance its cyber resilience. The five primary risk management categories and three overarching components[8] have been incorporated in BAHTNET's cyber resilience framework, including with a Cyber Security Incident Response Plan (CSIRP), and a strong collaboration with other relevant agencies (such as ThaiCERT) and EMEAP central banks. The BoT conducts CSIRP testing periodically and has a team dedicated to cyber threat intelligence, vulnerability assessments and penetration tests are run by external entities on an annual basis.

Access (Principle 18–19)

20. The 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. Access criteria are detailed in BAHTNET Regulations and the BoT Notifications and cover legal, financial, and operational requirements; they are justified and commensurate with BAHTNET's specific risks. There are only direct participants[9] in BAHTNET, bound by the rules of the system.

Efficiency (Principle 21, 22)

21. The operational objectives stipulated in the relevant regulations on BAHTNET have been fulfilled. The BAHTNET provides real-time gross settlement in central bank money, is operationally sound, and facilitates the settlement of other major retail payments. The BAHTNET is operated efficiently, observing a cost recovery pricing policy. The system is designed to meet the needs of the participants and the financial markets, and participants are consulted on a regular basis through the BAHTNET Advisory Group, annual satisfaction surveys, trainings, user acceptance, and industry wide tests.

---

[6] The BoT also has a procedure for BAHTNET Offline in case all three sites would be unavailable.

[7] Natural disaster, riot, epidemic, emergency announce of special holiday, BAHTNET total system failure, cyber-attack.

[8] The risk management categories are: governance; identification; protection; detection; and response and recovery. The overarching components are: testing; situational awareness; and learning and evolving.

[9] Some of the direct participants are called associate if they don't have their own workstation.

22. The BAHTNET uses internationally accepted communication procedures and standards. BAHTNET uses two networks, the SWIFT Network and BoTNET/X. It also uses two types of messages, SWIFT Fin messages and BAHTNET XML standards, to allow non-SWIFT-members participants to communicate via BAHTNET web service. The initiative to migrate to ISO 20022 message standards is considered for the next generation of the system.

Transparency (Principle 23)

23. The BoT promotes a transparent disclosure framework for BAHTNET. BAHTNET regulation and its sub-regulations are disclosed through the website of the BoT, and, to facilitate participants' understanding of BAHTNET, the BoT provides them with manuals and guidebooks. The BoT uses the disclosure framework published by the CPSS-IOSCO in December 2012.

E. Key Findings and Follow up for TSD

General organization (Principle 1–3)

24. The legal basis for the TSD is generally sound and enforceable. The SEA and Tor.Thor[10] 32/2559, TSD Regulations Chapters 100–800, in conjunction with the relevant provisions of the Civil Code and Commercial Code, provide for: enforceability of transactions; protection of customer assets in the event of the bankruptcy of the depositor; immobilization and dematerialization of securities; settlement finality; DVP for the settlement of securities transactions; and bankruptcy remoteness of collateral. There's a high degree of certainty that the TSD regulations, procedures, and contracts are enforceable in the Thai jurisdiction.

25. There is room to improve the legal framework to extend protection to the securities balances of depositors and customers held in TSD's name in the event of its bankruptcy. There is room to improve the legal framework in order to evidently afford protection to the securities balances of participants and investors held in TSD's name, in the event of its bankruptcy. Under section 225 of the SEA, when TSD accepts the deposit of securities, it records the securities balance under its own name and holds such securities balances for the depositor or for any customer. The fate of these securities balances and their protection and treatment under bankruptcy court proceedings in the event of TSD going bankrupt would need to be established with greater clarity. An expert legal review of the provisions in the SEA and other relevant laws covering the above aspects should be undertaken and suitable amendments to the existing statutes may be carried out based on the outcome of such a review." The TSD may also obtain expert legal opinion as to whether the concept of netting has a sound statutory basis in the existent legal framework. Based on such review, amendments may be introduced to provide a comprehensive statutory basis for netting.

26. The governance arrangements of the TSD are transparent, and the roles and responsibilities of its board and management are clearly described and publicly available. Two

[10] Regulation issued by Capital Market Supervisory Board of SECSET.

independent non-executive directors with capital market expertise are appointed to the board. The TSD board submits all approvals to the SEC directly and is independent of the SET board in this respect. The TSD board reviews and approves the risk management framework of the TSD on an annual basis. The TSD Board should seek a set of documented guidelines for operationalizing the recovery and orderly wind-down plan. These guidelines should also include measures to mitigate general business and investment risk. The guidelines should be reviewed and endorsed by the TSD Board. The governance arrangements 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.

27. The risk management framework requires business departments of TSD to identify, monitor, and manage their risks as outlined in the enterprise-wide risk management framework of the SET. In addition to this bottom-up approach, the TSD board decides on risk management limits. The risk management framework is reviewed on an annual basis by the TSD board and the risk management department (RMD) of the SET reports to it on a quarterly basis. Internal audit of the SET assesses the implementation of the risk management framework and reports to the TSD board. The risk management framework scope should be widened to include a greater focus on recovery and orderly wind-down plans, general business and investment risk. The risk management framework explicitly mentions strategic, operational, and compliance risks and lays down a set of measures to mitigate these. While there is a high-level recovery and wind-down plan, detailed effective recovery tools in line with the guidance provided by the standard setters (the CPMI and IOSCO) should be adopted. A set of documented operational guidelines should be drawn up including arrangements that ensure critical services continue to be provided, and that the winding down is carried out in an orderly manner including for instance, transferring critical operations and services to an alternate entity. Such a plan should be endorsed by the TSD board, including measures to mitigate general business and investment risk and should be tested on a periodical basis. The lack of such a plan is an issue of concern, given that TSD is the sole CSD and SSS in Thailand.

Credit and Liquidity Risk Management (Principle 4–7)

28. The TSD is not exposed to any credit and liquidity risks in its role as an SSS and CSD. In the settlement of OTC bond market trades, DVP model 1 is used. In the case of exchange trades securities settlement, TSD carries out the securities settlement on a free-of-payment basis, with TCH as the CCP ensuring that the final settlement of the securities occurs only after the funds leg is settled. TSD as a CSD does not allow any debit balances in the securities accounts and hence mitigates credit risk. TSD is further not exposed to any financial risks in the securities borrowing and lending program, as it is only a service provider with TCH undertaking the securities borrowing and lending program with the market participants on this platform.

Settlement (Principle 8–10)

29. **Securities settlements are final as soon as the settlement account has been debited or credited.** The settlement occurs in real time during the settlement day in respect of OTC bond trades and at a designated time in respect of exchange trades. The SEA, ToR.Thor 32/2559, and TSD regulations ensure the finality of settlement against any insolvency proceedings following the settlement.

30. **The TSD conducts its money settlements for the OTC bonds market in central bank money.** Investors are provided with physical securities on demand and after a due process. Securities can, however, be cleared and settled only through book-entry transfer with the physical securities having to be dematerialised.

Central Securities Depositories and Exchange-of-Value Settlement Systems (Principle 11, 12)

31. **Custody risk is mitigated by several factors.** These include: sound accounting processes, end-of-day reconciliation of balances, a comprehensive system of procedures for creation and deletion of securities in the CSD, prohibiting overdrafts and debit balances in securities accounts, internal audit examination, and an overall SET group insurance also covering custody risk. The TSD eliminates principal risk by applying the DVP 1 model arrangement for the settlement of the OTC bond market trades and by ensuring conditional final settlement of one obligation upon the final settlement of the other.

Default Management (Principle 13, 14)

32. **The TSD is not exposed to any financial default risk of its depositors in its functioning.** Operational default of a depositor is mitigated through the measures outlined in its business continuity plans. A depositor can be terminated or suspended by TSD after following due processes as laid down in the SEA and TSD regulations, which are transparent and publicly available.

General Business and Operational Risk Management (Principle 15–17)

33. **The TSD has a system in place to identify potential general business risks.** Quarterly progress reports are prepared on TSD's businesses, and financial performance are submitted to the TSD board for its review and monitoring. Progress reports on roll-out of new products are also submitted. The TSD has sufficient liquid net assets funded by equity so that it can continue operations and services as a going concern if it incurs general business losses. Assets held to cover general business risk are of sufficient quality and liquidity. While there is a high-level recovery and wind-down plan, a set of documented operational guidelines should be drawn up linking the size of its liquid net assets and the length of time required to maintain its critical operations and services. Such guidelines should also include detailed measures for raising and infusing additional capital. The lack of such a plan is an issue of concern, given that TSD is the sole CSD and SSS in Thailand. The plan should be endorsed by the TSD board and tested on a periodical basis.

34. TSD's own assets are invested in high-quality liquid assets by the Investment Committee of the SET board which undertakes this task on behalf of SET and its subsidiaries. However, these investments are held in the name of SET and not in TSD's name. 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, such assets of TSD should be clearly segregated from the securities balances of its depositors and customers. In addition, TSD should draw up a detailed plan outlining its ability to quickly liquidate its investments with little, if any, adverse price effect and test the same on a periodic basis.

