BANK OF THAILAND

BANK OF THAILAND

ANNUAL REPORT
2022

BANK OF THAILAND

MISSION

PROMOTING A STABLE FINANCIAL ENVIRONMENT TO ACHIEVE SUSTAINABLE AND INCLUSIVE ECONOMIC DEVELOPMENT

VISION

TO BE AN ORGANIZATION OF VISION PRINCIPLES THAT ENGAGES WITH STAKEHOLDERS IN PURSUIT OF THAILAND'S SUSTAINABLE ECONOMIC WELL-BEING

VALUES

PRINCIPLES VISIONS
COLLABORATION HUMILITY

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CHAPTER

1

OVERVIEW OF OPERATIONS IN 2022

Message from the Chairman of the Bank of Thailand Board

Message from the Governor of the Bank of Thailand

BOT at a Glance

What Thai People Benefited from the BOT's Policies and Actions in 2022

Mr. Porametee Vimolsiri
Chairman of the Bank of Thailand Board

MESSAGE FROM THE CHAIRMAN OF THE BANK OF THAILAND BOARD

2022 was considered a special year for the Bank of Thailand (BOT), an organization that played an important role in the country's economic and financial conditions, as it celebrated its 80th anniversary. Throughout its history, the BOT's management and staff have been recognized both domestically and internationally in their commitment to carrying out their duties with dedication and enforcing appropriate principals in carrying out policies to preserve the country's economic and financial stability.

In 2022, the BOT remained committed to carrying out its mission in promoting stability within the Thai financial system and supporting broad-based and sustainable economic recovery. In this regard, the BOT engaged in policy normalization following alleviation of the COVID-19 pandemic to prevent long term impacts to economic and financial system stability. Meanwhile, the BOT still monitored the impact to vulnerable groups by implementing targeted policies to assist the public and business sector that were afflicted. Such targeted measures included the Asset Warehousing, Special Loan Measure, Long-term Debt Restructuring Measure, including providing additional measures for retail debtors in order to suit specific target groups as well.

In conducting its mission of monitoring the BOT's activities, the Bank of Thailand Board, in collaboration with the 3 policy committees, namely the Monetary Policy Committee, the Financial Institutions Policy Committee, and the Payment Systems Committee as well as the Bank of Thailand Audit Committee and the Risk Oversight Committee had set the BOT's operational framework. Such framework would emphasize a more proactive, agile, and connected approach with all parties. This included the elevation of organizational efficiency to accommodate the changing landscape of the Thai financial sector and Environmental, Social, and Governance (ESG), which would play a vital role in supporting the Thai economy to expand at its full capacity, in an inclusive and sustainable manner. Furthermore, the BOT still prioritized regulation of risk and promotion of good governance so that the BOT's risk management process was up-to-date with current situations and more efficient under uncertain environments such as volatile global economic and financial conditions, geo-political problems, the impact of COVID-19 which left many permanent scars, as well as technological globalization.

On behalf of the Bank of Thailand Board, I wish to thank all BOT Board members, management, and staff for all their hard work, sacrifice and commitment throughout 2022, which allowed the BOT to accomplish its targets smoothly, and served as an important part of driving stable economic growth within the Thai economy, for the sustainable well-being of the Thai people.

Mr. Porametee Vimolsiri
Chairman of the Bank of Thailand Board

Mr. Sethaput Suthiwartnarueput
Governor of the Bank of Thailand

MESSAGE FROM THE GOVERNOR OF THE BANK OF THAILAND

In the past year (2022), the improvement in the COVID-19 pandemic illustrated a more broad-based economic recovery. The government's policy allowing foreign tourists to enter the country without the need for isolation measures, clearly led to an increase in the amount of tourists in the second half of the year. Furthermore, Thailand's export sector witnessed an increase in growth in line with increasing demand from trading partner countries, placing Thailand on a continued path to recovery. In this regard, the BOT's operational directions emphasized carrying out policies to support a "smooth takeoff", a term the BOT had continually communicated to illustrate that we wanted to witness a gradual economic recovery, akin to a smooth takeoff.

The first step to ensure that the Thai economy, which had just begun its recovery, continued to expand smoothly was the gradual implementation of policy normalization. This was why we saw a gradual increase in the policy interest rate, which was appropriate in the context of the Thai economy that was slowly recovering. Nonetheless, the BOT also needed to anchor inflation expectations in light of increasing energy and food prices. Moreover, the BOT had to consider the impact of higher living costs and debt on vulnerable groups. Therefore, accommodative financial measures remained necessary, but must emphasize more targeted measures; such as the Special Loan Measure and the Long-term Debt Restructuring Measure. In this regard, the implementation of or changes in various measures must closely analyze both internal economic and external global financial conditions whether they were elevated global inflation levels or the prolonged war between Russia and Ukraine, to mitigate risk and continually bolster Thailand's economic recovery.

In addition to immediate problems, the BOT also prioritized its mission to maintain long term economic and financial stability, with the new Thai financial landscape report as its operational center. This involved the development and improvements in digital finance, sustainable finance, and sustainable debt mitigation. A distinctive aspect of the financial landscape report was that it was rooted in strong academic foundations combined with taking into account the opinions of relevant stakeholders on a broad scale. The BOT had continually issued various policies under the financial landscape framework throughout 2022, such as commercial banks' business conduct in digital assets, environmental sustainability development roadmap, payment system development under Thailand's new financial landscape roadmap. All of their tangible results would be seen more in 2023.

Moreover, the year 2022 marked the 80th anniversary for the BOT, whereby the BOT held various activities to communicate its stance, vision, and role as a central bank in preserving domestic economic and financial stability. In addition to having a celebration, the various activities that were held throughout the year were opportunities for the BOT to review and decipher its operational effectiveness since the first day of operations until the present day, to be used as a foundation for thought and future development. I would like to take this opportunity to thank all executive management and staff, both past and present, for your dedication to enforcing the right principles which has made the BOT an organization that is trusted by the public over the past 80 years. I strongly hope that this trust in the BOT will remain for future generations to come given the BOT's emphasis in carrying out its mandate.

Mr. Sethaput Suthiwartnarueput
Governor of the Bank of Thailand

WHAT THAI PEOPLE BENEFITED FROM THE BOT'S POLICIES AND ACTIONS IN 2022

In 2022, activities in the Thai economy continued to gradually recover as a result of various policies and measures implemented by the public sector, as well as through cooperation with the general public and private sector. Furthermore, although the BOT began its policy normalization, but the BOT still maintained certain measures to target vulnerable groups particularly retail borrowers and SMEs and together with an emphasize on improving financial system infrastructure to accommodate the new global context.

In 2022, the BOT's operations helped drive the economy, businesses, and way of life, which can be illustrated in these statistics:

PEOPLE AND BUSINESSES

Long-term Debt Restructuring Measure: As of the end of December 2022, there were

5.22 MILLION ACCOUNTS

under the assistance of financial institutions, specialized financial institutions (SFIs), and non-bank financial service providers, representing a total debt of

3.38 TRILLION BAHT

Asset Warehousing Program: Since its inception in April 2021 to Decemcber 2022, a total of

409

businesses had received assistance under the program, with the value of transferred assets amounting to over

57,626

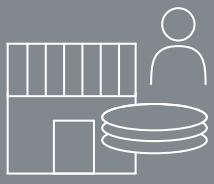
MILLION BAHT

This assistance represented

57.6%

of the 100,000 million baht allocated for the program from the beginning in April 2021.

❊ as of December 31, 2022



Special Loan Measure: As of the end of 2022, the business sector received credit lines amounting to over

205,198

million baht, with

58,840

cases

(an average approved amount of 3.5 million baht per case). More than 75% of the recipients were small and medium-sized enterprises (SMEs), of which 70% of them located in provincial areas.

❊ as of December 31, 2022

DIGITAL P-LOAN

For those with digital personal loans, the lending limit was extended up to 40,000 baht (until the end of 2022) with the condition to repay the loans within 12 months (until the end of 2023). By the end of 2022, there were a total of

2.38

million contracts

with an average loan value of

3,009

baht per contract

Debt Exit Fastlane Program: From the program's inception in April 2020 until the end of 2022, there were

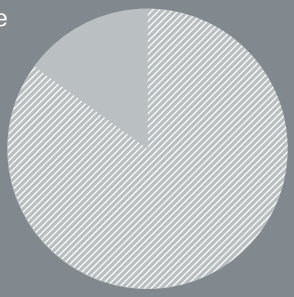
279,659 accounts

or 74% of eligible debtors.

Debt Clinic Program: There were

102,647 accounts receivables who had signed contracts as of December 31, 2022 (since its inception in April 2020),

or 85% of those eligible under the scheme.



Doctor Debt Program: At the end of 2022, there were 165,514 accumulated SITE VISITOR and 19,593 tickets issued from the CHATBOT

As for the program applicants, there were an accumulated total of 7,156 with 5,322 as retail users and 1,834 as business owners.

Debt Mediation Fair: From the registration date on September 26, 2022 to December 31, 2022, there were

178,340 applicants

or 390,601 cases,

37% of which were resolved.

e-Payment Transaction

PromptPay registration since inception in 2016 rose to

74.3 million numbers in 2022.

The volume of transactions averaged at

48.1 million transactions per day,

equivalent to

134.8 billion baht per day.

At the end of December 2022 there were NEW HIGH RECORD at

58.1 million transactions per day,

PromptPay-PayNow Transactions: Since its inception in April 2021 to December 2022, the accumulated transaction value is equivalent to

4,950 million baht and the volume of transactions rose to more than

55,000 transactions in December 2022.

FINANCIAL INSTITUTIONS

Lifted the dividend payout restriction (superseding the previous restriction of the dividend payout rate at no more than 50% of the annual net profit.)

ECONOMY AND SOCIETY

The Monetary Policy Committee (MPC) raised the policy rate from

0.50% > 1.25 %

and deemed that too soon or too much policy rate increases would interrupt the economic recovery.

AT A GLANCE

WHAT THAI PEOPLE BENEFITED FROM THE BOT'S POLICIES AND ACTIONS IN 2022

CHALLENGES OF THE THAI ECONOMY IN THE POST-COVID ERA: CONTINUOUS RECOVERY

In 2022, the COVID-19 situation gradually improved in Thailand, allowing the country to resume economic activities almost normally. However, despite this progress, the Thai economy continued to face challenges amidst the global economic landscape. The energy and commodities crisis intensified due to geopolitical tensions between Russia and Ukraine, leading to a surge in inflation rates worldwide, including in Thailand. This crisis created pressure on central banks in many countries to raise interest rates gradually to manage inflation, resulting in an upward trend in global interest rates, particularly in developed countries. Therefore, the Bank of Thailand (BOT) must be cautious in implementing policies and actions to ensure a smooth economic recovery while also addressing the needs of low-income households affected by the rising cost of living and financial burden.

In addition to the immediate challenges, the post-COVID-19 global context compelled the BOT to set up a medium-term strategy to foster sustainable resilience in the Thai economy, particularly during the transition towards the digital and green economy.

5 KEY CHALLENGES FACING THE SMOOTH RECOVERY OF THE THAI ECONOMY:

Given the limited resources available, the BOT needed to prioritize and align efforts towards achieving the greatest impact, focusing on five key areas crucial for the continuous recovery of the Thai economy.

1 / SOLVING THE CRISIS:

In order to support the recovery of people and businesses from the COVID-19 crisis, it was important for the financial sector to provide financial support. This support has been an ongoing challenge since 2020, and this year, the assistance guidelines were adjusted to better proper to the target group.

To effectively address the crisis, the BOT was implementing policies and designing measures with a careful and strategic approach. This address involved considering both the global trend of increasing interest rates and the volatility of financial markets and the context of the Thai economy, which was in the early recovery phase. Additionally, the BOT recognized the importance of addressing societal inequalities that led to differential impacts of the crisis on different groups of people, so it required different types of measures to solve the problems sustainably.

2 / POLICY IN STEP WITH THE TIMES:

To keep BOT's policies to be up-to-date and effective within a new context, the BOT must continue to be able to fully perform its role in maintaining financial and economic stability amidst rapid changes and emerging risks posed by new patterns and players in the coming future.

The BOT adjusted policies in a timely manner by (1) reviewing a range of tools and policies in response to emerging challenges. (2) enhancing the efficiency of financial service supervision to prevent systemic risks. (3) encouraging the financial system to be a mechanism to support economies to achieve environmental sustainability, as well as (4) adjusting the FX ecosystem to suit the new context.

3 / DIGITAL FINANCE:

To promote the potential of the Thai economy, technological development was an important factor in enhancing the potential of the economy.

The BOT promoted digital finance by adhering to the principles of Open Infrastructure, Open Data, and Open Competition. The focus was on developing a robust payment infrastructure to promote efficient financial transactions and business operations. The policy emphasized strict data governance, allowing interconnected parties to benefit collectively. Payment information was utilized for developing policies, fostering innovation, and increasing service efficiency, ultimately leading to competition in payment services.

4 / FOSTERING PUBLIC CONFIDENCE:

The goal was to engage stakeholders and encourage their collaboration with the BOT in advancing various policies to achieve desired outcomes and promote public confidence.

The BOT utilized social listening and data analytics tools to monitor and evaluate emerging news trends continuously. This utilization enabled proactive and timely communication strategies and engagement with key stakeholders. To effectively reach the target audience, especially foundation communities, communication efforts were diversified through the use of short clips, mind maps, and the expansion of influencer and partner networks.

5 / ONE BOT:

To enable the organization to drive as one and be prepared for present and future challenges.

The financial system and economy were evolving rapidly, which made the administration of monetary policy more complex and interconnected. Recognizing this challenge, the BOT understood that successful policy implementation required cooperation among various departments to help each other think in all dimensions and support their respective roles. As such, One BOT played a critical role as an enabler for both short-term and long-term policy implementation success.

KICKSTART TO SOLVE THE STRUCTURAL DEBT CRISIS SUSTAINABLY

Resolving the structural issue of household debt required a long-term solution, therefore the BOT prepared a report outlining policy guidelines and directions for sustainable resolution. The report was scheduled to be released in early 2023, which incorporated short-term, medium-term, and long-term solutions for household debt issues, both within the BOT and in collaboration with external agencies. This effort aimed to align all parties in the same direction.

Moreover, the BOT had the policy to increase rigorous supervision of financial service providers to offer credit with responsibility and fairness throughout the process (before incurring debt, during the time when debt is being accumulated, and until there are difficulties with paying off debts or selling them). The BOT planned to issue a notification regarding responsible lending, and guidelines to assist in the calculation of interest rates that accurately reflect the risk profile of borrowers (known as risk-based pricing). The notification will be released in the near future.

In 2022, the BOT also drafted a royal decree to regulate the hire-purchase and leasing businesses for cars and motorcycles, which provided widespread services to the general public. However, approximately one-third of these transactions were provided by non-bank operators that were not financial institutions or subsidiaries of commercial banks, therefore, not clearly regulated by any agency. Furthermore, complaints from the public about the use of such services have increased. The BOT expected that these measures will help to alleviate household debt problems in the long term.

FROM THE **5 KEY** CHALLENGES TO THAI PEOPLE'S LIVES.

From driving all 5 key challenges throughout 2022, Thai people and related sectors benefited as follows:

1 / PEOPLE AND BUSINESSES:

Despite the gradual subsiding of the COVID-19 crisis in 2022, there were still many individuals, particularly those with low incomes and small business owners, who had not fully recovered. Additionally, the situation of accelerating inflation had severely impacted people. To address this hardship, the BOT shifted the approach from broad-based measures to specific measures that were more consistent and suitable for the target group, to ensure sustainable debt solutions. The measures implemented to help people and businesses could be divided into three groups as follows (see more details in the box on pages 24-25):

3.1.1 Effective measures to assist specific debtors included resolving existing debts by supporting sustainable debt restructuring, corresponding to debtors' ability to repay debts both for businesses and retail customers. Additionally, new funding according to rehabilitation measures was added to support business transformation and recovery.

3.1.2 Measures to help major debtors (sectoral). The BOT actively pushed efforts through the supervised debt remediation of individual borrowers committee, to solve the problem of major debtors, namely the government official's debt group and the student loan fund debt group.

3.1.3 Additional measures to support vulnerable retail debtors included maintaining a reduction in the minimum credit card repayment rate of 5 percent and increasing assistance to retail debtors who had trouble paying their debts. These measures not only aimed to alleviate the burden of debt repayment and ensure liquidity for households affected by the increasing cost of living but also eased concerns about interest rate hikes in particular.

2 / FINANCIAL INSTITUTIONS:

Since the outbreak of the COVID-19 crisis, the BOT has implemented measures to enable financial institutions to provide more extensive assistance to debtors. However, by mid-2022, the Thai economy showed a sign of recovery more robustly, leading to positive status for many debtor groups. The financial institution system remained stable during this period, with high levels of capital, reserves, and liquidity. Consequently, the need for lenient regulatory regimes decreased, and the BOT gradually adjusted supervision regulations toward normalization. The BOT, therefore, revised the supervision regulations to be in line with economic conditions and financial institutions' status, as follows:

3.2.1 The restriction on the dividend payout rate for commercial banks was lifted. Previously, these banks were limited to paying out no more than 50 percent of their annual net profit as dividends. However, the capital adequacy stress test outcome showed that the banking system was strong and had sufficient capital and reserves to support future risks. Furthermore, several foreign regulators had already abolished their dividend restriction policies during the COVID-19 pandemic to ensure financial stability.

3.2.2 The rate of contributions from financial institutions to the Financial Institutions Development Fund (FIDF) will be adjusted back to its normal rate of 0.46 percent per year from the temporal reduction to 0.23 percent, starting from the beginning of 2023. Financial institutions must be required to resume sending funds to FIDF at the same rate, in line with the positive trend in the economy. The fact that the financial institutions remained strong ensured their ability to support debtors' recovery in the future without relying on the reduction of FIDF remittances. This adjustment also helped FIDF gradually decrease its debt according to the set target, without creating unnecessary burdens on the economic and financial system in the long run.

3 / FINANCIAL SYSTEM:

During the COVID-19 pandemic, global financial and capital markets, including Thailand's financial market, were affected, creating an uncertain situation. To promote economic recovery and ensure financial stability, the BOT took measures to increase liquidity by establishing the Joint Venture Asset Management Corporation to manage non-performing loans effectively, in addition to the existing internal management of each bank. Additionally, the BOT adjusted some measures to normalization by ending the role of the Corporate Bond Stabilization Fund (BSF), which was established in 2020 to provide short-term liquidity backstops to businesses with good fundamentals but facing temporary liquidity problems, as the need for help diminished in line with economic activity recovery.

4 / ECONOMY AND SOCIETY:

In the post-COVID-19 era, the Thai economy and society were grappling with new challenges, such as the swift evolution of digital technology, conducting businesses with environmental sustainability in mind, and innovations of the future world. The BOT recognized the significance and obstacles that came with this new context, as a result, the new financial landscape was published. The BOT aimed to communicate principles, directions, and policy guidelines revamping the Thai financial sector in the years ahead, with the ultimate goal as follows:

3.4.1 Utilizing technology and data to develop innovations and financial services that fully addressed the needs of users, while promoting equal competition.

3.4.2 Facilitating the transition of businesses and households to the digital financial economy and dealing with environmental risks in a timely manner without causing negative impacts on a wider scale.

3.4.3 Managing major and emerging risks in a timely and adaptable manner suited to dynamic evolving situations, without transferring those risks to the broader economy, financial systems, and consumers.

Throughout the year 2022, the BOT made significant progress by following the aforementioned direction. Notable achievements included the extension of central financial infrastructure development and the creation of a digital currency under the Central Bank Digital Currency (CBDC) project in collaboration with the Central Bank of the United Arab Emirates (CBUAE) and the Central Bank of the People's Republic of China Digital Currency Institute (PBC DCI). Additionally, the BOT implemented the Multiple Central Bank Digital Currency Bridge (mBridge) project to test wholesale CBDCs for cross-border remittance and exchange transactions. This reduced the cost of international transactions by 50 percent and reduced the transfer time from the current system from an average of 3-5 days to just a few seconds. Additionally, settlement risk was also reduced.

In addition, the BOT also successfully pushed for a 50 percent reduction in service fees for each transaction that utilized digital identity verification and authentication (National Digital ID: NDID). This fee reduction will help support the expansion of the use of NDID services in the future.

The year 2022 was a significant milestone for the new financial landscape adjustment of the Thai economic society. The BOT gradually published directional papers on various aspects throughout the year, including (1) the directional paper on transitioning towards environmental sustainability under the new Thai financial landscape, and (2) the directional papers and policies for the banking group's digital asset business and (3) payment directional paper under the new landscape of the Thai financial sector. These papers served as a crucial reference point for the public to understand the BOT's operational directions in supporting the financial sector to play a driving role in the economy, and to cope with changes in various aspects in a concrete and timely manner.

Various operations and measures that the BOT had pushed forward in the past and throughout 2022, under the 5 key challenges, helped alleviate Thai people, businesses, and the overall Thai economy from the COVID-19 crisis. Furthermore, the BOT encouraged the financial sector to support the transformation of the Thai economy towards a digital and environmentally friendly economy timely, smoothly, and sustainably.

1

3

2

4

1 & 2 Mr.Ronadol Numnonda, Deputy Governor, Financial Institutions Stability of the BOT, and Miss Suwannee Jatsadasak in a joint press conference with Ministry of Finance for holding "Dept Mediation Fair: There is a debt that needs to be solved, to sustainable start" event

3 Miss Siritida Panomwan Na Ayudhaya in a press conference of Directions for Development of Payment Systems under the New Financial Sector Landscape of Thailand

4 BOT Digital Finance Conference 2022 under the theme Collaborate. Innovative. Inspire.

MEASURES TO SUPPORT PEOPLE AND BUSINESSES TO **'SOLVE THE CRISIS'**

1

EXISTING MEASURES TO ASSIST SPECIFIC AREAS OF DEBTORS.

Although the BOT began to normalize policies and measures, some measures focusing on specific debtors were still implemented. These measures included:

RESOLVING EXISTING DEBTS

The BOT encouraged financial institutions to take proactive steps to address existing debts through Long-Term Debt Restructuring Measure, that supported sustainable debt restructuring in a manner that aligned with the debtor's ability to repay, both for businesses and individuals. This measure will continue to be in effect until the end of 2023, in line with the ongoing economic recovery that has yet fully resumed. As of the end of December 2022, there were 5.22 million accounts under the assistance of financial institutions, specialized financial institutions (SFIs), and non-bank financial service providers, representing a total debt of 3.38 trillion baht.

Additionally, the BOT made significant progress in providing support to debtors of specialized financial institutions (SFIs), through the Performance Agreement Sub-Committee (SubPAC), requiring all SFIs to have Key Performance Indicators (KPIs) in assisting debtors through sustainable debt restructuring.

Assistance to debtors under rehabilitation measures was also included in "Asset Warehousing", as a temporary supplementary measure that allowed businesses to transfer collateral assets alleviating debt burdens. Under this program, businesses had the right to repurchase their assets under suitable and fair conditions within a specified period and can lease them back for business use. As of December 31, 2022, a total of 409 businesses had received assistance under the program, with the value of transferred assets amounting to over 57,626 million baht. This assistance represented 57.6 percent of the 100,000 million baht allocated for the program from the beginning.

NEW FUNDING UNDER THE SPECIAL LOAN MEASURES

The BOT implemented this measure to support business recovery and transformation. As of the end of 2022, the business sector received credit lines amounting to over 205,198 million baht, with 58,840 cases (an average approved amount of 3.5 million baht per case). More than 75 percent of the recipients were small and medium-sized enterprises (SMEs), of which 70 percent of them located in provincial areas (as of December 31, 2022).

Furthermore, the BOT also improved the criteria for rehabilitation loans by introducing a new type of loan called a "Transformation Loan". This loan option aimed to assist SMEs who were willing to adjust their businesses in the transition period and promote competitiveness in the new global context, from digital technology trends, environmentally friendly business framework, and innovation of the future world. The credit line was extended to serve the diverse needs of businesses seeking investment, development, or opportunities to enhance their potential with more flexible guarantees.

In 2022, the BOT implemented a series of measures to help people and businesses that have not yet recovered from COVID-19 as follows:

2

MEASURES TO HELP SIGNIFICANT DEBTORS (SECTORAL)

The BOT pushed efforts through the supervise debt remediation of individual borrowers committee to address the issue of sectoral debt, specifically the debts owed by government officials and the student loan fund. Successfully resolving this issue required a strong cooperation mechanism among various agencies to achieve sustainable outcomes.

Regional Debt Mediation Fair at Khon Kaen province.

3

ADDITIONAL MEASURES TO SUPPORT VULNERABLE RETAIL DEBTORS.

In 2022, the BOT introduced additional measures aimed at mitigating the burden of debt repayment to keep the liquidity for households affected by the rising cost of living and alleviating concerns about rising interest rates as follows:

(1) Maintain a reduction in the minimum credit card debt repayment rate of 5 percent until the end of 2023, increasing to 8 percent in 2024, and returning to the normal rate of 10 percent from 2025 onwards. Additionally, the BOT maintained extending the repayment period of 1-year digital personal loans until the end of 2023, instead of the normal 6-month criteria, in line with the long-term debt restructuring measures.

(2) Increasing assistance for retail debtors who were struggling with debt repayment by adjusting the conditions of the "Debt Clinic Program" which provided various options to credit cards, cash cards, and unsecured personal loans debtors who became Non-performing loans (NPLs) to more participate in the project, and adding alternative schemes to installment payment corresponding to the ability to pay. There were 102,647 account receivables who had signed contracts as of December 31, 2022. Moreover, the Ministry of Finance and the BOT jointly organized the "Debt Mediation Fair: There is a debt that needs to be solved, to sustainable start" event. This event provided online channels for debtors to negotiate with creditors and find a sustainable solution. As of December 31, 2022, there were 390,601 registered debtors, of which 37 percent were able to receive assistance agreements.

BOX 1

CHANGES FOR PERSEVERANCE, EQUAL TREATMENT, JOINT COOPERATION

80 Years whereby The BOT Continues Its Mandate for the Thai Public in a World of Change

Year 2022 marked the 80th anniversary for the Bank of Thailand (BOT) since the opening ceremony of this headquarters at Si Phraya Road on December 10, 1942. While 80 years may not be long compared to other central banks in the world, but within Asia, the BOT is the 3rd oldest central bank, after the Bank of Japan (140 years) and the Reserve Bank of India (87 years).

Throughout the past 80 years, the BOT faced with challenges from various dimensions ranging from the currency crisis during WWII, banknote scarcity, the capital king crisis, Tom Yam Koong crisis, as well as the economic crisis as a result of the COVID-19 pandemic. The BOT had always held true to its principals of preserving the country's economic and financial stability.

On occasion of this 80th anniversary, the BOT organized various activities which not only commemorated and celebrated this organization that was tasked with maintaining economic stability, but was also a chance to revisit and review the roles, values, and meaning of the BOT in a time where the Thai economy is facing big challenges, to prepare to address future economic problems.

CHANGES FOR PERSEVERANCE

One of the highlight events this year was the "Governors' Talk", which provided an opportunity for the previous 6 governors (1997-2020) to share their experience and perspectives in carrying out a central bank's mission during different eras. This served to pass on the knowledge and thinking principles on how to build a strong foundation to carry out the BOT's mandates and preserve the country's economic and financial stability.

Although challenges will differ across time periods, social conditions, technological changes, but all previous governors face the same key problem, which is ensuring that the BOT continues to carry out its duties as a central bank to the fullest capacity, and appropriately utilize the experiences and knowledge base accumulated by the BOT, while at the same time preparing the BOT to adapt to any changes. Changes for perseverance is the key to preserve the BOT's ability to carry out its central bank mandates.

EQUAL TREATMENT

In addition to deciphering and learning from past experiences, the BOT still promoted the continued development of the Thai economic and financial systems through its annual Symposium. In 2022, the "BOT Symposium 2022: Strengthening Economic and Financial Foundations for the Next Generation" served as a "knowledge arena" to academics and researchers, both internal and external to the BOT, to come together and find a "new solution" to the Thai economy and financial systems. This will assist the BOT in guiding the Thai economy through the next century in a sustainable manner. Another highlight of the event was the "BOT Digital Finance Conference 2022", which was an arena to exchange knowledge on building a foundational root and developing digital finance. In addition to seminars held to share experiences from experts, both domestically and internationally, a financial technology demo was also available for those who were interested.