35. The TSD has an operational risk management framework in place consisting of systems, policies, procedures, and controls to identify, monitor, and manage operational risks. This is made part of the enterprise-wide risk management (ERM) framework of the SET Group with the RMD of the SET responsible for its implementation. The RMD of SET reports to the TSD board and to the risk management committee of the SET Board. Its procedures ensure scalable capacity adequate to handle increasing volumes. Operational reliability targets have been set at 99.95 percent of system availability. ISO 27001 for IT security and ISO 23001 for business continuity management have been implemented. Policies for physical and information security policies are in place. A BCP is in place, as well as a secondary site. The BCP is tested on an annual basis with all relevant stakeholders, including the BoT and TCH. The RTO is two hours. Cybersecurity measures include carrying out penetration tests. TSD is adopting the best practices outlined in the CPMI-IOSCO Report "Guidance on cyber resilience for financial market infrastructures."

36. It is recommended to include specific scenarios and carry out periodic tests to ensure completion of securities settlement taking into account interdependencies between TSD, BAHTNET, and TCH. TSD should identify direct and indirect effects on its ability to process and settle transactions in the normal course of business and manage risks that stem from an external operational failure of connected FMIs. These scenarios should also capture the effects transmitted through its depositors, which may be participants in BAHTNET and TCH. TSD should also identify, monitor, and manage the risks it faces from and poses to BAHTNET and TCH.

Access (Principle 18–20)

37. The access criteria of the TSD allow for fair and open access to its services based on reasonable risk-related participation requirements. The TSD has publicly disclosed its access criteria and the procedures facilitating the suspension and orderly exit of a depositor that no longer meets the participation requirements. Each individual depositor's performance and compliance is monitored on an ongoing basis by a designated TSD staff member.

38. TSD has a link with TCH to facilitate the settlement of exchange-traded securities. TSD is not exposed to any credit or liquidity risk due to the link arrangement. Link-related operational risks are mitigated through regular IT auditing to monitor compliance and subjecting the link arrangement to BCP and DR testing.

Efficiency (Principle 21, 22)

39. The TSD has arrangements in place to consult its depositors on a regular basis and address their needs in the design of its services. Depositors are consulted before making any changes either to the policies or to the systems through focus group meetings, including the fees for TSD services. A customer satisfaction survey is also carried out periodically. The TSD board monitors on a quarterly basis the implementation of the business plan, incidents and their management, and operational reliability of the systems.

40. The TSD uses both domestic and internationally accepted communication procedures and standards to ensure effective communication between it and its depositors. These include: (i) web browser via HTTPS through a secured network; (ii) API messaging allowing depositors to send service instructions to TSD and receive responses; and (iii) SWIFT messages for confirmation and notification for OTC bond settlement and corporate actions information. The ISIN standards are used for identification of securities.

Transparency (Principle 23, 24)

41. The TSD publicly discloses its rules, regulations, and fee structure. System design details are shared with the depositors in user manuals. The TSD in August 2018 updated its responses to the CPMI-IOSCO Disclosure Framework for FMIs, which enables depositors to assess the risks they incur by participating in the CSD/SSS. The TSD website also contains statistics. The TSD provides training and information to its depositors. Fees are also publicly disclosed.

F. Recommendations for BAHTNET

Table 1. Thailand: List of Prioritized Recommendations

Principle	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
5	BAHTNET accepts as collateral bonds or debt securities issued by SOEs and SFIs, and there is currently no feature to verify that participants do not post their own debt or equity securities as collateral.	There is a need to include in BAHTNET a rule preventing participants from pledging their own securities as collateral.	BoT	Short-term, High-priority
5	BAHTNET doesn't have concentration limits to avoid concentrated holdings of certain	There is a need to implement concentration limits in BAHTNET.	BoT	Short-term, High-priority

Table 1. Thailand: List of Prioritized Recommendations (concluded)

Principle	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
5	assets where this would impair the ability to liquidate such assets quickly without significant adverse price effects.			
5	Haircuts are determined by ERMD by calculating VaR at a 95 percent confidence level. The data cover a long historical time span that includes several stressed periods. Volatilities of collateral values are calculated as inputs of the haircuts, based on the number of days required for liquidating the collaterals. The BoT continuously reviews volatilities of collaterals' values and adjusts the haircuts to reflect any new stressed period.	There is a need for an independent review and test of the haircut methodology.	BoT	Short-term, Medium-priority
7	Larger participants have to post at the beginning of the day collateral representing 10 percent of the average value of their transactions in BAHTNET because there is no automated collateral management system.	It is suggested to develop an automated collateral management system where the account balance would trigger the mobilization of collateral, to limit the opportunity cost for participants.	BoT	Medium-term, Medium-priority
5	The bankruptcy remoteness of BAHTNET collateral securities balances held in TSD's name could be questioned: when TSD accepts the deposit of securities, it records the securities balance under its own name and holds such securities balances for the depositor or for any customer who is the beneficial owner of securities.	It is recommended to explore what would happen to assets held by BAHTNET in case of default of TSD.	BoT, SEC	Medium-priority, Medium-term
17	There are strong interdependencies between BAHTNET, TSD, and TCH, which should be incorporated more in the BCP scenarios.	It is suggested to adopt a holistic approach considering various disaster scenarios where the operations of more than one FMI would be disrupted.	BoT, SEC	Medium-priority, Short-term

G. Recommendations for TSD

Table 2. Thailand: List of Prioritized Recommendations

Principle	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
1	In the event of TSD going bankrupt, there are no statutory provisions protecting the securities balances of participants and investors as all securities are held in TSD's name.	Introduce specific provisions in the SEA and other relvant laws to afford protection of depositors' and customers' securities balances in the event of TSD going bankrupt.	TSD, SEC, MoF, Ministry of Law	Medium-term, High-priority
1	It is not very evident how the beneficial ownership rights of securities balances belonging to depositors and investors are clearly established in the extant legal framework.	Undertake an expert legal review of the provisions in the SEA and other relevant laws and introduce suitable amendments based on the review.	TSD, SEC, MoF, Ministry of Law	Medium-term, High-priority
1	Clarity on legal basis of netting is required	Conduct an expert legal review of extant statutory provisions and introduce suitable amendments if required based on the review.	TSD, SEC, Ministry of Finance, Ministry of Law	Medium-term, High-priority
2	TSD board undertakes an annual review of its performance, which, is not submitted to the regulator.	TSD board to submit annual review of board's performance to the SEC for its review and monitoring.	TSD, SEC	Short-term, Medium-priority
3, 15	Risk management framework does not explicitly cover general business and investment risk; detailed effective recovery tools, documented operational guidelines, and measures for raising and infusing additional capital are not part of the high-level recovery and wind-down plan.	(i) Include a greater focus on recovery and orderly wind-down plans; and include measures to mitigate general business and investment risk in the scope of the risk management framework. (ii) Adopt and apply the set of recovery tools provided by the standard setters. (iii) Draw up a set of documented operational guidelines linking the size of liquid net assets and the	TSD, SEC	Short-term, High-priority

Table 2. Thailand: List of Prioritized Recommendations				
Principle	**Issues of Concern and Other Gaps or Shortcomings**	**Recommended Action**	**Relevant Parties**	**Comments and Priority**
		length of time required to maintain critical operations and services. (iv) Include detailed measures for raising and infusing additional capital. (v) Revised risk management framework incorporating the above elements to be reviewed and approved by TSD board.		
16	TSD's investments are held in the name of SET and not in its name.	(i) TSD should hold the investments of its assets in its own name to ensure that proper segregation of investments is carried out and its assets are not used for setting off claims of its parent. (ii) TSD assets should be clearly segregated from the securities balances of its depositors and customers. (iii) TSD should draw up a detailed plan outlining its ability to quickly liquidate its investments with little, if any, adverse price effect and test the same on a periodic basis. (iv) The liquidation plan should be reviewed and approved by the TSD board.	TSD	Short-term, High-priority
17	BCP does not appear to include contingency plans to complete securities settlement transaction in the event of operational failures of connected FMIs, and common participants.	(i) TSD should identify both direct and indirect effects on its ability to process and settle transactions on account of an external operational failure of connected FMIs. (ii) Capture depositor failure effects, which may be participants in all three FMIs. (iii) TSD should also identify, monitor, and manage the risks it faces from and poses to BAHTNET and TCH.	TSD, SEC, BoT	Short-term, High-priority

H. Recommendations for Authorities

Table 3. Thailand: List of Prioritized Recommendations

Responsibility	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
B	Onsite examinations of TSD by SEC are conducted once every three years.	Increase the frequency of onsite examinations of TSD to once in two years; conduct ad-hoc inspections on need basis.	SEC	Short-term, High-priority
B	SEC does not have a practice of reviewing the performance of the TSD board.	SEC to start the process of reviewing the annual performance report of the TSD board to ensure the Board is fulfilling its mandate.	SEC	Short-term, High-priority
B	FMIs are not carrying out periodical self-assessments.	Authorities to advise the FMIs to undertake periodic self-assessments and review them.	SEC	Medium-term, medium-priority

I. Key Findings and Follow-Up for Authorities

42. **BAHTNET is subject to appropriate and effective regulation, supervision, and oversight by the BoT.** In 2013, the PSC, under the BoT Act mandate, identified BAHTNET as a Systemically Important Payment Systems (SIPS) and started using the PFMI to oversee BAHTNET. The Payment System Act clearly defined and publicly disclosed the criteria used to identify important payment systems including SIPS, and BAHTNET was designated as a SIPS subject to the regulation and oversight of BoT. The BoT Act and the Payment System Act give the BoT the powers to collect information, perform assessments, induce change, or enforce corrective action in order to effectively carry out its responsibilities.