Furthermore, on the occasion of its 80th anniversary, the BOT also cooperated with the Bank for International Settlement (BIS) to organize the BOT-BIS Conference. Participants included central bank Governors from more than 10 countries, experts, senior executive of international and domestic organizations, to discuss methods of carrying out a central bank's mandate in light of changing global contexts so that the BOT may "act fairly" in a time where the world is revolving faster and stronger.

JOINT COOPERATION FOR DEVELOPMENT

A rapidly evolving world brings with it complex challenges and different stakeholders. The BOT recognizes that working alone is insufficient to accomplish its mandate to the best of its capabilities. Therefore, the BOT emphasizes communication, listening to public opinions, and cooperating with relevant stakeholders, which will help bring about the best solutions for Thai society and economy.

At the beginning of the year, the BOT launched the program "Financial Landscape" which would serve as the blueprint to develop Thailand's financial system. Furthermore, the BOT continually published various documents and policies to take into account the public's opinion and recommendations, as well as organized events so that relevant parties could have the opportunity to discuss and share their outlook for the future of the Thai financial sector.

In addition to hearing public opinion, the BOT also hosted 2 hackathon events namely "BOT Policy Hackathon" and "CBDB Hackathon" to allow interested parties to contributed to policy issues and recommendations. Participants were able to propose methodologies to improve and enhance digital finance, green finance, debt resolution, as well as the adaptation of central bank digital currencies (CBDC) to build upon financial and business innovations. This was the first time the BOT organized such hackathon, which was met with positive responses and an abundance of participants, with a total of 247 teams of 647 participants across both events.

Joint cooperation not only provided the BOT with new analytical frameworks that could be adapted to policy implementation, but also represented an opportunity for interested parties to learn about the country's economic and financial landscape and directly shared experiences with policy makers as well.

CHAPTER

2

SMOOTH TAKEOFF WITH CONTINUED ECONOMIC RECOVERY

Thailand's economic recovery in the post-COVID period

Policy normalization and the measures for vulnerable debtors implemented by the BOT

Developing Thailand's financial landscape

THAILAND'S ECONOMIC RECOVERY IN THE POST-COVID PERIOD

Over the past two years, the world as well as Thailand went through several waves of the COVID-19 outbreak, which prompted several containment measures across the globe, including international travel restrictions as well as domestic lockdown. Against this backdrop, the Thai economy registered a negative growth rate of 6.1 percent in 2020; a similar figure to the Asian Financial Crisis, which saw a contraction rate of 7.6 percent in 1998. Although, by 2021, the Thai economy rebound with an expansion rate of 1.5 percent, economic recovery remained weak due to the country's heavy reliance on tourism sector which was hit by new waves of the pandemic during 2021.

Thai economy registered a negative growth rate of

↓ 6.1% **in 2020**

Thai economy rebound with an expansion rate of

↑ 1.5% **in 2021**

Thai economic recovery gained momentum and the recovery became more broad-based (less K-shaped) with a growth rate of

↑ 2.6% **in 2022**

Nevertheless, for 2022, the Thai economic recovery gained momentum and the recovery became more broad-based (less K-shaped) with a growth rate of 2.6 percent. The Omicron outbreak during early 2022 had limited impact on the economic activities thanks to a good vaccination coverage, which strengthened immunity against the disease and helped Thai people to "live with COVID". Furthermore, the government's gradual relaxation of containment measures and the reopening of the border for foreign tourists helped revive tourism sector and private consumption, which became the main drivers for the Thai economy.

Thailand's economic recovery was, however, not smooth as the world experienced a new challenge: the intensification of geopolitics, especially the Russia-Ukraine conflict, which prompted the western allies to impose draconic sanctions in an attempt to isolate Russia out of the global economic and financial system. Such developments caused a global energy and commodity supply shock, leading to higher production costs worldwide. At the same time, global demands for goods and services picked up after recovering from the COVID-19 crisis, and hence, the combination of these demand and supply shocks, caused inflation to rise sharply in many countries. This prompted central banks, especially those in advance economies, to raise policy rates at a rapid pace to curb inflation. Moreover, Chinese economy, which used to be a global growth engine, did not perform well and experienced a slowdown due to its zero-COVID policy and the crisis within the real estate sector.

THESE DEVELOPMENTS AFFECTED THAILAND'S ECONOMIC RECOVERY THROUGH **THREE MAIN CHANNELS** AS FOLLOWS:

THE FIRST CHANNEL EXHIBITED THROUGH VOLATILITY IN THE GLOBAL FINANCIAL MARKET.

Concerns of rapid monetary policy tightening, particularly by the US Federal Reserve, which often increased its policy rate more than the market expectation due to high inflation outturns, caused fear of global recession. Thus, investors' sentiment became risk-off and sought higher returns by reverting back to holding the US dollar. This caused the US dollar to appreciate by 8 percent since the beginning of the year, leading to depreciation of other currencies as well as inducing volatilities in the foreign exchange market, especially for the developing countries. Stock market indices, meanwhile, declined in many countries as a result.

In contrast to other emerging economies, impacts on the Thai financial market were limited due to Thailand's strong economic fundamental, especially its external position. Overall, the Thai baht depreciated by 3.93 percent on average since the beginning of the year amid appreciation of the US dollar. Although the baht depreciated and became weakest in October at 37.9 THB/USD, the baht regained its value towards the end of the year on the back of current account surplus thanks to improvement in foreign tourist receipts. The baht depreciated in line with other trading partners' currencies and was, in general, depreciated less than other currencies in the region. The volatility of Thai baht was also more or less in line with other currencies in the region.

In addition, due to Thailand's strong external position, depreciation of the baht had limited impact on its financial stability. Thailand's foreign reserve exceeded short-term external debt by 3.2 folds; corporate sector had a low level of short-term external debt in which most of them were covered by foreign exchange hedging. Moreover, the strong external stability was also reflected by positive net inflows of capital of non-resident since the beginning of the year. Less volatility of the SET index was observed compared to other stock markets in the region, while Thailand's stock prices fell less than the other regional indices.

THE SECOND CHANNEL WAS THROUGH HIGHER PRODUCTION COSTS AND INFLATION.

The Russia-Ukraine conflict adversely affected the global production and supply chain of various products. Both Russia and Ukraine were crucial suppliers of energy and commodities, including, crude oil, natural gas, metal, nickel and palladium, chemical fertilizer, and wheat. As prices of these commodities accelerated, higher production costs were partially passed on to Thai consumers, resulting in an inflation rate of 6.08 percent, a much higher rate compared to 1.23 percent on the previous year. Higher inflation eroded consumers' purchasing power, while higher production costs lowered firms' profit margin which suppressed private investment.

Nevertheless, Thailand's headline inflation reached its peak at 7.86 percent in August and has declined continuously in tandem with energy inflation, following a fall in global crude oil prices. The falling crude oil prices came after concerns regarding the global economic slowdown as well as the poor performance of the Chinese economy which lowered demand for oil. Meanwhile, several countries were able to find alternative sources of oil and energy other than Russia, which helped mitigate impacts of the supply shocks induced by economic sanctions. Core inflation, on the other hand, remained high, following higher prices of raw material as well as a gradual cost pass-through of firms and businesses, especially in food segment.

THE LAST CHANNEL WAS OBSERVED THROUGH THE GLOBAL ECONOMIC SLOWDOWN,

especially those of advanced economies as well as China, which adversely affected Thailand's exports. Merchandise exports to the EU, the US, and China, declined since the third quarter, especially on goods which were sensitive to trading partners' demand. These goods included automobile, textile, electric appliances, and chemical products.

Nevertheless, improvement in the tourism sector as well as strong private consumption had helped mitigate the impacts of the global economic slowdown, which resulted in a better economic growth compared to the previous year. The tourism sector recovered continuously on the back of increasing foreign tourists, especially after the uplift of the Thailand Pass registration, together with removal of travel restriction by many countries. Most of foreign tourists were short-haul travelers such as Malaysian, Vietnamese, and Indian, in which their economic recoveries remained robust. The private consumption, likewise, expanded well, supported by a broad-based improvement in employment and income. Most of the labor market indicators resorted back near the pre-COVID level, while consumers' confidence continued to improve in line with increasing economic activities.

In addition, continued economic recovery helped bolster expansion of private credit as well as helped improve debt serviceability of households and businesses. Thus, the overall financial stability remained sound. Nevertheless, balance sheet of some SMEs and households remained vulnerable which could be sensitive to high living costs and high debt exposure.

POLICY NORMALIZATION AND THE MEASURES FOR VULNERABLE DEBTORS IMPLEMENTED BY THE BOT

POLICY NORMALIZATION OF THE BOT

Over the past two years of COVID-19 outbreak, the number of economic policies and measures were deployed to cope with immediate crisis that caused severely and widespread impacts. Most measures were broad-based manner focusing on alleviating the impact of COVID-19 on speed and inclusiveness. In the second half of 2022, the economy began to show signs of continued and more broad-based recovery, couple with rapidly increases in inflation since the beginning of the year. The policy, therefore, should be normalized to preserve and maintain economic and financial stability.

Nevertheless, some businesses and households remained fragile since their incomes had not fully recovered and were sensitive to the rising living costs, coupled with the elevated debt burdens. The policy normalization must be conducted with caution and the targeted measures were needed to stay in place to support vulnerable groups. Furthermore, the normalization process must be in line with the economic recovery and the inflation trend to ensure the smooth takeoff of every part in the economic system.

RAISING THE POLICY RATE FROM

0.5% TO 1.25%

In the first half of 2022, the Monetary Policy Committee (MPC) continued to maintain the policy rate at the low level. The MPC put emphasis on supporting the economic recovery as the recovery was in the early phase and uneven across sectors (K-shaped recovery). Some economic sectors remained vulnerable, especially tourism and services which had adversely impacted from the Omicron variant outbreak. Meanwhile, Thai inflation rate increased mainly from the cost-push factors resulting from the Russia-Ukraine war and soaring energy and commodity prices worldwide. The demand-pull inflationary pressure remained subdued as economic recovery was still in an early phase. The medium-term inflation expectation remained anchored within the target range. The MPC, thus, looked through the short-term volatility of inflation and held the policy rate in the first half of the year to help facilitate a sustained economic recovery.

In the second half of 2022, the MPC gradually raised the policy rate and put more weight on the inflation. The MPC deemed that the economy continued to recover but the risks to inflation increased. The economic recovery was mainly driven from tourism and private consumption, resulting in higher and more broad-based economic activities, employment, and income (less K-shaped recovery). Nevertheless, some SMEs firms and households remained vulnerable from the not-fully-recovered income and sensitive to the higher living costs and elevated debt burdens.

In the second half of this year, the MPC monitored risks to inflation closely. The increases in headline inflation had stemmed primarily from cost-push factors, peaked in the third quarter, and receded as projected. The core inflation increased mainly from the cost pass-through. Although the demand-pull inflationary pressure was limited due to the early phase of economic recovery and the medium-term inflation expectation remained anchored within the target range 1-3 percent, the MPC still observed risks to inflation carefully.

Under the context of Thai economy and inflation, the MPC assessed that the gradual and measured normalization remained an appropriate course for monetary policy. Starting from August 2022, the MPC gradually raised the policy rate by 0.25 percentage point at every meeting from 0.50 percent to 1.25 percent at the end of 2022.

The MPC deemed that too soon or too much policy rate increases would interrupt the economic recovery, especially the vulnerable groups in tourism and service sectors which were under the recovery process. Although the inflation risks heightened, the demand-pull inflationary pressure was limited. Hence, there was no need to raise the policy rate aggressively like central banks in other countries which faced higher demand-pull inflationary pressure from overheated economy and tighter labor market.

In contrast, the MPC deemed that holding the policy rate or too slow policy rate increases would add upward inflationary pressure and pose risks to macro-financial stability in the long run. Holding the policy rate at the low level when inflation risks heightened could entail greater costs on the economy since aggressive large rate hikes, after the inflation has already elevated, would have adverse impacts on households and businesses income, cost of living, and debt burden. Moreover, holding the policy rate low for long would accumulate risks in the long run, such as entrenched debt problems or underpricing of risks behavior, which were like time-bombs posing vulnerability to the economy and dragging the economic growth eventually.

THE RESUMPTION OF THE FIDF FEE CONTRIBUTION AT A NORMAL RATE OF 0.46% OF DEPOSITS PER ANNUM FROM 2023 ONWARDS

The FIDF fee reduction was one of the broad-based financial support measures for alleviating the impact of COVID-19 outbreak on households and businesses. The BOT and the FIDF halved the annual contribution rate from financial institutions to the FIDF from 0.46 percent of deposits to 0.23 percent for three years (2020-2022). This temporary reduction was intended for financial institutions to manage their liquidity and pass on such cost savings to fully assist their debtors affected by the pandemic.

The measure helped lower funding costs for the financial institutions by approximately 105 billion baht (about 35 billion baht per year). Consequently, these cost savings were passed

on to assist more than 9 million households and businesses[1], mainly through lowering reference lending rates (MLR MOR and MRR) by 0.40 percent per annum, thereby immediately easing the debtors' interest burdens (constituting more than half of the total loans under the FIDF assistance measure of 10.7 trillion baht). The remaining part of these FIDF cost savings was passed on through other relief measures such as debt moratoria, debt restructuring, fixed loan rate cut, and bank fee reduction.

Given the more broad-based economic recovery combined with the soundness of the Thai banking system, the BOT has gradually adjusted towards the monetary and financial support policy normalization. The FIDF fee reduction and other broad-based support measures could be unwound, while prevailing some targeted measures to support remaining vulnerable groups. The BOT therefore raised the FIDF fee back to its normal level at 0.46 percent per annum from 2023 onwards. This normalization will support the FIDF debt pay-off as scheduled and avoid imposing fiscal burden in the long run.

The resumption of the FIDF fee contributions may to some extent bring about an increase in lending rates. Nonetheless, since the first policy rate hike on August 10, 2022 financial institutions have been mindful of interest rate transmission, i.e. proportionally more on MLR for large corporates rather than MRR, to soften the impact on prevailing vulnerable debtors, both SMEs and households. Moreover, financial institutions continue supporting vulnerable groups through targeted measures taking into account their debtors' conditions and debt serviceability, such as long-term debt restructuring, debt clinic, and debt mediation fair.

LIFTING OF THE DIVIDEND PAYOUT RESTRICTION WHILE MAINTAINING PRUDENT APPROACH

During the COVID-19, the BOT restricted the dividend payout rate to no more than 50 percent of the annual net profit to allow banks to accumulate capital buffer to absorb shocks amid the uncertainty of the pandemics.