43. **The powers of the SEC are laid down in the SEA and the Derivatives Act (DA) and are considered sufficient.** Amendments to the SEA since the previous FSAP have enhanced the powers of the SEC to regulate and supervise TSD and TCH. The TCH and TSD are required to report to the SEC on any material changes in their computer systems and in their financial conditions relating to clearing, settlement, and depository services to ensure that the overall business operations of their services are conducted in a safe and efficient manner. Powers to conduct onsite examinations and impose sanctions are spelt out in the statutes and the regulations—the SEA, DA, and Tor.Thor.32/2559. The staff and funding resources of the SEC are adequate to discharge its responsibilities as a supervisor and regulator.

44. **It is recommended that SEC review and increase the frequency of its onsite examinations to two years from three years and undertake ad-hoc onsite examinations as**

necessary. The SEC should also advise the FMIs to undertake periodic self-assessments against all relevant principles as part of a comprehensive review of an FMI's safety and efficiency, or when major policy and system changes or new products and services are introduced. These self-assessments should be reviewed by SEC.

45. The authorities disclose the main laws and policies on FMIs. The BoT discloses its policies publicly with respect to BAHTNET. The SEC's objectives are publicly disclosed on its website. The information is made available in English in addition to Thai. Both authorities have publicly stated their support and adoption of PFMI in their public policy statements.

46. The BoT and SEC appropriately cooperate in the regulation, supervision, and oversight of the FMIs in Thailand. The authorities have executed a MoU. The MoU acknowledges each authority's statutory responsibilities towards the oversight, supervision, and regulation of the FMIs under their respective jurisdictions. The MoU outlines the sharing of information between the authorities on issues relating to the safe and efficient functioning of the FMIs. The MoU facilitates (i) communication between the two regulators on policies and development plans with respect to BAHTNET, TCH, and TSD; (ii) legal, regulatory, and system changes which may impact the market or other FMIs; (iii) monitoring of financial risk related to a participant's liquidity problem; (iv) planning onsite assessments and sharing of information; (v) incident handling and crisis management to control systemic risk resulting from interdependencies between the FMIs; and (vi) system-wide BCP testing covering all the FMIs. The cooperation includes formal meetings which are usually held on an annual basis, supplemented by ad-hoc meetings in urgent situations such as market stress or system failure that could impact other FMIs. Contact persons of SEC and BoT are identified.

J. Authorities' Response to the Assessment

47. Bank of Thailand (BoT) and Securities and Exchange Commission (SEC) appreciate the comprehensive and positive assessments on Thailand's implementation on PFMI and the constructive dialogues during the FSAP mission. We would like to express our appreciation to PFMI FSAP assessors for the assessment. The assessment provided us with opportunity to review Thailand's regulatory and supervisory framework in respect of FMIs, and allowed for identification of area for further improvement.

48. Regarding BAHTNET assessment, the BoT has taken into consideration the assessors' recommendations on collateral framework to include in BAHTNET a rule preventing participants from pledging their own securities as collateral and to implement concentration limits in BAHTNET. Currently, we are in the process of improving collateral framework as suggested to prevent specific wrong-way risk and establish the concentration limits. By taking into account the risk profile of all eligible asset types accepted in BAHTNET, the internal discussion with Money Market Department and Risk Management Department concludes that guaranteed SOE bonds are equivalent to government bond in terms of risk. Therefore, it comes to a conclusion that the concentration limits will be implemented for non-guaranteed SOE bonds only. However, for other asset types, we will closely monitor and may consider establishing concentration limits if they are likely to create overall concentration risk. Moreover, we will establish the methodology validation team to perform an independent review and test of the haircut methodology.

49. The assessors suggested the BoT to develop an automated collateral management system where the account balance would trigger the mobilization of collateral, to limit the opportunity cost for participants. We will conduct an impact analysis on this change and consult further with related stakeholders. The analysis will take into account the impact on both the BoT and participants in terms of opportunity cost and risk management.

50. To further strengthen the business continuity plan (BCP), we have discussed about operating from the backup sites during the normal working day to fulfill the assessors' suggestion to adopt a holistic approach considering various disaster scenarios where the operations of more than one FMI would be disrupted. The scenario will include usage of the offline procedure for higher resiliency in the future.

51. The BoT welcomes the assessors' recommendations, which are in line with our action plan, such as enhancing collateral framework, and strengthening the BCP for FMIs. We aim to continue to strengthen our supervisory framework in line with international best practice, and to further promote stability and development of the FMI in Thailand.

52. Regarding TSD assessment, the SEC has been continuously developed and put in place to benchmarking itself against international standards, and best practices. To comply with the recommendation from FSAP in 2008, the SEC has undertaken several actions to strengthen the legal basis, improve regulations and operations to meet the SSS requirements. Since the PFMI issued in April, 2012, the SEC has reviewed its legislative framework, changed the regulations, and published policies to comply with the PFMI, and also engaged TCH and TSD in reviewing area where PFMI has imposed new or strengthened requirements; and where appropriate to consider improvements to TSD and TCH risk management policies, governance arrangement, and technology systems.

53. The SEC acknowledges the overall assessment that TSD is broadly compliant with the PFMI, and operates in a sound manner. The SEC thoroughly considers all useful recommendations made by the assessors as to reinforce TSD operational policies and practices, and further improvement of SEC responsibilities. The action plans in response to the recommendations have been developed to ensure highly legal basis, and successive implementation to the PFMI requirements.

54. For the specific area of netting arrangement, the assessors recommended to obtain expert legal opinion as to whether the concept of netting has a sound statutory basis in the existent legal framework. We would like to note for clarification that the Civil and Commercial Code and Bankruptcy Act provides legal support of bilateral netting transaction, and the SEA provides enforceable and legal binding on novation process or counterparty obligation of the clearinghouse in accordance with the clearinghouse's rules. Therefore, there is high degree of legal certainty for bilateral netting arrangement, which has currently used by TCH for clearing the transactions traded on SET. If, in the future, clearinghouses in Thailand want to use multilateral netting, then expert legal opinion should be obtained before implementation.

Annex IV. Report on the Observance of Standard and Codes: IOSCO Objectives and Principles of Securities Regulation—Summary Assessment[1]

A. Summary

1. **The SEC has significantly improved its level of implementation of the IOSCO Objectives and Principles of Securities Regulation.** Amendments to the SEA (i) empowered the SEC to bring and enforce civil actions for violations, (ii) improved the rights of minority shareholders, (iii) strengthened protection of investor assets, and (iv) provided the SEC with greater authority to cooperate with foreign regulators. Moreover, as a result of a recent decision by the Thai Office of Auditor General, State Owned enterprises (SOEs) listed on the SET will be audited by licensed auditors rather than by the Thai Office of the Auditor General, enhancing the credibility of such audits. Following a recent SEA amendment that provides the SEC with expanded authority, the SEC should undertake a comprehensive review of the SET rules. The SEA should be further amended to enable the SEC to institute civil proceedings for any violation of the SEA or SEC regulations and to enhance the SEC's operational independence. The SEC should also direct the Thai Bond Market Association (TBMA) to revise its rules on pre-trade quotes and require same-day indicative quotes, and the authorities should develop a roadmap to implement mandatory centralized clearing of OTC derivatives contracts.

B. Introduction

2. **This assessment was conducted in February 2019 as part of the FSAP conducted jointly by the IMF and the World Bank.** The previous IOSCO assessment of Thailand was conducted in 2009.

C. Information and Methodology Used for Assessment

3. **This assessment applies the current IOSCO Principles as approved in 2010 and the IOSCO Methodology dated May 2017.** This assessment utilized the detailed self-assessment prepared by the SEC, and the extensive supporting documents voluntarily provided by the SEC. The assessors also examined in detail applicable Thai law. This includes the Securities Exchange Act of 1992, as amended ("SEA"), the Derivatives Act of 2003 ("DA"), the Trust for Transactions in Capital Market Act ("Trust Act") the Public Companies Act ("PCA") and several government-wide laws that govern different aspects of the SEC processes. We also examined several Thai Royal Decrees, and numerous regulations, guidelines and interpretative statements issued by the SEC.

4. **The assessors benefited from information from several sources.** This assessment was supplemented and greatly enhanced by detailed meetings with the SEC staff to discuss each

[1] The assessment team comprised Jonathan Katz and Vicente Lazen (World Bank external experts).

principle, to clarify information contained in the self-assessment and to examine in greater depth important questions identified in the IOSCO Methodology. The assessors also met with staff from the Bank of Thailand, the Fiscal Policy Office of the Ministry of Finance and senior executives of the SET, including representatives of its subsidiaries, the Thailand Futures Exchange (TFEX) and the TSD. The assessors also benefitted greatly from an extensive series of meetings with representatives of every sector of the Thailand capital market.

5. **The assessors wish to thank the staff of the SEC who prepared the well-written and thorough self-assessment**. The quality of this self-assessment materials was outstanding and, in general terms, the assistance of the SEC along the entire project was a key factor in the success of this initiative.