As the Thai economy recovered and the results of the bank's capital adequacy assessment under stress testing scenarios showed that the banking system remained resilience with sufficient capital and loan loss provision against the risks that may arise in the future, the BOT, therefore, lifted the dividend payout restriction, in line with the other regulators that lifted dividend payment policy restrictions. In contrast, if the restriction had been maintained, it would undermine stakeholders' confidence such as investors, analysts, and credit rating agencies. However, the BOT has continuously encouraged banks to exercise dividend policy with cautions taking into consideration the financial performance and forward-looking risks and uncertainties.

[1] The number of assisted debtors might be double counted if a debtor received financial assistance more than once or more than one type of assistance.

THE MEASURES FOR VULNERABLE DEBTORS

Despite clear economic recovery trend, there was still an uneven recovery across economic sectors (K-shaped recovery) especially for vulnerable debtors whose income was not fully recovered and exacerbated by the higher cost of living. The BOT then continued to implement the targeted measures to support these vulnerable debtors through encouraging the implementation of the existing measures and proposing new measures. The BOT regularly reviewed and revised the measures to ensure flexibility during the changing circumstances and suitability to debtors' context by considering the overall Thai economy and the problem at the household level to ensure both smooth takeoff of the economy and sufficient support to vulnerable debtors.

ENCOURAGING THE IMPLEMENTATION OF THE EXISTING TARGET MEASURES

By encouraging the implementation of the existing target measures, the BOT aimed to support both the public and businesses, which were still unable to recover or whose recovery from the COVID-19 pandemic might even take longer, by providing the measures that would be effective at least until the end of 2023, in line with the economic recovery outlook.

1 / DEBT RESOLUTION THROUGH THE MAIN MEASURE:

The "Long-term Debt Restructuring" measure encouraged financial institutions to sustainably provide debt restructuring for the public and businesses by tailoring it to the changing ability to repay and providing assistance to a large number of debtors in a timely manner to prevent them from turning into non-performing loans. The "Long-term Debt Restructuring" measure will be effective until the end of 2023. In addition, the "Asset Warehousing Program" also allowed debtors to transfer their underlying collateral to the financial institutions under the condition that they would reclaim the ownership at the agreed price and be able to lease their assets from the financial institutions to continue their business operations. The debtors can apply for the "Asset Warehousing Program" until April 2023.

2 / NEW LENDING FACILITY:

The "Special Loan Measure" would provide additional liquidity to support the operation of businesses. Under the "Special Loan Measure", the BOT also proposed a "Transformation Loan" by expanding the credit limit to match the investment needs of those businesses that have the potential to improve, develop, and enhance their business capabilities to compete in the New Global Context challenges, i.e., the adoption of digital technology, the implementation of environmental frameworks, and the future innovation, under the flexible guarantee scheme. The "Transformation Loan" and the "Special Loan" phase 2 that were designed for those who were not ready for the business transformation, were offered until April 2023.

HELPING TROUBLED BORROWERS

The BOT implemented supplementary channels to help borrowers with financial difficulties.

1 / DEBT EXIT FASTLANE

is an online platform which allows debtors to submit requests for debt assistance via the BOT. With the BOT monitoring the results, the likelihood for help improves.

2 / DOCTOR DEBT

is a comprehensive debt-related consultation program for individual and SMEs borrowers. The service covers debt-related advice, relief measures, as well as the preparation for debt application

and negotiation. Interactive "Doctor Debt Chatbot" is available on the website and online @doctordebt. Doctor Debt also provides personalized consultation service performed by financial specialists. Interested clients may register for appointment on the website free of charge.

3 / DEBT CLINIC OR DEBTCLINIC BY SAM

is a debt restructuring program for non-performing credit cards and unsecured personal loans, centrally provided by Sukhumvit Asset Management (SAM). This program aims to be one of the country's infrastructure to solve household debt problem and was established under the cooperation of the BOT, Thai Bankers' Association (TBA), Association of International Bank (AIB), Credit Card Club, Personal Loan Club, commercial banks, non-banks, SFIs and SAM.

PROVIDING ADDITIONAL MEASURES FOR VULNERABLE RETAIL DEBTORS

These measures aimed to support the debtors with unsecured loans whose income was not fully recovered and who struggled with the higher cost of living. The BOT aimed to match each measure with the specific problems experienced by each group of debtors.

1 / FOR NON-NPL RETAIL DEBTORS

the BOT extended the period of reducing the minimum monthly repayment for credit card at 5 percent for another year from the existing measure, which initially ended at the end of 2022, to 2023 instead. The minimum monthly repayment would step up to 8 percent and then resume to the normal rate at 10 percent in 2024 and 2025 respectively. The BOT also maintained the one-year maturity extension of digital personal loans, rather than the standard six months, until the end of 2023. These measures would help reduce the debt burden and maintain liquidity for vulnerable households.

2 / FOR NPL RETAIL DEBTORS

Debt Clinic adjusted the applicant's qualification to cover new NPLs. It also added 2 choices of repayment schemes to better suit the individual debtor's repayment ability. The debtors who enter the program and select a shorter scheme would pay an even lower interest rate, and hence are incentivized to complete their debt restructuring program more quickly.

PROMOTING COMPREHENSIVE AND SUSTAINABLE DEBT RESOLUTION

The BOT and Ministry of Finance conjointly organized the "Debt Mediation Fair" or "Debt Fair" aiming to link the debtors and their creditors through an online registration platform, opening from 26 September 2022 to 31 January 2023. The event gathered 68 financial institutions in total including commercial banks, SFIs, non-banks, and asset management companies (AMC); and covered more loan products than the previous year's event, i.e., credit cards, personal loans, title loans, hire purchase, nano finance, housing loans, commercial loans, loans with AMCs, and loans with SFIs.

Between November 2022 and January 2023, the Debt Fair was also organized on-site in provinces including Bangkok, Khon Kaen, Chiang Mai, Chonburi, and Songkhla to better serve the regional borrowers who needed consultation on their debt problems with Doctor Debt staff or wanted to apply for additional loans with SFIs.

BOX 2

DEBT MEDIATION FAIR

THE SAYING **"DEBT IS ONE'S PERSONAL PROBLEM"** IS CORRECT ONLY PARTIALLY.

In fact, if the population is largely indebted, the nation's economy is fragile. Debt-driven economic growth trades-off with long term sustainability.

Hence, solving "household debt" problem indeed helps not only the people, but also the economy at the same time.

The Bank of Thailand (BOT), in cooperation with the Ministry of Finance, organized the

"DEBT MEDIATION FAIR OR DEBT FAIR"

aiming to solve debt problem for households comprehensively and sustainably. For a specific period of time, it provided an online platform for debtors to register, and later negotiate repayment schemes with the lenders. Physical events were also organized in Bangkok and some regional provinces, where Debt Doctors were present to provide debt-counselling service.

Some examples of Debt Fair's success cases were as follows.

FROM (ONCE) CLUELESS TO SUCCESSFUL DEBT PAY-OFF

Debtor X was a 47-year old construction contractor. In 2013 he hire-purchased a used car for approximately 500,000 baht to be repaid in 60 months. After a year, as his income was lacking, he was unable to pay the due amounts. The car went into seizure, and auction subsequently. Nonetheless, the auction price turned out lower than the outstanding debt. Thus, he was left with a 160,000 baht residual debt to be paid. However, he never contacted the lender again until years passed quickly.

The lender, unable to reach the borrower, sold the bad debt to an Asset Management Company (AMC). Debtor X was later notified about his outstanding debt in September 2022 along with a legal notice to seize his dwelling home. He was very worried. Later, he heard of the Debt Mediation Fair and came to the regional event in Khon Kaen Province. After a consultation with a BOT Debt Doctor, he registered online to solve his debt problem with the AMC. Besides, he learnt more about the calculation of important figures such as the debt outstanding, interest and penalty amounts, and how to approach a debt negotiation. As a result, Debt Mediation Fair enabled him to pay off his debt and settle his case successfully in December 2022.

Details: Residual debt in 2015 equaled 160,000 baht. Court ruling amount including interest totaled 234,000 baht. The AMC offered a significant haircut allowing him to pay-off his debt and free his home from auction.

CHANGE FROM CREDIT CARD DEBT TO TERM LOAN

Another example, Q was a food seller at a local market. He had been using credit cards for more than 10 years and had been repaying the minimum amounts for the past 3 years. At first, he thought that having credit cards was necessary in case of travelling. Nonetheless, after calculation he discovered that the principal amounts of his debts barely came down. Hence, he was determined to stop using the credit cards and pay off his debts. He registered through the Debt Mediation Fair and asked to convert the credit card outstanding debt to a 2-year term loan.

Details: Credit card outstanding 17,000 baht, minimum repayment (5 percent) 850 baht per month, converted to term- loan to be paid-off in 2 years.

BOT Debt Doctors gave debtors counselling service at Regional Debt Mediation Fair.

DEVELOPING THAILAND'S FINANCIAL LANDSCAPE

In addition to dealing with immediate challenges, the BOT formulated policy guidelines, "Repositioning Thailand's Financial landscape", to support Thailand's transition to a digital economy[2] and sustainable growth, especially in the environment[3]. The policy emphasized a balance between supporting innovation development and appropriate risk management under three key directions:

1/ LEVERAGING ON TECHNOLOGY AND DATA TO DRIVE INNOVATION

Repositioning the digital landscape of the Thai financial sector allowed service financial sector to leverage on technology and data to drive innovations and better financial services that served the consumers' needs under the principle of 3 Open's:

(1) Open Infrastructure, to allow various types of service providers to access key financial infrastructure at reasonable and fair costs, as well as to develop the necessary financial infrastructure to efficiently support the transition of financial system to a digital economy.

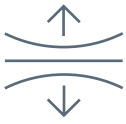
(2) Open Data, to allow consumers to utilize their data through the mechanism of data portability and data exchange among service providers.

(3) Open Competition, to allow existing and new players to provide financial services and develop financial innovations.

[2] During the past 5 years (2018-2022), the Thai people's usage of digital payment has increased 4.7 times from an average of 89 times per person per year in 2018 to 425 times per person per year at the end of 2022.
[3] Thailand is ranked as one of the top 10 countries that are most affected by climate change (World Bank, Global Climate Risk Index 2021). In addition, 60% of Thailand's exports may be affected by environmental trade barriers going forward (estimated by the Bank of Thailand).

2 / MANAGING TRANSITION TOWARDS SUSTAINABILITY

Transforming the financial landscape towards sustainability would steer the financial sector to incorporate environmental risk assessment into their business operations, and support businesses in transitioning toward a green economy without negatively disrupting the economy. Furthermore, this would assist households or vulnerable sectors to smoothly transition to the new work in a sustainable manner.



3 / SHIFTING FROM STABILITY TO RESILIENCY

On regulatory front, the BOT is shifting towards a more flexible regulatory framework enabling financial service providers to capitalize on the digital trend while ensuring that they could respond to significant and new forms of risks in an efficient manner.

In February 2022, the BOT published the Financial Landscape Consultation Paper on "Repositioning Thailand's Financial Sector for a Sustainable Digital Economy[4]", which was open for feedback from stakeholders and the public. Most of the comments agreed with the guiding principle to strike the appropriate balance between promoting innovation and managing risks amid the transition to the digital economy and sustainable growth. Additionally, most feedbacks also (1) recommended that many issues were the national agenda that requires cooperation from all sectors, and (2) pointed to the significant challenge of implementing such policies to deliver concrete and positive results.

The BOT incorporated the feedbacks and recommendations into the policy-making process. Various projects were constantly undertaken to ensure concrete results

[4] For more information, please see https://www.bot.or.th/landscape/files/consultation-paper-en.pdf

REPOSITIONING THAILAND'S FINANCIAL LANDSCAPE IN 2023

1 DIGITAL

1 / OPEN INFRASTRUCTURE

In September 2022, the BOT published "Payment Directional Paper"[5] to communicate key directions and policies for the development of payment systems.

The BOT further promoted efficient utilization of existing payment system infrastructure; for example, a network of cross-border payment service providers was expanded, both in the form of QR payment and international money transfers, to provide convenient, secure, and cost-reasonable services. The Thai payment service providers are currently linked to infrastructures in six countries, namely Japan, Cambodia, Vietnam, Malaysia, Indonesia, and Singapore.

In addition, the BOT continued to develop and test new infrastructures that would help increase efficiency, reduce cost of financial transactions, and support the transition toward digital financial services. For instance, in the third quarter of 2022, the Multiple Central Bank Digital Currency Bridge (mBridge) project pilot collaborating with the Bank for International Settlements and four central banks[6], was conducted to test the introduction of wholesale central bank digital currencies (wholesale CBDCs) issued by central banks in four currencies at the financial institution level for real-value cross-border payment transactions.

2 / OPEN DATA

The BOT encouraged a mechanism that allowed consumers to share their data stored at one service provider with other service providers (data portability) under their consent, which helped users to experience services with convenience and lower costs. A pilot program was the exchange of data among financial service providers under the Digital Statement (dStatement) project. The dStatement project was to help facilitate consumers who would like to use a bank statement as an evidence to apply for financial services. For example, consumers could submit requests to the bank that they had bank accounts to send their bank statement directly and digitally to other recipient banks where they would like to apply for loans.

3 / OPEN COMPETITION

Since 2020, the BOT has introduced new players to undertake Digital Personal Loan Business which requires lenders to leverage alternative data for credit approval process and provide services through digital channels. At the end of 2022, there were six service providers[7] in operation, offering lending services to 2.3 million accounts with total outstanding loans of 6,856 million baht.

[5] For more information, please see https://www.bot.or.th/landscape/en/payment/overview/

[6] The Multiple Central Bank Digital Currency Bridge (mBridge) project is a collaboration between the Bank of Thailand, the Hong Kong Monetary Authority, Central Bank of the United Arab Emirates, and the Institute of Digital Currency Studies of the Central Bank of the People's Republic of China, supported by the Innovation Development Center of the Bank for International Settlements. For more details of the test results, please see https://www.bot.or.th/Thai/DigitalCurrency/Documents/ProjectmBridge_October2022.pdf

[7] i.e. SEAMoney (Capital) Company Limited, Ascend Nano Company Limited, AEON Thana Sinsap (Thailand) Public Company Limited, Kasikornbank Public Company Limited, Ayudhya Capital Services Company Limited, and Siam Commercial Bank Public Company Limited

Mr. Sethaput Suthiwartnarueput gave an opening remarks in a public hearing on “Repositioning Thailand’s Financial Landscape”

Mrs. Roong Mallikamas, Deputy Governor, Corporate Development of the BOT, in a public hearing on “Repositioning Thailand’s Financial Landscape”.

A special stage regarding “Repositioning Thailand’s Financial Landscape”.

2 SUSTAINABLE

1 / ENVIRONMENTAL FRONT

In August 2022, the BOT published the Directional Paper on "Transitioning towards Environmental Sustainability Under the New Thai Financial Landscape (Green Directional Paper)[8]" outlining five key building blocks to promote the role of the financial sector in supporting the business sector to smoothly adapt to environmental changes in a timely manner. These included:

(1) Encouraging financial institutions to incorporate environmental aspects into their business operations and decision-making processes and offering financial products and services that met the needs of businesses. (Products and Services)

(2) Developing a common classification system for an environmentally friendly economic activities to help businesses assess and manage risk for their transition plan, and assist financial institutions in allocating capital more effectively. (Taxonomy)

(3) Developing a systematic and accessible database, including data disclosure standards for financial institutions, to promote data availability and transparency. (Data and Disclosure)

(4) Designing and establishing incentive structures that supported businesses, particularly SMEs, to adjust in a timely manner and encourage financial institutions to develop diverse range of financial products at incentivizing costs that stimulated businesses to adjust during transition period. (Incentive)

(5) Developing knowledge and skills of personnel in the financial sector to promote sufficient expertise in environmental risk management. (Capacity Building)

The BOT also developed a policy statement on "Internalizing Environmental and Climate Change Aspects in Financial Institution Business." The policy statement was intended to provide a standard reference for financial institutions to internalize environmental aspects into their business operations. It was open for public consultation at the end of 2022 and was expected to be published in January 2023.

In terms of collaboration with other institutions, the BOT collaborated with the Ministry of Finance and related agencies to develop the measures for credit facility under the "Emergency Decree on the provision of assistance and rehabilitation of business operators impacted by the COVID-19 pandemic, B.E. 2564 (2021)" This covered granting transformation loans to help entrepreneurs invest in strengthening their capacity and competitiveness, including making their businesses more environmentally friendly[9].

Furthermore, the BOT established a network for cooperation on environmental data with 24 organizations in public and private sectors, including the Securities and Exchange Commission, the Office of Natural Resources and Environmental Policy and Planning under the Ministry of Natural Resources and Environment, the Thailand Greenhouse Gas Management Organization, the Board of Investment, the National Statistics Office, and the Federation of Thai Industries. The network was established to help facilitate the exchange and use of environmental data among organizations in a comprehensive and efficient manner. The BOT initiated a Stat Network seminar for encouraging more discussions on enhancing environmental data and pushing this agenda together.

[8] For more information, please see https://www.bot.or.th/Thai/SustainableBanking/Documents/GreenDirectionalPaper-EN.pdf
[9] Notification of the Bank of Thailand No. SorKorSor1. 1/2565 Re: Measures on providing credit facility for business operators under the Emergency Decree on the provision of assistance and rehabilitation of business operators impacted by the COVID-19 pandemic, B.E. 2564 (2021) (No.3) (Transformation Loan)

2 / HOUSEHOLD FINANCE FRONT

The BOT, together with relevant agencies, continuously issued measures to help debtors through various projects, such as sustainable debt relief measures, credit rehabilitation measures, and the Debt Mediation Fair. The measures were gradually shifted toward a more targeted manner, particularly for the vulnerable groups, as the economy continued to recover.

In addition, the BOT prepared to issue a guidance document on Sustainable Solutions to Thailand's Structural Debt Overhang Problems for communicating the BOT's approach to resolve such problems with comprehensive and principle-based solutions. These included:

(1) Efficiently resolving existing debts, to resolve existing and persistent debt problems through continuous push for measures. The BOT also formulated guidelines to help debtors with persistent debt problems to end their debts in appropriate repayment periods.

(2) Improving quality of new lending, to prevent the problem of incurring excessive debt and increase access to formal credit. Examples included the promotion of responsible retail lenders to prevent customers from incurring excessive debt, or expanding credit access to those with higher risk through the adoption of risk-based pricing mechanism.

(3) Laying the foundation for sustainable solutions, to achieve the objectives with sustainable results through the creation of a complete and accurate debt burden database which could be used for credit approval with the risk-based pricing mechanism. Moreover, the cultivation of financial knowledge and skills would play a critical part in promoting the responsible borrowing behavior.

The above guidance document was expected to be published within the first quarter of 2023.

3 / SHIFTING FROM STABILITY TO RESILIENCY

In July 2022, the BOT published the Directional Paper on "Banking group's digital asset business: supervisory approach and management of risks to the financial system[10]" to communicate the compliance requirements for the operation of digital asset businesses and related transactions of both commercial banks and other entities in the Financial Business Group. The BOT incorporated comments from public hearing to improve the regulation on supervision for undertaking digital asset businesses of the banking group, which later issued in October 2022.[11]

In August 2022, the BOT issued the draft Royal Decree to regulate the business of the hire purchase and leasing of cars and motorcycles (Royal Decree). The draft Royal Decree aimed at maintaining financial stability and enhancing consumer protection since the hire purchase and leasing businesses tended to expand continuously, with outstanding balances of more than 1.8 trillion baht, or 12.3 percent of total household debt, and the number of customer complaints were increasing. In this regard, the BOT took the opinions and recommendations from the public to revise the draft Royal Decree. The Ministry of Finance was considering submitting a proposal to the Cabinet for approval, which expected to be published in the Royal Gazette by 2023.

[10] For more information, please see https://www.bot.or.th/landscape/files/da-supervision-en.pdf
[11] Bank of Thailand Notification No. SorNorSor. 6/2565 Re: Regulations on Supervision for undertaking digital asset businesses of the banking group, dated October 6, 2022

BOX 3

POLICY HACKATHON

AN OPEN-MINDED TO "LISTEN" AND JOINTLY DEVELOP WITH THE PUBLIC SECTOR.

The BOT Policy hackathon project was a part of the events held on the 80th Anniversary of the BOT. This project aimed to listen to the opinions from the public and provided the new generation an opportunity to present their policy ideas to solve challenges related to 3 policy topics that fostered the development of the country's financial system, which were digital finance, sustainable finance and solution to debt problems. These were key policies that the BOT placed importance on and included in the future financial landscape.

The project received positive feedback from the public. More than 145 teams and in total 387 participants joined this competition. In addition, the participants' background was diverse, not only the university students but also the experienced workers from a variety of professional fields. The outcomes were the open ideas with the most applicable solution.

POLICY HACKATHON WAS AN OPEN PROJECT FROM THE BOT TO "LISTEN" AND JOINTLY DEVELOP WITH THE PUBLIC SECTOR.

FROM PUBLIC TO THE BOT: A LABORATORY FOR NEW POLICY MAKING.

The prominent outcome of the BOT Policy Hackathon project was to let the public design and propose their practical policies where there were many interesting projects submitted.

For digital finance, while policies focusing on the use of technology and data to develop new financial innovation as well as the virtual bank were presented, "HaHai", the winning team, proposed the concept of establishing a platform for receiving a transfer of alternative data to support better access to the lending service as well as to promote the customers' right to data portability. The important ground of this policy was the establishment of the "Data Portability Platform: DPP" where the data subject had a right to request to transfer his or her alternative data, such as the behavior of utility bill payment, purchase of goods and services, possession of insurances or cars, to other data controllers so that the credit service providers can incorporate this kind of data into their loan approval considerations which eventually less-opportunity persons were better access to financial services.

For green finance, participants of green finance proposed policy directions which encouraged financing ecosystem development in term of Environmental, Social, and Governance (ESG) for sustainable finance. For "5P Policy Hacker", the winning team of this topic proposed "3Greens policies" consisting of (1) Green Thinking, building up environment knowledge through various communication channels (2) Green Funding, supporting environment-friendly investments of SMEs and big enterprises through funds, and (3) Green Database, developing databases concerning green-data which consisted of carbon dioxide and greenhouse gases emission data. The core of these 3 dimensions was to transform to net zero within 2065-2070, by raising awareness of every sector and making them take part to achieve this green mission.

For solution to debt problems, the last topic focused on policies or solutions to household debt problems through improve financial literacy, encouraging accessibility to funding sources, establishing central database, and developing tools to help in financial planning. "3 Sor", the winning team of this topic proposed the 3 Sor model, "Sorn" (teach), "Serm"(reinforce), and "Sang" (develop) which aimed to raise awareness of financial literacy, and find sustainable solutions to household debts.

Although, the BOT Policy Hackathon competition ended, the ideas coming from engaged people would still be further developed. The important objective of the BOT is to expand and adopt these works in the real policies. The BOT will consult with each team and related stakeholders from public and private sectors, to search for methods to make the right policies and financial innovations which are truly served needs of the society.

Participants proposed ideas for policy development to the judges during the final round of the BOT Policy Hackathon. This showed how the BOT was open to people in making and developing policies.

CHAPTER

3

KEY OPERATIONS

BOT's Core Responsibility

- Creating Trust and Credibility in Carrying out the Mandate of Maintaining Economic and Financial Stability.
- Development to Embrace Change and Create Growth Opportunities in the Future
- Embedding Sustainable Development
- Creating trust and credibility for the public
- Internal Excellence Strengthening

Future of the BOT

BOT'S CORE RESPONSIBILITY

CREATING TRUST AND CREDIBILITY IN CARRYING OUT THE MANDATE OF MAINTAINING ECONOMIC AND FINANCIAL STABILITY.

MAINTAINING ECONOMIC AND FINANCIAL STABILITY

MONETARY POLICY

The Bank of Thailand (BOT) gradually raised the policy rate to support the economic recovery and limit the risks of inflation. In 2023, the Thai economy continued to improve and was more broad-based recovery after the relaxation of containment measures and border controls in Thailand. The key economic drivers were tourism and private consumption which continued to strengthen, as well as a more broad-based recovery in employment and labor income. Meanwhile, headline inflation increased due to energy and food prices but was expected to decline in line with the global energy prices and return to the target range of 1-3 percent in 2023. However, the BOT would continue to closely monitor risks to inflation, especially a potential increase in cost pass-through. Financial system stability remained resilient overall, but the financial positions of some SMEs and households remained fragile and sensitive to the rising living costs and debt burdens as incomes had yet to fully recover.

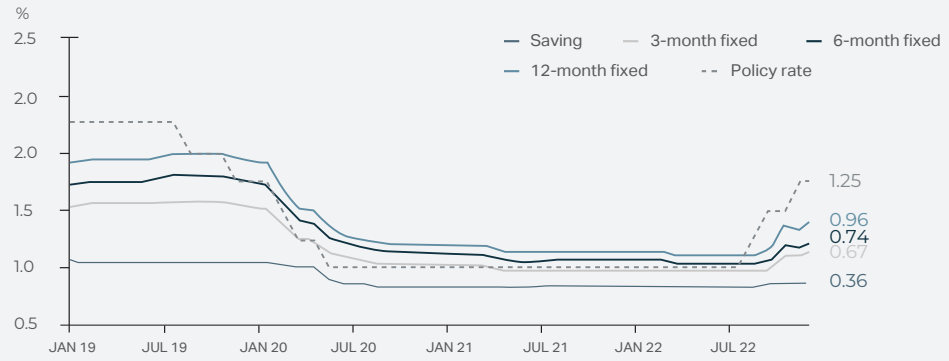
The Monetary Policy Committee (MPC) assessed that the extraordinarily accommodative monetary policy became less needed as the Thai economy would continue to recover but with increased inflation risks. The policy rate should be normalized to the level that is consistent with sustainable growth in the long term in a gradual and measured manner. This aimed to decelerate the speed of rising in funding costs in the private sector and helped people and businesses remain resilient. Therefore, from August 2022, the Thai policy rate was gradually increased 3 times by 0.25 percentage points from 0.5 to 1.25 percent at the end of 2022.

The interest rates of commercial banks and the government bond yields gradually rose in tandem with the policy rate while private sector financing continued uninterruptedly both in the loan and bond markets. Commercial banks gradually increased the minimum retail rate (MRR) lower than the minimum loan rate (MLR)[12] concerning the fragility of retail loans which is mainly referred to MRR. Financing volumes still expanded as the large corporate loans continued to grow while the SMEs loans contracted in the second half of 2022 due mainly to the repayments of soft loan measures. Corporate bond issuances also continued to grow and function normally.