D. Institutional and Market Structure—Overview

Regulatory Structure

6. **The SEC is the primary regulator of Thailand's capital market.** The SEA, which has been amended six times, is the organic statute that provides the SEC, created in 1992, with comprehensive authority over all segments of the capital markets. The statute focuses on functional areas. As such the SEC has regulatory authority over banks, insurance companies and other companies engaged in securities-related business, such as underwriting, asset management, and retail sales.

7. **The Derivatives Act of 2003 created a legal structure for derivatives trading in Thailand under the regulation of the SEC.** The BoT has regulatory authority over OTC trading in currency and interest rate contracts.

8. **A variety of other laws provide the SEC with ancillary authority.** These include The Royal Enactment on Special Purpose Jurisdiction Persons for Securitization B.E. 2540 (1997), the Public Limited Companies Act, B.E. 2535 (1992) and the Licensing Facilitation Act, B.E. 2558 (2015). The SEC is subject to general governmental oversight by the MoF, which retains final authority over the issuance and revocation of licenses by the SEC, and the issuance of significant regulations (referred to as Ministerial Regulations).

9. **The SET was authorized by the SEA**. Historically, the SET pre-dated the legislation and upon the enactment of the SEA the legal authorization of SET as the securities exchange of Thailand has been reconfirmed and as this law does not provide for additional securities exchanges, under the SEA the SET is the sole securities exchange in Thailand. According to the SEA, the SEC has broad regulatory authority over companies listed on the SET, licensed securities companies that are SET members, and surveillance and operation of its market, including the authority to suspend trading, delist companies, halt trading in specific stocks or the entire market, and take disciplinary action against member firms and employees. A Memorandum of Understanding between the SEC and SET provides guidance on performance of duties and the SEC oversight authority. The DA provides a comparable self-regulatory framework for the TFEX.

10. The Thai Bond Market Association (TBMA) was established in 2005 as a trade association of securities companies under the Trade Association Act and, under the SEA, as an association related to the securities business. The functions of the TBMA, carried out in the OTC bond market, are to supervise its members, provide a database of all trades done by its members, act as a pricing agency in the debt securities market, and serve an industry forum for bond market participants. The SEC has delegated to the TBMA the duties and responsibilities to perform monitoring and surveillance to ensure that all trading activities comply with relevant laws and regulation and to supervise its members. In case of detecting unfair trading practices, TBMA is authorized by the SEC to carry out enforcement procedures.

Institutional and Market Structure

11. The Thai securities market is fairly developed in terms of completeness and depth and 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 (US$541 billion), 107 percent of GDP, comparing favorably with the rest of ASEAN markets and during the past several years initial public offerings have averaged 20 per-year. The asset management is a substantial and growing component of the capital market. The mutual fund industry has experienced a strong growth, with more than 25 asset managers and 1,382 mutual funds with total assets of THB 4.68 trillion (US$150 billion). In the institutional aspect, the Thai market has developed industry-led associations, some of them self-regulatory organizations (SROs), providing industry guidance, public education, training for industry participants, data gathering and the execution of self-regulatory and supervisory tasks. Some of the pending issues in terms of market development are the participation of the population in the securities market and the diversification of the bond offerings to longer tenors.

12. The SET Group operates all of the organized trading platforms and provides post trade services. The group's core entity is the SET, a special juristic person under the SEA governed by a board of directors elected by member brokers or appointed by the SEC. The SET has two boards: SET and MAI (which focuses on smaller, fast-growing companies with minimum paid-up capital of THB 50 million). It owns also the Thailand Futures Exchange (TFEX), the TSD, and the TCH, which provides clearing service to securities and derivatives traded in the exchanges.

13. There are 704 companies listed on the SET, including 545 on the main board and 159 on the MAI (2018). The total market cap of SET-listed companies was US$500 billion (2018). The SET has the highest daily trading value of ASEAN markets, US$1.7 billion (2018). 35 SET listed companies are included in the MSCI Standard Index, the largest number of an ASEAN country (Table 1).

14. Initial public offerings have been strong in Thailand for several years when compared with other ASEAN nations. In 2017 there were 22 new SET listings, 17 MAI listing and 6 REITS. New listings in 2018 declined to 8 on the SET, 11 on the MAI and 3 REITs.

Table 1. Thailand: SET Market Information—Equities					
	2014	**2015**	**2016**	**2017**	**2018**
Number of listed companies	613	640	656	688	704
Total market capitalization (SET and mai) *(billion THB and USD)*	13,715.68	11,994.23	14,783.60	17,273.88	16,434.25 (USD 500)
Total market capitalization of top ten listings *(billion THB and USD)*	5,291.97	4,183.51	5,211.79	6,298.95	6,573.80 (USD 199)
Annual turnover value – *(billion THB and USD)*	10,463.27	10,044.49	11,805.40	11,318.68	14,130.21 (USD 418)
Average daily turnover value *(billion THB and USD)*	42.71	41.34	43.38	46.39	57.6 (USD 1.7)
Source: SEC.					

15. The Thailand Futures Exchange's first product, a SET-50 index future, was created in 2006. TFEX has added futures on individual securities, as well as futures on gold, rubber, interest rates and U.S. dollars. It also trades SET-50 index options and sector-index futures. Trading activity on TFEX has grown in recent years, with a 13.7 percent increase in contracts traded in 2017 over 2016. Specific contract growth occurred in single stock futures (40.4 percent), Baht gold futures (28.6 percent) and contracts on the SET50 stock index increasing by 152.3 percent.

16. Retail investors engaged in short-term daily trading are responsible for a substantial proportion of SET and TFEX daily trading value. Retail investors are estimated to account for 48 percent of daily SET trading value and 51 percent of daily TFEX trading value. While there are 1.5 million registered investor accounts on the SET, it is estimated that approximately 600 investors account for most of the daily retail investor trading. Foreign investors account for approximately 30 percent of daily trading value and domestic institutional investors for 11 percent. Proprietary trading by brokers accounts for 10.4 percent.

17. The total outstanding value of the Thai bond market at the end of 2018 was THB 13.06 trillion. Government bonds accounted for 37 percent of total outstanding value, followed by 28 percent corporate bonds, 26 percent BoT bonds, 8 percent SOE bonds, and 1 percent foreign bonds.

18. Bonds are almost exclusively traded OTC (Table 2). In the secondary market, around 99 percent of the THB 19,312 billion traded in bonds are negotiated OTC (not considering financing related transactions), where the remaining trades are performed in the stock exchange (the BEX platform). Although some commercial platforms are used for price discovery purposes, OTC trades are exclusively executed on a bilateral basis. Government bonds dominate trading in the OTC market, with dealer-client trading accounting for over 80 percent of the trading value, primarily trades between dealers and mutual funds.

Table 2. Thailand: OTC Bond Trading Data					
Type of Bond *(billion THB and USD)*	**2014**	**2015**	**2016**	**2017**	**2018**
Total trading value	18,867.21 (USD 572)	19,653.84 (USD 596)	22,409.45 (USD 679)	22,046.71 (USD 668)	19,312.90 (USD 585)
1. Government debt securities	18,238.42 (USD 553)	18,826.67 (USD 571)	21,330.60 (USD 646)	20,783.09 (USD 630)	18,183.00 (USD 551)
2. Corporate bonds	592.56 (USD 18)	807.69 (USD 24)	1,056.87 (USD 32)	1,241.59 (USD 38)	1,117 (USD 34)
3. Foreign bonds	36.23 (USD 1.1)	19.48 (USD 0.6)	21.98 (USD 0.7)	22.02 (USD 0.7)	12.9 (USD 0.4)
Source: TBMA					

19. **The market capitalization of the SET grew from THB 13 billion in 2014 to 17 billion in 2018.** Growth was partly driven by low interest rates in the banking sector as investors shifted savings to the stock market as well as the world growth and the country's economic recovery. The three top performing sectors have been industrials, service business, and resources.

20. **There are about 40 licensed financial intermediaries in Thailand** (Table 3). The SEC issues specific licenses for each function performed and most firms are licensed in all functional business. Foreign owned subsidiaries dominate the market. Seventeen foreign-owned bank subsidiaries account for 54 percent of total market share, with the five largest accounting for 19 percent (primarily off-shore clients). Nine firms owned by domestic banks represent 26 percent of the market share. Twelve independent domestic firms account for the remaining 20 percent of the market share. Among the 39 securities companies that perform as securities brokers, they can be classified into three types: bank subsidiaries, foreign subsidiaries, and stand-alone. The majority is foreign subsidiaries with a market share of 50 percent. Also, there is one related organization, the Association of Securities Companies (ASCO), which has been established and registered with the SEC since 1992 with its main purpose to develop the securities industry.

Table 3. Thailand: Number of Financial Intermediaries by Type of Business				
	Type of business	**2016**	**2017**	**2018**
Securities business	Brokers	38	39	39
	Dealers	35	35	36
	Underwriters	39	40	41
Derivative business	Investment advisors	40	41	43
	Agents	42	40	39
	Dealers	8	8	9
	Investment advisors	1	1	1
Source: SEC				

21. Commission fees from clients (retail and institutional) are the primary source of revenue (71 percent in 2018) for licensed securities companies. Proprietary trading, largely by domestic firms is the second source of revenue (17 percent in 2018). Securities underwriting is dominated by the banking sector.