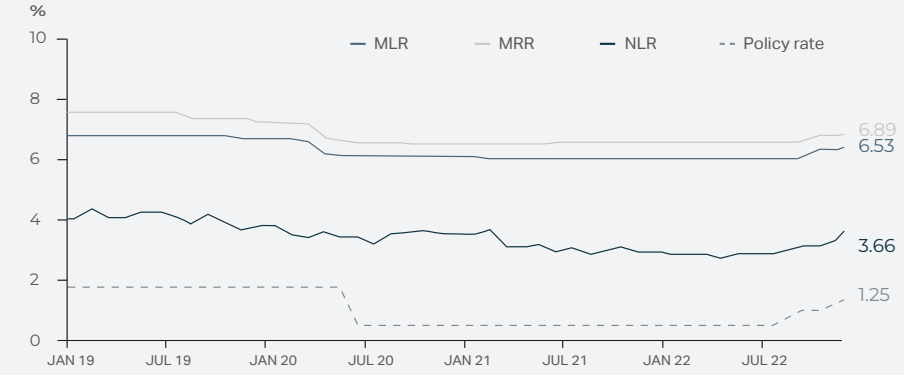
Dr. Piti Disyatat at the press conference on the MPC meeting result

[12] Commercial banks increased minimum retail rate (MRR) and minimum loan rate (MLR) by 0.32 and 0.49 percentage point, respectively. (Calculated change in MRR and MLR of 13 commercial banks from January 1 to December 30, 2022)

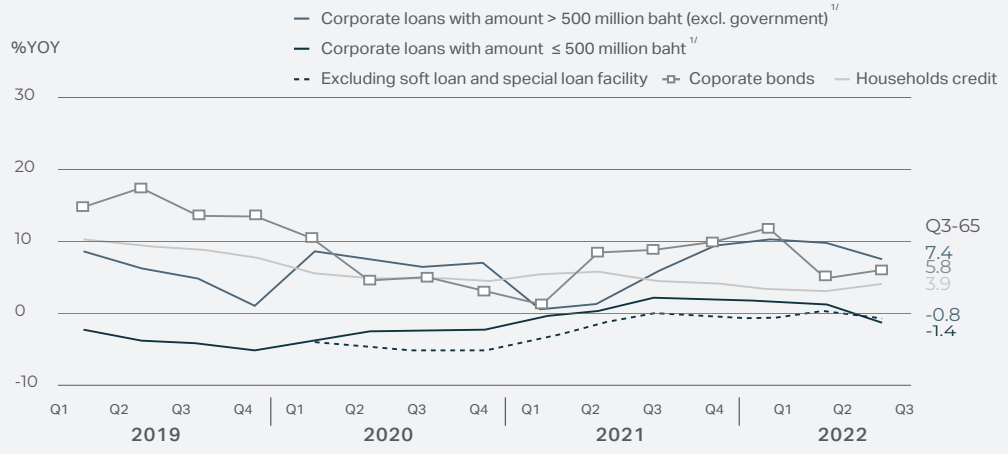
COMMERCIAL BANK DEPOSIT RATES



COMMERCIAL BANK LENDING RATES



PRIVATE SECTOR FINANCING



Note: monthly average of 13 commercial banks (data as of December 30, 2022) where in November 2022, savings rate and fixed deposit rates for some products have decreased slightly following UOB acquisition of CITI's retail banking businesses.
Source: BOT

Note: 1/ Credit limit at each commercial bank (financial services businesses are excluded)

BOX 4 7 COMMON MISCONCEPTIONS ABOUT THE BANK OF THAILAND'S OPERATION

FOREIGN EXCHANGE RATE

1 The BOT can set the exchange rate at any pre-determined level.

→ **Under the managed float exchange rate regime, the Thai Baht is mainly driven by the market mechanism.**

- Since July 2, 1997, Thailand has adopted the managed float exchange rate regime where the value of the Thai Baht has since been mainly determined by the market forces based on economic fundamentals. The BOT may consider intervening in the foreign exchange market from time to time in order to prevent excessive volatilities of Baht which might disrupt real sector transactions or threaten the system's financial stability.

- There are several countries employing the managed float exchange rate regime, for example, South Korea, Indonesia, Malaysia, and Brazil.

2 Changes in the value of international reserves are solely driven by BOT's operations to maintain the stability of the Thai Baht.

→ **Changes in international reserves could also be a result of return on investment and revaluation of its assets.**

- The international reserves change can be driven by 3 factors: return on investment, asset revaluation (mark-to-market), and central bank's foreign exchange rate operations.

- The BOT manages international reserves based on 3 principles: (1) preservation of value (security), (2) sufficient liquidity to conduct monetary and exchange rate policy (liquidity), and (3) maximize return on investment at an acceptable risk level (risk-adjusted return).

- In 2022, the decrease in foreign exchange reserves was mainly due to the revaluation loss after the rapid strengthening of US dollar against other currencies. When the US dollar strengthens, the valuation of other currencies vis-à-vis the US currency declines, leading to a notional fall (unrealized loss) in the overall reserves position.

3 Rapid depreciation of the Thai Baht reflects the country's deteriorating external stability.

→ **The depreciation of the Thai Baht has been influenced by both external and internal factors. Meanwhile, Thailand's external stability remains strong and surpasses" international standards in many dimensions.**

- Thai Baht depreciation in 2022 was largely driven by the appreciation of the US dollar which was in line with the directions of other currencies.

- To measure a country's external stability, one needs to employ both asset and liability indicators such as international reserves to external debt ratio. At present, Thailand has relatively strong external stability with net reserves of $246 billion, or 49 percent of GDP, the 11th highest and the 6th highest in the world respectively. The external debt is at 37 percent of GDP, the 8th lowest in the world. Moreover, international reserves are 3 times the amount of short-term external debt (triple the international standard of one time) and 10 times the value of imports (well above the international standard of 3 months).

4 Inflation surge was mainly driven by the depreciation of the Baht.

→ **The escalation of inflation in Thailand is primarily due to the rise of global energy and food prices, whereas the impact of the Baht depreciation on inflationary pressure is deemed limited.**

- Currency depreciation contributes to higher import prices of goods and services.

- However, the impact of continuous baht depreciation on inflation is limited as import items account for only

a small proportion (16 percent) of Thailand's inflation basket, and most of these items are energy-related products that are subject to global price fluctuations. In addition, the Thai government has been implementing various supporting measures aiming at alleviating the cost of living. Essential products such as food and clothing are also mostly sourced domestically, which results in a limited impact of Thai Baht depreciation on inflation.

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5 The bilateral exchange rate, US Dollars to Thai Baht, reflects the country's competitiveness in global markets.

→ **The Nominal Effective Exchange Rate (NEER) is more essential than the bilateral exchange rate (US Dollars to Thai Baht) in reflecting the country's competitiveness with trading partners. Moreover, the value of exports depends more on trading partners' economic conditions than on currency value.**

✳ The exchange rate that is commonly referred to is a bilateral exchange rate (US Dollars vs Thai Baht). However, as Thailand engages in trade with many countries, the Nominal Effective Exchange rate (NEER) and the Real Effective exchange rate (REER) would better reflect Thailand's competitiveness in the global market. It is important to note that, the bilateral exchange rate and effective exchange rate do not necessarily move together. For example, in 2022, despite the depreciation of the Thai Baht by 3.6 percent against the US Dollar, NEER surged by 2.9 percent.

✳ A study at macro-level found that the value of exports is influenced more by the economic situation and purchasing power of trading partner countries than the movements of the exchange rate. For instance, in 2010-2011, despite a strong Thai Baht, Thai exports still managed to expand. In contrast, during the period of Thai Baht depreciation (2014-2016), exports contracted.

Capital Flows

6 A negative interest rate differential must cause capital outflows.

→ **Although negative interest rate differentials can contribute to capital outflows, that might not always be the case as there might be other factors at play.**

✳ Interest rate differential is one of the significant factors that influence investment decisions. However, there are several other factors that investors also consider such as the path of the interest rate differential, asset price trends, and the risks associated with investing in a particular country.

✳ For example, in 2022, India and Indonesia policy rates were higher than that of the US, resulting in a positive interest differential. However, both countries experienced a net capital outflow. In contrast, Thailand and South Korea had lower policy interest rates than that of the US, resulting in a negative interest differential. Yet, there was still a net capital inflow in the two countries, which suggested that foreign investors consider many other factors rather than interest rate differential.

Commercial Bank Net Interest Margin

7 Should the BOT predetermine the appropriate level of net interest margin (NIM) for commercial banks?

→ **No, since the setting of the NIM can have significant impacts on bank operations, independence, competitiveness, and the ability of customers to access credit, particularly vulnerable groups that have high credit costs.**

✳ NIM is one of many indicators being used to determine banks' profitability. However, it doesn't cover other incomes and expenses that are related to lending operations, especially credit costs and other operational costs such as salaries expenses where each commercial bank has its own unique practices, strategies and customer bases.

MONETARY OPERATIONS

The BOT's monetary operations are conducted to ensure that the prevailing money market rates are in line with the policy rate set by the MPC. To achieve this, the operations are designed to maintain an appropriate liquidity condition under which the banking system can meet its liquidity demand, both for the maintenance of required reserves and for settlement balances.

In 2022, excess liquidity in the Thai banking system fell mainly due to the BOT's operations and an increase in demand for currency. As a result, total liquidity absorption declined by 552,030 million baht from the previous year. Adjustments were carried out via four open market operations instruments with details as follows.

1 / BANK OF THAILAND BONDS AND BILLS ISSUANCE

The issuance of BOT bonds and bills is the principal channel used to absorb structural liquidity surplus in the system and to contribute to the development of Thailand's bond market by enhancing market liquidity and efficiency. In planning the bond issuance strategy, the BOT takes into consideration the prevailing market and liquidity conditions, as well as the government's funding plans.

In 2022, the supply of public sector debt securities remained elevated. The BOT and the Public Debt Management Office (PDMO) collaborated closely with a view to maintain an appropriate level of overall sovereign bond supply, including treasury bills, government bonds, and BOT bonds[13]. To this end, the outstanding amount of BOT bills and bonds was reduced by 494,399 million baht to 2,403,266 million baht at the end of the year (20,675 million baht of which was held by the BOT through bond buyback operations). This accounted for approximately 40 percent of the total outstanding liquidity absorption.

Regarding the BOT bond issuance program for 2023, maintaining an appropriate supply of public debt securities remains a key consideration. Hence, the BOT will continue to reduce the supply of selected tenors to enhance liquidity for government bonds in comparable sectors. Meanwhile, the supply of floating-rate bonds (FRB) linked to the Thai Overnight Repurchase Rate (THOR) index will continue to be raised to help promote the use of THOR as a new reference rate in derivatives and cash products and expand the choice of fixed-in come instruments in the market.

[13] For more details on the BOT Bond issuance Program for 2022, please refer to https://www.bot.or.th/English/PressandSpeeches/Press/2022/Pages/n0165.aspx

2 / BILATERAL REPURCHASE TRANSACTIONS WITH PRIMARY DEALERS

The BOT uses Bilateral Repurchase (BRP) transactions with appointed BRP Primary Dealers (BRP PDs) to manage short-term liquidity fluctuations, particularly those resulting from government cash flows and seasonal factors, such as demand for currency. To enhance the signaling of the MPC's stance, the 1-day BRP transactions are conducted as a fixed-rate tender at the policy rate. Meanwhile, Term BRP transactions (7-day, 14-day, and 1-month tenors) are executed as variable rate tenders, in the form of spreads over the policy rate (Indexed BRP). Thus, the interest rates earned on these Term BRP transactions will vary with changes in the policy rate over the duration of the transactions.

BRP transactions are carried out with BRP PDs in the morning of every business day[14]. These BRP PDs serve as liquidity adjustment intermediaries between the BOT and other financial institutions, through the use of Private Repo transactions or Uncollateralized Interbank markets. This BRP PDs scheme helps support financial market development by fostering an adoption among interbank participants of market practices that are in line with international standards.

In 2022, liquidity absorption through BRP transactions increased by 38,142 million baht. At year end, BRP transactions totaled 2,525,905 million baht, which accounted for approximately 42 percent of the total outstanding absorption.

3 / FOREIGN EXCHANGE SWAP TRANSACTIONS

The Foreign exchange swap (FX swap) transactions are used as a supplementary absorption tool, as they can be adjusted fairly flexibly according to the BOT's liquidity absorption needs and market conditions. In 2022, outstanding FX swap transactions decreased by 49,959 million baht to 1,074,354 million baht or 29,560 million USD at year end. They constituted approximately 18 percent of the total outstanding absorption.

In 2022, the BOT changed the conduct of foreign exchange swap transactions to competitive bidding through Electronic Swap Auctions (e-Swap) in order to improve transparency and efficiency in both normal and stressed market conditions.

4 / OUTRIGHT PURCHASES AND SALES OF PUBLIC SECTOR DEBT SECURITIES

The BOT can permanently inject liquidity into or drain liquidity from the banking system by purchasing or selling outright public sector debt securities with appointed e-Outright counterparties. In 2022, the BOT purchased a total of 105,883 million baht in public sector securities. Meanwhile, 107,489 million baht of public sector securities held in the BOT's portfolio matured during the year. In sum, outstanding securities in the BOT portfolio fell by 1,606 million baht in 2022.

The BOT also operates end-of-day liquidity adjustment windows in the form of overnight standing facilities, which include Lending and Deposit Facilities. Through these windows, financial institutions with liquidity deficit or surplus at end-of-day can borrow or deposit funds overnight at policy rates plus or minus 50 basis points, respectively. The interest rates on the Deposit and Lending Facilities together form an interest rate corridor that helps limit short-term volatility in the money market interest rates. In 2022, most transactions in the end-of-day liquidity adjustment windows were deposits, which averaged around 796 million baht per day.

[14] Except on days of MPC meetings where BRP transactions are carried out in the afternoon instead after the release of MPC interest rate decision.

FINANCIAL MARKETS DEVELOPMENT

The global reference rate reform that resulted in the permanent cessation of USD LIBOR (London Interbank Offered Rate) from July 2023 has led to the discontinuation of Thailand's reference rate THBFIX (Thai Baht Interest Rate Fixing) from the same date. In 2022, the BOT continued to ensure the readiness of market participants and to encourage the active transition of the outstanding THBFIX contracts to the new reference rate THOR (Thai Overnight Repurchase Rate), in order to mitigate risks and impacts that might result from the THBFIX discontinuation.

Since its first publication, THOR has increasingly been used in various financial products, including loans, BOT's floating rate bonds, debentures, as well as structured notes issued by financial institutions. One of the THOR-linked debentures was issued where the proceed was used for projects with sustainable and environmental goals (ESG bonds).

The more widespread usage of THOR as a reference rate has contributed to the continuous growth of THOR Overnight Indexed Swap (OIS) in 2022, both in the total notional amount and the variety of market participants. The market volume of THOR OIS increased to 5.5 trillion Baht from 0.27 trillion Baht in 2021, reflecting the improved liquidity in the derivatives market which helped enhance the efficiency of corporate hedging and risk management.

On the foreign exchange market front, the Bank for International Settlements (BIS) together with 16 central banks and private sector participants have developed the FX Global Code, a set of global principles of good practice in the wholesale foreign exchange (FX) market, to promote effectiveness, transparency, and good governance. In January 2022, the BOT published the Statement of Commitment to display its adherence to the FX Global Code. Furthermore, the BOT encourages all wholesale FX market participants in Thailand to apply the FX Global Code. It is expected that all commercial banks in Thailand will adhere to the code by the end of 2024.

FOREIGN EXCHANGE REGULATIONS

In April 2022, the BOT further relaxed foreign exchange regulations under the New Foreign Exchange Ecosystem Development Plan to allow more flexibility for Thai individuals and firms in conducting foreign exchange transactions and enhance their resilience to exchange rate volatility. The relaxations can be summarized as follows:

1 /

Relaxing rules on foreign exchange transfers to support trade and investment and provide more convenience for residents in conducting foreign exchange transactions, such as allowing Thai companies to deposit funds into their own accounts abroad for payment of obligations, allowing Thai companies to purchase foreign currencies for transfers domestically as necessary (e.g. for payment for goods with prices linked to the global market), and providing more foreign currency-denominated investment options for Thai investors.

2 /

Allowing more flexibility in foreign exchange risk management to enable the business sector to manage risk more effectively and better cope with exchange rate volatility, such as allowing hedging of foreign exchange risk exposures arising from domestic payment for goods with prices linked to the global market and hedging on forecasts of revenues or expenses without tenor limit.

3 /

Reducing supporting document requirements when conducting foreign exchange transactions to help reduce transaction costs and facilitate electronic transactions. Customers of commercial banks who have undergone the banks' Know-Your-Business process will not be required to submit underlying documents each time they undertake regular foreign exchange transactions.

In addition, in 2022 the BOT also relaxed regulations on money changing businesses to allow greater flexibility and support services through electronic channels. Moreover, the Ministry of Finance revised rules on conducting foreign exchange businesses, as proposed by the BOT, to allow flexibility as well as facilitate the adoption of innovation and new technology, such as allowing service providers to register with the BOT to test new technology in a sandbox environment; raising supervision standards by ensuring that service providers and those involved in the businesses had proper qualifications in order to enhance credibility and to be more in line with the international standards; issuing licenses to service providers on an entity basis (previously issued for each service location); and allowing residents to use foreign currency proceeds from abroad to transact with non-bank foreign exchange business operators more flexibly. The relaxations would support the BOT's plan for a new FX service provider landscape to be implemented, which was also a part of the comprehensive FX Ecosystem Development Plan.

RESERVE MANAGEMENT AND OPERATIONS

In 2022, the global economy and financial markets experienced three major headwinds, namely (1) aggressive monetary policy tightening, specially from The Federal Reserve (Fed), to curb a four-decade high inflation pressure that resulted from prolonged supply disruption, energy crisis caused by Russia's invasion of Ukraine, and elevated demand due to massive COVID-19 policy stimulus, (2) looming recession risk as a consequence of broadening price pressure, high interest rate, and fragile recovery in China as stringent COVID-19 lockdown policy and weak property sector weighed heavily on the outlook, and (3) intensified geopolitical tensions between US and China in key strategic industries as well as situation in Taiwan Strait.

The BOT closely monitored such developments and adjusted our reserve portfolio accordingly based on three main objectives of liquidity, safety, and risk-adjusted return, given investment constraints and guidelines as mandated by the BOT Board. Therefore, to ensure achievement of long-term capital preservation goal amid structural shift in world economy going forward, the BOT placed great emphasis on risk diversification and embarked upon several initiatives as follows: (1) allocating investment to countries with competitive advantage given emerging megatrends, together with utilizing various hedging tools to better navigate through market volatilities and mitigate drawdown of reserve portfolio, and (2) introducing sustainable investment framework that combined environmental, social, and governance (ESG) considerations into investment decisions with intention to support long-term objective of enhancing risk-adjusted return along with creating positive real-world impact.

THE SUPPLY-SIDE AND ECONOMIC RESTRUCTURING OPERATIONS

MONITORING, ANALYZING, AND ASSESSING THE CURRENT STAGE OF THE REAL ECONOMIC SECTOR

The BOT's supply-side and economic structure operations aimed to monitor, analyze, and assess the current stage of the real economic sector, as well as acknowledge rapidly changing situations, especially in people's behaviors and structural economic changes, on both sectoral-based and area-based dimensions. This was to gather information and tools that correlated with the current situations and challenges in order to support Monetary Policy Committee (MPC) on its policy decision, which was based on effective, timely, and appropriate information. Also, the information was utilized as a reference for policy implementation with related agencies through the BOT's three regional offices: the Northern Regional Office, the Northeastern Regional Office, and the Southern Regional Office[15].

[15] the BOT's three regional offices include the Northern Regional Office (located in Chiangmai province) 2) Northeastern Regional Office (located in Khon Kaen province) and 3) Southern Regional Office (located in Songkhla province)

In 2022, the BOT's works on supply-side and economic structure played a vital role in maintaining Thailand's financial stability and supporting inclusive and sustainable economic recovery, since the Thai economy has faced various challenges and more complexities in the recovering period from the COVID-19 crisis and, also the changing of world economic and political order.

Access to the economy on a sectoral and area-based basis enhanced the BOT's operation by providing it closer to stakeholders and the real economic sector through conversations with the business sector, associations, and government organizations to receive feedback and identify the challenges entrepreneurs face. This also assisted the BOT in obtaining in-depth information that would be useful in assessing the impact and trend of the situation, in relation to each area's economic capabilities in accordance with the uncertainty of the financial landscape, in a timely and effective manner, as well as enhancing policy and financial measures communication.

The Business Liaison Program (BLP), which the BOT has continuously operated since 2004, is one of the key contributors who conduct fieldwork to collect feedback from all stakeholders. In 2022, the BLP focused more on proactive work, adaptation, and connection with society in order to assist businesses in each sector to plan their future operations by holding meetings and conducting field interviews with more than 1,000 parties, private entrepreneurs, and households, covering all regions and key important sectors such as wholesale and retail, manufacturing, service, real estate, etc.

In addition, the BOT conducted field interviews with business sectors, especially various associations, such as the Thai Chamber of Commerce, the Federation of Thai Industries, and Thai Hotel Associations, including the Thai Bankers' Association, in order to hear and discuss the current situation, challenges and constraints that businesses face. This aimed to gain a better understanding of the current problem and obstruction of Thai entrepreneurs in the recovery stage after the COVID-19 pandemic. Therefore, the BOT was able to design more flexible financial measures that covered a wide range of issues and responded to the point such as transformation loans, not only to rehabilitate or assist businesses during the short term but also to support future transition steadily.

In 2022, the BOT expanded its policy-based working to include broader household-level coverage, targeting people who had previously not been accessed to any relief measures over the past years. Therefore, the three regional offices represented the central bank in each region and play important roles in (1) monitoring and analyzing the current stage of the regional economy by using both quantitative and qualitative data, as well as building engagement with the business unit in the area and (2) assisting and developing the local economy by providing academic perspectives, including both informative data and financial economy suggestions which would advocate private sector's economic well-being, and thus would promote sustainable growth for the regional economy.

Mr. Mathee Supapongse, Deputy Governor, Monetary Stability of the BOT gave a special lecture on "Policy to manage the baht amid global economic volatility" at the Federation of Thai Industries

Regional field trip to visit agriculturists and businesses in targeted industries

THE BOT SYMPOSIUM

The three regional offices organized the annual symposium, aiming to communicate the BOT's policies and enhance stakeholder engagement within the region. The symposium topics were related to specific regions. The Northern Region Office holds the theme "Moving Beyond the Curve: Overcoming Challenges and Moving Forward to the New Economic and Financial Landscape". The Northeastern Region Office holds the theme "Ready to Transform: Embracing the New Economy", and the Southern Region Office holds the theme "The Next Steps for Southern Economy: Adapting to Global Trends and Shaping the New Future".

All three symposiums had a similar structure with three sessions including; (1) Governor's Talk, which touched on the current economic and financial trends at both national and regional levels, the direction of monetary policy, and measures to help debtors during the recovery of the Thai economy, as well as policy-setting towards the new economy; (2) Presentation of the BOT's studies, which provided future prospects of the economic and financial landscape given the digital and sustainable trends, highlighting each region's potential to enhance its financial and economic sectors with the new global trends; and (3) Panel discussion with representatives from the business sector and government agencies to exchange views on how businesses adapt to the new world.

As the BOT executives had the opportunities to engage and obtain opinions directly from local businesses and relevant stakeholders in the regions, the BOT produced a series of "Let's talk with the BOT - Special", namely "Taew Aew Chang Moi: Reviving the Old City of Chiang Mai" and "Exploring the Creative Economy in the Old Town of Songkhla". These reflected the cooperation between entrepreneurs, government, and community members who worked together to foster creativity that added value to local businesses. Additionally, "Exploring Khon Kaen Smart City" highlighted the city's development, which had proper and sufficient infrastructure to add on to the livelihood of the Khon Kaen community.

In addition, the BOT organized roundtable discussions with representatives of businesses, educational institutions, and financial institutions, in order to communicate and get feedback on the BOT policy implementation, such as digital finance and financial measures. Moreover, the BOT recognized the importance of the young generation and engaged in discussions with students and first jobbers on the topic of "What do they want to see in their hometown in the next ten years?", focusing on how to promote local jobs and career growth without the need to move elsewhere. This would eventually help drive more sustainable growth of the local economy.

MAINTAINING FINANCIAL INSTITUTIONS' SYSTEM STABILITY

SUPERVISORY POLICIES AND REGULATIONS FOR FINANCIAL INSTITUTIONS

The BOT revised and issued prudential regulations for financial institutions to ensure that the financial institution system was resilient, adhered to good risk management practices, and operates its business efficiently and effectively under changing environments. The BOT has also continually monitored policy effectiveness to determine regulatory directions and revise our regulatory policies to appropriately align with evolving circumstances.

1 / FINANCIAL INSTITUTIONS SUPERVISION DURING ECONOMIC RECOVERY

(1) Dividend payout policy of financial institutions

The BOT imposed a dividend payout restriction of no more than 50 percent of an annual net profit as a preventive measure during the COVID-19 pandemic to strengthen the bank's capital. Once the COVID-19 situation improved, and the Thai economy continued to recover in conjunction with the results of the bank's capital adequacy assessment under stress testing scenarios, which showed that the banking system remained strong with sufficient capital and reserve to absorb risks that may arise in the future, the BOT, therefore, lifted the dividend payout restriction in line with other regulators. However, the BOT encouraged banks to exercise dividend policy with caution by taking financial performance and a forward-looking view of risks into consideration

(2) Establishment of a joint-venture asset management company to facilitate non-performing asset management

Though the overall Thai economy tended to recover, there were still vulnerabilities among the household and businesses whose income had not fully recovered, especially in the tourism-related sectors. The BOT realized that financial institutions needed more flexibility to deal with non-performing assets (NPAs) which may gradually increase going forward. Therefore, the BOT introduced an additional measure to encourage commercial banks and asset management companies (AMCs) to set up the joint-venture asset management company (JV AMC) with a limited timeframe of 15 years to manage NPAs under the Emergency Decree on Asset Management Company B.E. 2541 (1998). The measure was expected to improve the efficiency of NPA management since it was a joint operation between commercial banks who knew their customers well and AMCs who had extensive experience and expertise in NPA management. The measure also required the JV AMC to carry on financial assistance to transferred debtors such as debt restructuring so that debtors had the opportunity to get recovered and their loan collaterals would not be hastily foreclosed to sell at distressed prices. The BOT required the establishment of JV AMC to be completed by the end of 2024. In 2022, there was one JV AMC which was already set up.

2 / THE SUPERVISION OF STABILITY AND SOUND RISK MANAGEMENT OF FINANCIAL INSTITUTIONS

(1) Regulations on commercial banks' financial business groups undertaking digital asset-related businesses and transactions

The BOT issued a regulatory framework supervising Financial Business Groups that undertake digital asset-related businesses and transactions to strike a balance between facilitating digital asset related innovations and appropriately managing risks. In this regard, the BOT lifted the limit on investments in FinTech (FinTech Limit) and allowed companies within a financial business group to seek approval on a case-by-case basis to undertake digital asset business under the Digital Asset Related Businesses Limit of 3 percent of the financial business group's capital. However, if the parent company can prove to the BOT that the companies within the financial business group that undertook digital asset related business improved their business conduct standards in line with the BOT regulation, the BOT may consider allowing the amount of such investment in the digital asset related business to be excluded from the calculation of the Digital Asset Related Business Limit. This was to incentivize the companies undertaking digital asset related business to adhere to the BOT's business conduct standards.

In addition, the BOT prescribed prudential regulations, e.g. (1) Corporate Governance: to prevent conflicts of interests between the parent company and the companies within the financial business group (2) Capital Adequacy: to ensure that banks and their financial business group had sufficient capital to absorb any loss that may be incurred by digital asset businesses and transactions (3) Intragroup Contagion Risk especially Information Technology risk: to segregate working system of the digital asset related business from the core banking system and to ensure that the company that undertook Digital Asset Exchange business had IT security and cybersecurity measures equivalent to those of commercial banks (4) Consumer Protection: to ensure that commercial banks and companies within a financial business group had appropriate consumer protection, commensurate with their products' risks and consumers' risk tolerance levels, as well as to prevent increased access of vulnerable customers to digital assets and impact on overall financial system. The regulation has become in effect since October 22, 2022, onwards.

(2) Regulation on foreclosed properties

The BOT amended the regulation on foreclosed properties to allow more flexibility in managing foreclosed properties as necessary, while the regulatory objective remains on the rationale that financial institutions shall not hold excessive foreclosed properties for a longer period than needed in the regular course of business and such properties shall be disposed within a prescribed period. The amendment included (1) standardizing and simplifying the holding period of the foreclosed properties, (2) introducing the additional provisions for the long-holding properties, (3) expanding the holding period for properties that are difficult to dispose, (4) providing the grace period for 2022-2023 implementation for both the holding period and additional provisions to mitigate the impact of the COVID-19 pandemic, and (5) requiring the report on the total amount of foreclosed properties and those which were difficult to dispose for BOT's monitoring. The amended regulation has been effective since September 24, 2022.

(3) Regulations on corporate governance

The BOT amended the regulations on corporate governance and internal control mechanism of financial institutions and financial business groups to allow more flexibility to accommodate changes in the future and enhance internal control functions to perform their roles efficiently and independently. The regulations can be categorized into two parts as follows: Regulations on corporate governance comprised key measures as follows: (1) setting roles and responsibilities of the board of directors of financial institutions on a principle-based approach and list of key policies requiring the board's approval (2) setting additional requirements for composition

of the board of directors of financial institutions for financial groups with subsidiaries undertaking digital asset related business (3) incorporating sustainable banking principle in the risk governance framework of financial institutions (4) setting additional requirement for the parent company to ensure that significant subsidiaries had their own internal control functions (5) setting additional requirement for remuneration disclosure of senior executives classified by remuneration types.

Regulations on internal controls comprised key measures as follows: (1) strengthening the BOT's Guidelines on Supervision of Financial Institutions' Compliance and Internal Audit into legally enforceable notifications (2) enhancing independency and transparency of compliance and internal audit functions to avoid conflict of interest (3) setting an additional requirements for financial institutions to seek for BOT's approval prior to the appointment of the head of those functions (4) encouraging those functions to act proactively and audit activities that may expose significant risks by using tools, system, and information technology to improve efficiency.