22. Asset management is a substantial and growing component of the capital market. There are 25 licensed management companies in Thailand, and 71 licensed distributors of collective investment schemes. The six largest asset management companies are all owned by Thai banks. Distributors are a separate category of SEC licensee. They include 19 banks, 30 brokers, 6 fintech companies, 11 insurance companies, and 4 other companies. There are 1,382 mutual funds with total assets of BHT 4.68 trillion (US$150 billion) held by 3.11 million unitholder accounts. Total assets represent approximately 34 percent of GDP.

Table 4. Thailand: Number of CIS Operators Licensed to Manage mutual funds and Mutual Funds Managed

	2014	2015	2016	2017	2018
CIS operators	24	25	25	25	25
Mutual funds	1,540	1,422	1,492	1,431	1,497

Source: SEC.

23. Privately-held pension funds are a significant component of Thai collective investments. There are two categories of non-governmental pension funds, provident funds (collective investment schemes created by companies) and private funds (individual accounts). As of 2017, there were 16 provident fund managers offering 413 funds, with contributions from 18,704 companies and total assets of THB 1.1 trillion (US$37 billion), or 7 percent of GDP. There are 24 private pension fund managers of 4,707 private funds holding assets of THB 841 billion (US$28 billion), or 5.4 percent of GDP.

E. Preconditions for Effective Securities Regulation

24. The laws and regulatory structure of Thailand address all general preconditions for effective securities regulation. Thailand has adopted IFRS and international audit standards (IAS) by incorporation into Thai accounting and auditing standards, although the incorporation of new standards into the Thai system appears to entail significant delay. Thailand is in the process of revising its tax laws applicable to collective investments, which is creating a significant degree of uncertainty for Thai mutual funds.

25. Thailand recently enacted amendments to the SEA, which could not be considered in this assessment. As discussed on principles 9, and 33–37, the SEC does not have full regulatory authority over the SET. An amendment to the SEA was passed by the National Legislative Assembly affecting several aspects of the SEA. This amendment, that is not yet effective, incorporates several duties and requirements to the SET, including the obligation to maintain sufficient financial resources, adequate trading systems as well as systems for recording and disseminating price information, for surveillance, and for securities clearing and settlement. The amendment also imposes the obligation to the exchange to issue rules applicable to its members and to the listed issuers. A particularly relevant provision grants the SEC Board powers to instruct the SET to amend, modify or revoke any of the undertakings carried out by the SET to comply with the above-mentioned obligations.

F. Main Findings

26. Principles for the Regulator. The SEC's responsibilities, powers and authorities are clearly defined and objectively set out in Thai law. The SEC has a stable source of funding and appears to have adequate resources. It has comprehensive procedures for promoting regulatory transparency and high professional standards for its staff. It has developed and operationalized internal and cross-agency programs to address issues related to systemic risk, the perimeters of regulation, and conflicts of interest. The potential for political interference in operating decisions continues to exist under Thai law, although there is no indication that this is occurring. Amendment of the SEA to eliminate the possibility of external interference in operating decisions and to enhance SEC enforcement remedies through expansion of the forms of misconduct that can be addressed through civil litigation is recommended.

27. Principles for self-regulation. The SET, TFEX, and TBMA have SRO arrangements that cover regulatory practices as well as supervision and disciplinary actions over of their members, which are adequately overseen by the SEC. The arrangements with the SET and TBMA currently rely only on MOU signed with both SROs to exercise its supervisory and regulatory mission. A recent amendment to the SEA will partially remediate this shortcoming. The SEC lacks statutory authority to suspend or terminate the license of the SET or impose monetary penalties for misconduct.

28. Principles for the enforcement of securities regulation. The SEC has broad comprehensive authority to conduct inspections and investigations. This includes the authority to obtain books and records or compel testimony from any entity or person, as necessary to conduct inspections or investigations. The 2016 amendments to the SEA authorizing SEC civil actions in specified important areas is a significant improvement in SEC enforcement authority, but expanded authority over all violations of the law is needed. The SEC also lacks the authority to take action against the SET if it violates the SEA. The SEC inspections appear to be of high quality. A greater number of periodic onsite securities firm inspections are needed to achieve a full cycle in a reasonable period of time. The number of issuer disclosure reports reviewed under the RBA methodology appears low. The SEC should have real-time surveillance capacity across all financial markets during periods of market turbulence to effectively fulfill its systemic risk responsibilities, to effectively oversee the effectiveness of SRO surveillance activities and to analyze patterns of market misconduct that may cross markets.

29. Principles for cooperation in regulation. Issues identified in the previous FSAP have been addressed. The SEC is empowered by the SEA to share public and non-public information with domestic and foreign counterparts and also is authorized by the SEA to establish information sharing mechanisms. It is a signatory of the IOSCO MMoU. The SEA also gives powers to the SEC to provide assistance to domestic and foreign regulators.

30. Principles for Issuers. The SEA provides the SEC with ample powers to monitor, oversee and discipline issuers and all entities and persons with responsibilities in public offerings. The SEC has a supervisory program to review financial reporting and material information, although it should analyze more company reports. The SEA, the PCA, the SEC rulings, and rules provide an appropriate framework for changes of control transactions to be conducted fairly and with full disclosure. While not a requirement under the IOSCO Principles, the SEC should consider requiring public issuers to have internal policies applicable to transactions by company insiders. In addition, the SEC proxy statement disclosure requirements are not specific on the information to disclose in relation to the matters to be voted in shareholders meetings, for instance information on candidate directors' interests in the issuer, compensation from the issuer or past relationships. Financial statements to be included in the prospectus and in the annual and semi-annual reports are prepared according to TFRS which are fully aligned with IFRS, although IFRS on financial instruments is yet to be adopted. Each new IFRS is issued as a TFRS after a one-year delay, a time window that should be reduced.

31. Principles for auditors, credit rating agencies, and other information service providers. Auditors are subject to adequate levels of oversight by the SEC and they are required to follow international standards applicable to auditors and the regulation guarantees adequate independence of audit firms and their personnel. The SEC's approved auditors are required to perform their audit work according to the Thai Standards on Auditing set out by the FAP following the ISA standards. The CRAs are licensed and regulated by the SEC and are expressly required to follow the IOSCO CRA Code of Conduct. The SEA, the SEC regulation and the ASCO standards conform a comprehensive regulatory framework applicable to firms providing advice to investors as well as their personnel. Specific standards are applied to sell-side research analysts and their employers.

32. Principles for collective investment schemes. There is a comprehensive system for licensing of fund operators and approval of CIS and for continuing oversight of the activities of the fund and its operator, including regular reporting and onsite inspection. The TBMA pricing information is the standard utilized by all mutual funds for illiquid issues of debt securities. The TBMA daily yield curve utilizes non-binding indicative quotes for thinly traded issues of government securities. This is not sound practice as indicative quotes have limited reliability in a secondary market. While the SEC has adopted regulations for hedge funds, hedge funds are created under the general mutual fund licensing and registration regulations as a specialized category of mutual fund: ultra-high net worth accredited investor ("UI") mutual fund.

33. Principles for market intermediaries. The SEA and SEC regulations establish licensing requirements applicable to securities intermediaries, such as minimum paid-up capital, sound financial status and policies and measures for internal controls, risk management, dealing with conflicts of interest (COI), and for preserving confidentiality. They also include requirements for all directors, managers and major shareholders of the firms. Prudential and solvency requirements are regulated by the net capital rule, which takes into account financial risks, liquidity risks and operational risks on a continuous basis. The SEC establishes standards for business conduct of intermediaries undertaking securities and derivatives businesses, in relation to appropriate management and organizational systems, as well as sufficient personnel to be able to operate efficiently and with due care, taking into account the nature and size of the business and associated risks. The SEC has implemented early warning systems and procedures for dealing with failing firms. The SEA does not provide the SEC with authority to appoint or request a competent authority to appoint a temporary receiver for an intermediary that has suffered a major failure.

34. Principles for the Secondary Markets. Real-time surveillance of the securities markets is the responsibility of the SRO. The SEC does not have direct real-time access to SRO surveillance systems. It receives a detailed electronic file of all SET and TFEX trading data on a two-month delayed basis. The SET, TFEX, and the TBMA provide more rapid trading information when requested by the SEC or when a referral is made to the SEC of suspicious trading activity. The SET and TFEX Surveillance units operate from the same facility but the two Surveillance functions are separate, with only specified persons in each unit authorized to access the other surveillance system. The SEC should obtain real-time online access to SRO surveillance systems and create its own surveillance program to augment and complement the current SRO programs. Consideration should also be given to merging the SET and TFEX surveillance programs. It is recommended that the TBMA surveillance and enforcement programs should be examined carefully. Daily trading on the SET is largely conducted by retail investors engaging in short-term trading, and licensed intermediaries rely heavily upon client commissions for revenue. Recent amendments to the SEA provide the SEC with legal authority to review and approve all SET trading and operations rules. This may be an appropriate point in time for the SEC to conduct a comprehensive examination of all SET trading rules (e.g. trading restrictions, minimum client commissions, block trading rules) and their interaction and influence on the common trading practices on the SET. The SET, TFEX, and TCH monitor the risks of its members (at member level) and have put in place measures to identify, monitor, and evaluate large exposures. The TCH has tools to manage exposures by its members by requiring collateral according to the risk assumed by them. Short-selling is regulated and naked short-selling prohibited. Exchange traded derivatives are cleared through TCH while OTC traded derivatives are not. The authorities have manifested that the size of the OTC market segment is not large enough to make centralized clearing mandatory. However, the SEC and the BoT should begin the process of developing a workplan for requiring centralized clearing of OTC derivatives.

Table 5. Thailand: Summary Implementation of the IOSCO Principles—Detailed Assessment

Principle	Findings
Principle 1. The responsibilities of the Regulator should be clear and objectively stated.	The law provides a clear statement of the responsibilities of the SEC and generally defines the authority of the SECB to develop policy and regulations and the authority of the staff under the direction of the SG to implement policy and perform all operational responsibilities.
Principle 2. The Regulator should be operationally independent and accountable in the exercise of its functions and powers.	The impact of the MOF having final approval over licensing and revocation decisions continues to be an issue under this principle. While there is no evidence that SEC operational decisions have been affected, the potential continues to exist. A separate issue concerning operational independence is raised by the composition of the Criminal Fining Committee (CFC) and the Civil Sanctions Committee (CSC). While there is no evidence that SEC operational independence on enforcement decisions has been affected, this is a potential problem.
Principle 3. The Regulator should have adequate powers, proper resources and the capacity to perform its functions and exercise its powers.	The SEC legal authority is generally sufficient to perform its functions, with the one limitation being that SEC civil enforcement authority is available only for specified forms of misconduct, including market manipulation, insider trading and making false statements in required report, discussed in principles 11–12. SEC budgetary and staff resources appear to be sufficient for its responsibilities, although consideration should be given to increasing the number of staff assigned to onsite inspections of licensed intermediaries and to the review of periodic reports filed by public companies.
Principle 4. The Regulator should adopt clear and consistent regulatory processes.	The SEC has adopted and implemented a full range of procedures.
Principle 5. The staff of the Regulator should observe the highest professional standards, including appropriate standards of confidentiality.	The annual SEC audit of securities accounts held by the family of SEC staff offsets the lack of regulatory prohibitions on staff family members
Principle 6. The Regulator should have or contribute to a process to monitor, mitigate and manage systemic risk, appropriate to its mandate.	The internal SEC structure is operational and appears to be an effective tool for monitoring systemic risk. The SEC should work with the BoT and OIC on adoption of a routine procedure for sharing information on entities that are related or subject to joint regulation.
Principle 7. The Regulator should have or contribute to a process to review the perimeter of regulation regularly.	The SEC has incorporated assessment of perimeters of regulation into its overall systemic risk assessment program.
Principle 8. The Regulator should seek to ensure that conflicts of interest and misalignment of incentives are avoided, eliminated, disclosed or otherwise managed.	Issues concerning conflicts of interest have been incorporated into the SEC regulatory standards for each category of licensed entity.

Table 5. Thailand: Summary Implementation of the IOSCO Principles—Detailed Assessment (continued)

Principle	Findings
Principle 9. Where the regulatory system makes use of Self-Regulatory Organizations (SROs) that exercise some direct oversight responsibility for their respective areas of competence, such SROs should be subject to the oversight of the Regulator and should observe standards of fairness and confidentiality when exercising powers and delegated responsibilities.	The SET and TBMA have SRO arrangements that cover regulatory practices as well as supervision and disciplinary actions over of their members. These are adequately overseen by the SEC, which currently relies on MOUs signed with both to exercise its supervisory and regulatory mission. A recent amendment to the SEA will remediate this shortcoming as it pertains to SEC authority to review and approve SET trading and operating rules SET. There is room for improvement in the TBMA oversight practice of the Thai bond market and member compliance with trade reporting requirements.
Principle 10. The Regulator should have comprehensive inspection, investigation, and surveillance powers.	The SEC has broad comprehensive authority to conduct inspections of all licensed entities. This includes onsite inspections of the relevant operations of financial sector entities such as bank subsidiaries that have obtained licenses from the SEC to perform regulated activities such as distribution of mutual funds or investment advisory services. The SEC also has broad investigative authority that covers any person or entity suspected of having participated in a violation of the SEA or DA or having provided assistance in violations. The SEC also has broad authority to obtain books and records or compel testimony from any entity or person, as necessary to conduct inspections or investigations.
Principle 11. The Regulator should have comprehensive enforcement powers.	The amendments to the SEA and DEA authorizing SEC civil actions in important areas, including market misconduct, insider trading and making false statements in required reports is a significant improvement in SEC enforcement authority, but broader authority is needed so that civil enforcement can be used for all violations of the SEA and DA. The SEC also lacks the authority to take action against the SET if it violates the SEA.
Principle 12. The regulatory system should ensure an effective and credible use of inspection, investigation, surveillance and enforcement powers and implementation of an effective compliance program.	SEC inspections appear to be of high quality. A greater number of securities firm inspections are needed and the number of cause inspections may be low. The number of issuer disclosure reports reviewed under the RBA methodology appears low. Civil enforcement authority appears to be a useful addition to SEC authority. As there is only 2 years of experience, it is a small sample size. Expansion of civil authority is needed to make up for the difficulty in criminal prosecution.
Principle 13. The Regulator should have authority to share both public and non-public information with domestic and foreign counterparts.	The SEC is empowered by the SEA to share public and non-public information with domestic and foreign counterparts.

Table 5. Thailand: Summary Implementation of the IOSCO Principles—Detailed Assessment (continued)	
Principle	**Findings**
Principle 14. Regulators should establish information sharing mechanisms that set out when and how they will share both public and non-public information with their domestic and foreign counterparts.	The SEC is authorized to establish information sharing mechanisms and is now a signatory of the IOSCO MMoU.
Principle 15. The regulatory system should allow for assistance to be provided to foreign Regulators who need to make inquiries in the discharge of their functions and exercise of their powers.	The SEA gives powers to the SEC to provide assistance to domestic and foreign regulators. The SEC has provided assistance in a number of opportunities to foreign regulators.
Principle 16. There should be full, accurate and timely disclosure of financial results, risk, and other information that is material to investors' decisions.	The SEA provides the SEC with ample powers to monitor, oversee and discipline issuers and all entities and persons with responsibilities in public offerings. The SEC has a supervisory program on financial reporting and material information, although it should analyze more company reports.
Principle 17. Holders of securities in a company should be treated in a fair and equitable manner.	The SEA, the PCA, SEC rulings, and rules provide an appropriate framework for changes of control transactions to be conducted fairly and with full disclosure. The SEC proxy statement disclosure requirements are not specific on the information to disclose in relation to the matters to be voted in shareholders meetings, including specific information on candidate directors. While not required by the IOSCO Principles, the SEC should consider requiring public issuers to have internal policies applicable to transactions by company insiders.
Principle 18. Accounting standards used by issuers to prepare financial statements should be of a high and internationally acceptable quality.	Financial statements to be included in the prospectus and in the annual and semi-annual reports must be prepared according to TFRS which are fully aligned with IFRS. Each new IFRS is issued as a TFRS after a one-year delay. IFRS on financial instruments is yet to be adopted. The FAP should consider reducing the length of the mentioned delay.
Principle 19. Auditors should be subject to adequate levels of oversight.	Auditors are subject to adequate levels of oversight by the SEC and they are required to follow international standards applicable to auditors. An exception is the case of listed SOEs, that currently are audited by a government agency, although that situation is expected to change in the near term. The SEC may consider the use of pecuniary actions on auditing firms as an additional disciplinary tool.
Principle 20. Auditors should be independent of the issuing entity that they audit.	The regulation guarantees adequate independence of audit firms and their personnel.
Principle 21. Audit standards should be of a high and internationally acceptable quality.	The SEC's approved auditors are required to perform their audit work according to the Thai Standards on Auditing set out by the FAP following the ISA standards.

Table 5. Thailand: Summary Implementation of the IOSCO Principles—Detailed Assessment (continued)

Principle	Findings
Principle 22. Credit rating agencies should be subject to adequate levels of oversight. The regulatory system should ensure that credit rating agencies whose ratings are used for regulatory purposes are subject to registration and ongoing supervision.	CRAs are licensed and regulated by the SEC and are expressly required to follow the IOSCO CRA Code of Conduct.
Principle 23. Other entities that offer investors analytical or evaluative services should be subject to oversight and regulation appropriate to the impact their activities have on the market or the degree to which the regulatory system relies on them.	The SEA, the SEC regulation and the ASCO standards provide a comprehensive regulatory framework applicable to firms providing advice to investors as well as their personnel. Specific standards are applied to sell-side research analysts and their employers.
Principle 24. The regulatory system should set standards for the eligibility, governance, organization, and operational conduct of those who wish to market or operate a collective investment scheme.	There is a comprehensive system for licensing of fund operators and approval of funds and for continuing oversight of the activities of the fund and its operator, including regular reporting and onsite inspection.
Principle 25. The regulatory system should provide for rules governing the legal form and structure of collective investment schemes and the segregation and protection of client assets.	All requirements under this principle are met.
Principle 26. Regulation should require disclosure, as set forth under the principles for issuers, which is necessary to evaluate the suitability of a collective investment scheme for a particular investor and the value of the investor's interest in the scheme.	CIS must provide investors with a detailed summary Fact sheet of key information and with a full prospectus.
Principle 27. Regulation should ensure that there is a proper and disclosed basis for asset valuation and the pricing and the redemption of units in a collective investment scheme.	The TBMA pricing information is the standard utilized by all mutual funds for illiquid issues. The TBMA daily yield curve utilizes non-binding indicative quotes for thinly traded issues of government securities. This is not sound practice as indicative quotes have limited reliability in a secondary market.
Principle 28. Regulation should ensure that hedge funds and/or hedge funds managers/advisers are subject to appropriate oversight.	Funds operating that would be considered hedge funds are licensed as mutual funds under special categories open only to institutional investors, accredited investors and ultra-high net worth accredited investors.

Table 5. Thailand: Summary Implementation of the IOSCO Principles—Detailed Assessment (continued)

Principle	Findings
Principle 29. Regulation should provide for minimum entry standards for market intermediaries.	The SEA and SEC regulations establish licensing requirements applicable to securities intermediaries, such as minimum paid-up capital, sound financial status, and policies and measures for internal controls, risk management, dealing with COI, and for preserving confidentiality. They also include requirements for all directors, managers and major shareholders of the firms.
Principle 30. There should be initial and ongoing capital and other prudential requirements for market intermediaries that reflect the risks that the intermediaries undertake.	Prudential and solvency requirements are regulated by the net capital rule, which takes into account financial risks, liquidity risks and operational risks on a continuous basis.
Principle 31. Market intermediaries should be required to establish an internal function that delivers compliance with standards for internal organization and operational conduct, with the aim of protecting the interests of clients and their assets and ensuring proper management of risk, through which management of the intermediary accepts primary responsibility for these matters.	The SEC establishes standards for business conduct of intermediaries undertaking securities and derivatives businesses, in relation to appropriate management and organizational systems, as well as sufficient personnel to be able to operate efficiently and with due care, taking into account the nature and size of the business and associated risks.
Principle 32. There should be procedures for dealing with the failure of a market intermediary in order to minimize damage and loss to investors and to contain systemic risk.	The SEC has implemented early warning systems and procedures for dealing with failing firms. The SEC does not have the authority to appoint or request the appointment of a temporary receiver for an intermediary that has had a major failure and it cannot take control of customers' assets before a receiver is appointed or as an emergency action.
Principle 33. The establishment of trading systems including securities exchanges should be subject to regulatory authorization and oversight.	The SET and TFEX have reliable trading arrangements that in practice are overseen by the SEC, although in the case of the SET, the regulator currently relies on an MOU to supplement its statutory authority. A recent amendment to the SEA will remediate this shortcoming. The SEC lacks authority to suspend or revoke the SET license
Principle 34. There should be ongoing regulatory supervision of exchanges and trading systems, which should aim to ensure that the integrity of trading is maintained through fair and equitable rules that strike an appropriate balance between the demands of different market participants.	Issues concerning the accuracy of OTC bond reporting in dealer to customer trading should be examined carefully. 80 percent of daily reported trading is dealer to customer transactions, of which 62 percent is trading between a dealer and a mutual fund. SEC lacks authority to suspend, fine or revoke the SET license. Recently enacted SEA amendments will provide the SEC with full SET rule review and approval authority. As the new law is not in effect, the change couldn't be incorporated into the rating

Table 5. Thailand: Summary Implementation of the IOSCO Principles—Detailed Assessment (concluded)

Principle	Findings
Principle 35. Regulation should promote transparency of trading.	Current practice in SET and TFEX provides adequate pre-trade and post-trade transparency. Respecting the OTC bond trading, TBMA ensures appropriate post-trade transparency, but there is no pre-trade transparency in this market segment.
Principle 36. Regulation should be designed to detect and deter manipulation and other unfair trading practices.	As discussed previously, the SEC should obtain real-time online access to existing SRO surveillance systems and develop its own surveillance team to augment and complement the current SRO programs. Consideration should also be given to merging the SET and TFEX surveillance programs. It is recommended that the TBMA surveillance and enforcement programs should be examined carefully. As discussed previously there may be serious validation issues with dealer-customer trade reporting, which accounts for 80 percent of daily trading. Once the new amendments to the SEA become effective, the SEC will have authority over SET trading and operating rules. Short-term retail investor trading is a substantial portion of SET daily trade volume and licensed intermediaries rely heavily on trade commissions and fees for revenue. This may be an appropriate point in time for the SEC to conduct a comprehensive examination of all SET trading and operating rules and their interaction and influence on the common trading practices on the SET.
Principle 37. Regulation should aim to ensure the proper management of large exposures, default risk and market disruption.	The SET and TFEX, monitor the risks of its members (at member level) and put in place the measures to identify, monitor, and evaluate large exposures. The TCH has tools to manage exposures by its members by requiring collateral according to the risk assumed by them. Short-selling is regulated and naked short-selling prohibited. Exchange traded derivatives are cleared through TCH while OTC traded derivatives are not. The authorities believe that the size of this market segment is not large enough to justify making centralized clearing mandatory. The SEC and BoT should develop a roadmap for mandating central clearing of OTC derivatives. Central clearing addresses the inherent systemic risks arising from bilateral clearing and is consistent with the IOSCO Principles and international best practices.
Principle 38. Securities settlement systems and central counterparties should be subject to regulatory and supervisory requirements that are designed to ensure that they are fair, effective and efficient and that they reduce systemic risk.	Principle not assessed

G. Recommended action plan

Table 6. Thailand: Recommended Action Plan to Improve Implementation of the IOSCO Principles

Principle	Recommended Action
Principles 2 and 3	Amend the SEA to transfer final approval on licensing to the SEC. Closely examine operational independence issues raised by composition of Criminal Fining Committee and the Civil Sanction Committee.
Principles 3, 11, and 12	Amend the SEA to authorize the SEC to bring civil enforcement actions for any violation of the SEA and DA.
Principle 4	The SEC should consider expanding its use of interpretive and explanatory guidance and undertake to make public all guidance provided to one or a limited number of persons or entities.
Principle 6	The SEC should work with the BoT and OIC on adoption of a routine procedure for sharing information on entities that are related or subject to joint regulation.
Principles 6, 10, 12, 34, 36	The SEC should have real-time access to SRO surveillance systems providing access across all financial markets during periods of market turbulence to effectively fulfill its systemic risk responsibilities, to effectively oversee the effectiveness of SRO surveillance activities and to analyze patterns of market misconduct that may cross markets.
Principle 9.	The SEC´s powers to regulate the SET as an SRO should be expressly stated in the SEA.
Principle 9.	The SEC should be given authority to suspend, fine or revoke the SET license.
Principle 9.	The TBMA policy of not disclosing disciplinary sanctions to its member firms or the public should be examined by the SEC to determine if it is consistent with SEA policy on publication of sanctions and whether it promotes the integrity of OTC trading market.
Principle 10, 12,16.	The SEC should increase the number of company reports analyzed.
Principle 16.	The SEC should consider implementing common processes between areas reviewing qualitative and quantitative aspects of issuer disclosure reports.
Principle 17.	The SEC should be more specific in the regulation of proxy statement disclosures requirements on the information to provide in relation to the matters to be voted in shareholders meetings.
Principle 17.	While not required by the IOSCO Principles, the SEC should consider requiring public companies to establish their own internal policies in relation to trading by insiders, that should include a definition of insiders and the specific events or situations that should prevent these from trading on the company´s stocks.

Table 6. Thailand: Recommended Action Plan to Improve Implementation of the IOSCO Principles (concluded)	
Principle	**Recommended Action**
Principle 18.	The time length for the adoption of each new published IFRS should be reduced.
Principle 18.	The SEC should increase the number of financial reports analyzed.
Principle 19.	Listed SOEs should be audited by SEC-licensed auditors instead of the Thai Office of the Auditor General.
Principle 19.	The SEC may consider giving consideration to the use of pecuniary sanctions (fines) applicable to audit firms for breaches of professional audit standards.
Principle 22.	The SEA should provide the SEC with explicit authority to regulate CRAs.
Principle 27	The TBMA yield curve should not be based in part on non-binding, indicative quotes.
Principle 32.	The SEA should be amended to provide the SEC with authority to appoint or seek the appointment of a temporary receiver for an intermediary that has failed or to take control of customers assets before that appointment or as an emergency action.
Principle 32, 37	The SEC should give consideration to requiring the TCH the individual accounting segregation of collateral from the participants' customers on an individual basis to facilitate portability in case of a participant´s failure.
Principle 33.	The SET should consider conducting and disclosing an analysis of the economic rationale behind its fees structure.
Principle 33	The SEA should be amended to enable the SEC to take disciplinary action against the SET, including fines and other remedial actions.
Principle 33, 36	The SEC should undertake a comprehensive review of the SET trading rules, including share pricing and the minimum uptick rule to assess the impact on market trading.
Principle 34, 35	The SEC should require that TBMA revise its rules on pre-trade transparency in the OTC bond market and require same-day quotes on a continuous basis. While not required by these IOSCO Principles, the SEC may consider setting out specific regulations on block trading (Big Lot), such as the minimum size of large trades eligible for block trading, and the price conditions that would guarantee a close alignment with market prices.
Principle 37.	The SEC and the BoT should develop a roadmap for mandatory centralized clearing of OTC derivatives.
Principle 37	The SEC and BoT should consider requiring the complete and irreversible dematerialization of all listed securities.

H. Authorities' Response to the Assessment

35. The Securities and Exchange Commission of Thailand (SEC) welcomes the assessment as the first jurisdiction under the new IOSCO Objectives and Principles of Securities Regulation published in May 2017. The newly updated set of Principles has rigorously enhanced the foundation of effective and stable financial systems, providing guidance and implementation for an essential regulatory framework to cope with significant challenges in globalized, technology-oriented, instability, and integrated financial market environment.

36. The SEC would like to express our gratitude to the FSAP mission team and IOSCO assessors. We sincerely appreciate the dedication, resources, and time of the experienced assessors for the profound review of the legal system, regulatory framework, as well as practices of the Thai capital market. The valuable recommendations will further strengthen the sound framework of securities regulations and high level of implementation of the IOSCO Principles by the SEC.

37. Since Thailand's last FSAP in 2008, the SEC has been prioritizing the recommendations from the assessment with commitment to take steps toward practical implementation and incorporated these measures into Capital Market Development Plan and SEC Strategic Plan. This assessment has provided the authorities with an opportunity to holistically review supervisory and regulatory framework through self-assessment and onsite visits of the assessors. Significant progress has resulted in every area as elaborated in the assessment report, which objectively reflects the present development and continuous improvement of Thai capital market. It acknowledges that the regulatory framework is largely compliant with the IOSCO Principles, recognizes the authorities' efforts to deepen reforms and promotes development of Thai capital market.

38. The SEC believes that recommendations and proposed actions will facilitate future formulations of Capital Market Development Plan as well as strategic plan of the regulator. This will foster consensus among financial regulators, enforcement agencies, legislators, other authorities, and stakeholders to create the positive environment and prospects for the upcoming capital market reforms.

39. While some initiatives have already been embarked during the time of the assessment, we will thoroughly consider these useful observations and recommendations. Our responses to some specific areas and recommendations are detailed as follows:

- **Inter-agency cooperation and formalizing arrangements—systemic risks, perimeter review, and managing COIs.** The SEC has implemented an institutional arrangement with the BoT and OIC to fully exchange information. This existing inter-agency cooperation by tri-partite MoU, is called "Three Regulators Steering Committee", which is a coordinating body for discussing regulatory policies and initiatives. In particular, working groups on financial stability, market conduct, information sharing platform, fintech and regulatory sandbox, cyber security, and crisis management were established as focused areas. With regards to the new IOSCO principles, the SEC has continuously developed and put in place formalized process for identifying, managing, and addressing systemic risks, regulatory perimeter, and conflicts of interest for the purpose of capital market risk management and as input for the three-regulators steering committee. These arrangements are recognized as notable success by the assessors under Principles 6-8.

- **Oversight and Supervision of Stock Exchange of Thailand (SET).** In the area of overseeing and supervising SET, the SEC has always sought to increase its effectiveness to ensure fair, efficient, and transparent market. The recent amendment of the SEA will enhance SET governance, provide clear expectations for SET to perform as an SRO and secondary market, as well as empower the SEC to approve SET trading rules. The SEC believes that FSAP recommendations will support and provide solid ground for future amendments, especially on empowering the SEC to take escalating disciplinary measures against SET. To bolster the continuing development of the SEC oversight program, full review and consideration will be given to all issues raised, including real-time surveillance data, comprehensive examination of all SET trading rules and practices as well as fee structure, and conditions for block trades transactions.

- **Oversight and Supervision of TBMA.** The assessors have raised the SEC's awareness of the need to improve transparency of pre-trade information for OTC debt securities. Particular attention will be given to (1) amending relevant regulations to require the same-day report of transactions and trade execution and (2) examining practices in modeling yield curve as pricing of debt securities are widely used by mutual funds and institutional investors. The SEC will ensure adequate supervision of all TBMA's functions on OTC debt securities such as pricing methodologies, trading regulations, and disclosure requirements.

- **Enhancement of Enforcement Effectiveness.** Since civil sanction was granted by the SEA amendment, the SEC has been effectively utilizing this authority on applicable cases without delay. The SEC pursues to continue and elevate its level of effectiveness whilst seeks to expand authority to bring civil enforcement actions for any violation of the SEA so that the difficulty in criminal prosecution is diminished.

- **Shareholders' rights.** Given the importance of protecting and expanding shareholders' rights, the SEC is willing to take responsive actions according to the assessors' recommendations on (1) requiring more specific disclosure of directors' interest in proxy statements, (2) allowing shareholders to exert their withdrawal rights to cover other circumstances aside from takeover case, and (3) establishing internal policies in relation to trading by insiders.

- **Regulating Market Intermediaries and Dealing with eventuality of failure.** SEC has been considering on assessors' comments about Principle 32 focusing on effectiveness of customers' asset management in the case that Market Intermediaries (MI) has a financial difficulty which can cause major effects to clients and the whole system and deciding that the scope of existing laws can achieve the objective of Principle 32.

- The rule of SEC is specified that MI shall segregate customer's asset from its own, shall not use its customer's asset for its own or others' benefits except when granting the consent from customers, shall make a complete and correct record of date, numbers and types of assets , shall record the transaction and reason of changes in transaction in every time of making changes before the end of date, and shall submit the report on customer's asset to customer and SEC monthly. (SEA: Section 98 (3),[2] DA: Section 33).

- SEC states that MI shall maintain Net Capital and submit the information of Net Capital to SEC daily. For the rules of maintaining Net Capital, assessor decides that they already effectively cover the risks and liability from conducting business for MI. Even MI does not happen to have financial difficulty, if there are any significant changes to the financial data or any information that could provide hints to unusual situations, SEC will have the operation to follow unusual cases by investigating causes of changes, analyzing the effects on their financial conditions, and reporting to executive of SEC to immediately respond if such cases will lead to damage on capital market. (SEA: Section 97, DA: Section 49)

- If MI cannot maintain Net Capital in according to the Notification of the office of the SEC by the virtue of SEA (Section 141) and DA (Section 50), MI is not allowed to expand business and must submit correction plan to maintain Net Capital to SEC during designated period. In the case that MI has the operation that causes significant risks to customers or systems, for examples, negative Net Capital of MI or default in clearing and settlement process, MI must cease the operation, reduce risks from investment, and transfer customer's asset to other MIs according to the request of the customers.

- Apart from this, if SEC finds out that MI does not comply with the rules or there is reasonable ground or evidences to believe that any operations of MI may cause damages to investors, SEC or the Capital Market Supervisory Board ("CMSB") shall have the power to order MI to rectify such act, refrain from doing such act or do any act as SEC or CMSB may deem appropriate within a specified period of time (including customer's asset management). (SEA: Section 141-143, DA: Section 50).

- If MI is failed to comply with the order of SEC under SEA Section 141-142, SEC has power to order such MI to remove its directors, managers or persons responsible for its operation who have caused such events. In this regard, such MI shall appoint other person whom grants the consent from SEC to replace the person removed (SEA: Section 144).

- In case that MI fails to remove such person or remove but failed to appoint the person with the consent from SEC within 30 days from the date of removal. SEC, with the approval

[2] Notification of the Capital Market Supervisory Board No. TorThor. 43/2552 Re: Custody of Client's Assets by Securities Companies dated 3rd August 2009.

of the CMSB, has the power to remove such person and appoints other persons to replace the persons removed. The order of the SEC is deemed as a resolution of a shareholders' meeting in accordance with the Civil and Commercial Code or the law relating to public limited companies, as the case maybe. The person so removed shall no longer be involved in or operate, directly or indirectly any affair of that MI, and shall give assistance and provide facts to the persons so appointed. (SEA: Section 145).

- In case of the situation which required examination on the operation of MI under the order of SEC, SEC has the power to appoint the officer to examine the operation, assets and liability, documents and other information related to MI and order seizure or attachment of the documents for the beneficial examination (SEA: Section 264, DA: Section 103).

- If SEC has a reasonable ground to believe that the person would relocate or dispose the assets, SEC, with the approved of SEC Board, shall have the power to order seizure or attachment of such person's assets or the assets for which there is reasonable evidence to believe that they belong to such person by appointing officer to undertake the process (SEA: Section 267, DA: Section 108).

- If MI is announced bankrupt by the court, there will be the process supported according to Bankruptcy Act B.E. 2483. SEA and DA provide SEC the authority to arrange the customer's asset management in order to avoid loss to customers and the capital market system. SEC could transfer such assets to other MIs according to the request or consent from the customers, close out the customer's unsettled position to the clearing house in the case that MI is unable to transfer the assets (SEA: Section 111/1, DA: Section 43). A person eligible to file the petition of business reorganization with the court must obtain prior consent from SEC whereby such person must comply with the rule of SEC on customer's asset management as specified in 3 (Bankruptcy Act B.E. 2483: Section 90/4).