(4) Evaluation of enforcement outcome of the law regarding Asset Management Company

In 2022, the BOT conducted an evaluation of the enforcement outcome of the law regarding Asset Management Companies (AMC) and concluded that the law achieved its objectives and helped non-performing asset management in the financial system, especially during the COVID-19 pandemic when AMCs were needed to buffer potentially rising non-performing assets. Nonetheless, such law needs further improvement to better respond to the changing economic condition and to promote AMC's participation in resolving household and business debt problems more efficiently as well as operating business with good corporate governance and proper debtor management.

The essence of the amendment to the law regarding AMC included: (1) expanding the business scope to be able to provide non-performing asset management services and debt restructuring advisory services to savings cooperatives and public agencies as specified by the Ministry of Finance, and (2) enhancing supervisions such as strengthening applicants' qualifications, expanding the BOT's supervisory power, prescribing conditions in revoking the registration and dissolving the business, clarifying regulations, and reducing the unnecessary operational burden of AMC.

The BOT is currently drafting the amendment to the laws regarding AMC in accordance with the evaluation of enforcement outcome and will later propose it to the Ministry of Finance for consideration.

3 / ENHANCING OPERATIONAL EFFICIENCY OF FINANCIAL INSTITUTIONS

(1) Permission and Supervision of Derivative Transactions for Commercial Banks

The BOT amended the regulations on permission and supervision of derivative transactions for commercial banks in accordance with the Regulatory Impact Assessment principles. Under the amendment, commercial banks were generally permitted to engage in derivative transactions under a principle-based approach with a more flexible supervisory framework and regulations to promote the efficient development of derivative transactions and promptly responded to client needs. However, such derivative activities shall not threaten the stability of financial institutions and clients shall receive treatment appropriate to their level of sophistication and risk tolerance.

Additionally, commercial banks are required to conduct the client suitability analysis when offering derivative transactions to clients and maintain adequate capital to cover residual risks arising from certain types of derivative transactions which are not covered under the standardized approach of the capital requirement. The regulation became effective on October 22, 2022.

(2) The amendment of the notification and the guidelines on the establishment and supervision of Thai commercial banks' overseas branches and representative offices, as well as foreign financial institutions' representative offices in Thailand

The BOT amended the regulations and guidelines on the establishment and supervision of Thai commercial banks' overseas branches and representative offices, as well as foreign financial institutions' representative offices in Thailand. This amendment was conducted in accordance with the RIA principles, to enhance the flexibility of banking businesses and reduce operating costs and increase the operational efficiency of commercial banks and representative offices. The amendment was to ensure the relevance of the regulations to the current context while maintaining the appropriate risk management principles. The amendment of the notification and the guidelines came into effect on July 2, 2022.

GRANTING APPROVAL AND RELAXATION

THE BUSINESS TRANSFER OF THE FINANCIAL INSTITUTIONS	THE DISSOLUTION OF BUSINESS AND RETURN LICENSES
1. The transfer of certain important parts of Citibank N.A. Bangkok branch's business to United Overseas Bank (Thai) Public Company Limited The BOT approved the transfer of certain important parts of Citibank N.A. Bangkok branch's business to United Overseas Bank (Thai) Public Company Limited under the notification of the BOT No. FPG. 4/2565 which came into force on August 26, 2022, the day following the date of its publication in the Royal Gazette. Such transfer of business had legal effect on November 1, 2022.	1. ANZ Bank (Thai) Public Company Limited dissolved and returned the commercial banking license to the Ministry of Finance on December 1, 2022. The BOT approved the ANZ Bank (Thai) Public Company Limited to dissolve its banking business as a subsidiary of the foreign commercial bank due to the change of business strategy. ANZ Bank (Thai) Public Company Limited returned its commercial banking licenses, authorized juristic person licenses, and payment services licenses to the Ministry of Finance. Australia and New Zealand Banking Group Limited received approval from the BOT to establish a representative office in Thailand expected to operate in early 2023.
2. The transfer of certain important parts of the business of the Siam Commercial Bank Public Company Limited to Card X Company Limited The Siam Commercial Bank Public Company Limited transfers a significant part of its business; credit card and personal loan under supervision portfolios, to the Card X Company Limited, a subsidiary of SCBx group which was granted a personal loan, credit card, and payment agent license. The BOT approved such transfer as part of a shareholding structuring plan to enhance business flexibility, and thus reported to the Ministry of Finance on November 30, 2022. The business transfer had legal effect on December 10, 2022.	2. Srisawad Finance Public Company Limited dissolved and returned a finance company license to the Ministry of Finance on September 12, 2022. On August 26, 2022, the BOT approved the Srisawad Corporation Public Company Limited to dissolve its finance business under the Srisawad Finance Public Company Limited due to the group restructuring strategy. The Srisawad Finance Public Company Limited has returned the finance company license to the Ministry of Finance on September 12, 2022. Thus, the company's name was changed to Srisawad Capital 1969 Public Company Limited.

BOX 5

REGULATORY IMPACT ASSESSMENT (RIA): "THINK HOLISTICALLY, RESPOND PRACTICALLY" FOR REGULATING FINANCIAL SERVICE PROVIDERS UNDER THE NEW NORMAL

SITUATION

As the financial sector is transitioning towards a digital world, technology has become a catalyst for financial service providers to adapt their businesses to provide people with greater and faster access to financial services. With its role as the regulator of financial institutions and non-banks, the Bank of Thailand (BOT) conducted regular reviews of its regulations not to hinder financial innovation and to support business transformation.

"Regulatory Impact Assessment" (RIA) is an important tool used to assess and review existing regulations of the BOT based on the "Think Holistically, Respond Practically" principle (procedures shown in the figure below) with an aim of underpinning the future financial landscape. The gist of the regulatory assessment lies in an intention to eliminate unnecessary compliance burdens for the business sector and the public and to enable financial institutions and non-banks to efficiently operate and offer financial services to the public and businesses.

The RIA approach allows regulatory bodies to clearly identify the problems, find targeted solutions, and make an informed decision that critically considers the positive and negative impacts of each option to come up with more prudent and well-rounded solutions.

STEPS OF REGULATORY IMPACT ASSESMENT

COLLECTION & REVIEW

Review all relevant regulations and collect pain point,

STAKEHOLDER ENGAGEMENT

Consult with financial institutions, private sectors, andother regulators through meetings and survey

ANALYSIS

Analyse all collected information, assess impacts, and examine the pros and cons of each alternative

CONCLUSION

Present the assessment results, prioritise a roadmap and summarise the pain points and recommendations for improving and amending regulations

FROM "RULES" TO "PRINCIPLES": REGULATING FINANCIAL SERVICE PROVIDERS UNDER THE NEW WORLD

The BOT conducted a survey and organized meetings to identify the problems and impacts of its regulations and gather recommendations from stakeholders both inside and outside the BOT including the Thai Bankers' Association, the Association of International Banks, the Government Financial Institutions Association, the Vehicle Title Loan Trade Association, and representatives of personal loan operators. The inputs from the meetings were used to analyze options and find proper solutions to improve the regulations and work processes according to the set objectives.

From the meetings, the BOT found that the main problems concerned the limitation on the bank's business scope and investments which currently focused on financial-related businesses, rule-based regulations which may overregulate on certain areas that prevented operational flexibility, one-size-fits-all supervisory approach for all types of businesses that was inconsistent with bank's operating costs and different risk profile, and duplicated regulations across regulatory agencies and various laws such as those of the Anti-Money Laundering Office and Personal Data Protection Act that increased compliance burden.

As a result, the BOT increasingly focused on principle-based regulations to allow flexibility and proper response to a changing environment and on a risk-proportionated regulatory framework to ensure that its regulation is aligned with the associated risks of each business type. Moreover, the BOT placed a consideration on creating a level playing field in the financial sector to promote fair competition while maintaining proper risk management and consumer protection to ensure fair treatment.

Regulating financial service providers under the new world is a real challenge and requires close collaboration among regulatory agencies and all stakeholders to strike a balance between different goals. In 2023, the BOT will hold additional meetings with the business sectors and the public which will, in turn, support "holistic and practical" decision making and achievement of shared goals.

WHAT WOULD THE BOT LIKE TO SEE?

The BOT wishes that the revision of existing regulations under the RIA project shall provide the public and business sectors with access to a wide range of financial services at reasonable costs that are consistent with their risk level, increase operational efficiency, reduce costs resulting from overregulation, and enhance the competitiveness of financial institutions and non-banks, allowing the business sectors to better allocate their resources and enhance their businesses to respond to the financial realm in the future while maintaining the stability of the financial system.

SUPERVISION AND EXAMINATION OF FINANCIAL INSTITUTIONS

In 2022, the BOT continuously enhanced the efficiency of ongoing supervision by prioritizing the development of supervisory tools and systems to facilitate financial institution risk monitoring and examination process. Moreover, the BOT communicated and promoted the sound risk culture to be in place in financial institution system as well as strengthened collaboration with other supervisory agencies to ensure that Financial Institutions (FIs) remained resilient, kept up with risk and rapid change in the financial environment, and served an important role to support economic recovery.

1 / THE SUPERVISORY STRESS TEST OF THAI COMMERCIAL BANKS

The BOT required Thai commercial banks to conduct stress test taking into account the impact of geopolitical risk, the COVID-19 pandemic, and other relevant risks including risks from cyber security, data leak, and investment fraud that would affect the financial position, stability, and liquidity of the banks and their financial business group during the 3-year period (2022-2024), according to the BOT supervisory scenarios. The stress test result indicated that overall Thai commercial banks remained resilient with sufficient capital funds and liquidity to cope with the impact of such risks. Moreover, the BOT was in the process of encouraging SFIs to accordingly conduct stress tests as an efficient risk management tool to strengthen SFIs' stability and increase the efficiency of a supervisory framework for SFIs in general.

2 / THE DEVELOPMENT OF ONGOING SUPERVISION TOOLS

To enhance the efficiency of ongoing supervision, the BOT still placed importance on the development and improvement of supervisory tools, systems, and data as follows:

(1) The Regulatory Data Transformation (RDT) for credit data

The BOT continuously coordinated with FIs by organizing and running workshops to achieve the same understanding and receive feedback for improving the new data model accordingly. The BOT was in the process of consultation for industry-wide testing and expected FIs to submit the data in mid-2023.

(2) The development of risk monitoring tools and systems to increase the efficiency of the FI supervision and analysis process.

During 2022, many risk monitoring dashboards were developed, such as debt consolidation and sustainable debt relief measure monitoring dashboard, payment and IT cyber risk dashboard phase 3, and market conduct dashboard phase 3. In addition, the BOT planned to adopt new system, the Supervisory Tool, to improve the efficiency and effectiveness of the whole process of ongoing supervision.

3 / THE ENHANCEMENT OF RISK CULTURE IN FIs

The BOT issued the policy statement on risk culture in FIs on November 11, 2021 to enhance the sound risk culture to be in place in commercial banks including finance and credit foncier companies. In 2022, the BOT also provided knowledge sharing and communicated the risk culture guideline and best practices to specialized financial institutions (SFIs).

Furthermore, the BOT was in the process of preparing to assess FIs' implementation of the risk culture guideline. In the initial phase, the BOT will conduct a self-assessment exercise for domestic systemically important banks (D-SIBs) to evaluate the progress the in implementation of the guideline and provide them a better understanding of their strengths and points that should be improved, which can be helpful for the improvement of risk culture in financial institution system overall. The self-assessment result together with supported information from the banks will be used for the BOT's assessment and interview of the bank's board of directors and senior management going forward.

4 / EXAMINATION AND MONITORING OF FIS' FINANCIAL POSITION, PERFORMANCE, AND RISK MANAGEMENT

In 2022, the BOT completed the examination of 24 FIs including non-banks as planned. The details were as follows:

FINANCIAL INSTITUTIONS	NUMBER OF FIS EXAMINED BY THE BOT IN 2022
Thai Commercial Banks / Retail Banks	14
Specialized Financial Institutions (SFIs)	7
Asset Management Companies	2
Non-banks operating credit card businesses and personal loans	1
Total	**24**

In 2022, the BOT examined and monitored the operation of FIs based on ongoing supervision process. The examination scope covered significant activities, loan loss provision and capital adequacy, profitability, corporate governance and compliance, and market conduct. Moreover, the BOT monitored the progress and effectiveness of FIs' measures to assist borrowers and their business strategies of digital finance, as well as reviewed the transactions submitted by FIs for compensation for interest and loss from granting of loans under the Emergency Decree on the Provision of Financial Assistance for Entrepreneurs Affected by COVID-19 pandemic, B.E. 2563 (2020).

The overall banking system remained resilient with robust levels of capital, loan loss provision, and liquidity, which served as a key mechanism to support the economic recovery and accommodate loan demand from businesses and households going forward. In addition, banks continued to manage their loan portfolios and assist borrowers through debt restructuring. Meanwhile, the banking system's profitability improved from the previous year, driven mainly by loan expansion which resulted in an increase in net interest income.

5 / THE COLLABORATION WITH OTHER SUPERVISORY AGENCIES

(1) The Collaboration for Crisis Management Preparedness.
The BOT collaborated with the Securities and Exchange Commission (SEC), the Office of Insurance Commission (OIC), and the Deposit Protection Agency (DPA) in the revision of the interagency playbook for crisis management and running crisis simulation exercise to ensure the smooth collaboration among the three regulators. In addition, the BOT participated in cross-border crisis simulation exercises with other regulators from the Asia Pacific region as well.

(2) The Collaboration for Financial Consumer Protection
The BOT, SEC, and OIC were working together to improve the efficiency of consumer complaint handling and reduce the burden of both complainers and financial service providers. Moreover, the BOT collaborated with other relevant regulatory agencies. For example, the BOT participated in providing opinions on drafted notification of the Committee on Contracts Re: Prescribing Consumer lending businesses as a contract-controlled business under the Office of Consumer Protection Board's regulation, and also assigned representatives to be directors of the Debt Collection Supervisory Committee and Sub-Committee to share opinions regarding the determination of fees and expenses and the number of contacts for debt collection.

(3) Supporting and Collaboration on Saving Cooperative Supervision
The BOT continuously collaborated with the Cooperative Promotion Department, the Department of Cooperative Auditing, and the Fiscal Policy Office to enhance the supervision of saving cooperatives to ensure that they were resilient, capable of providing financial service to their members efficiently and properly, and able to play an important role to solve household debt problem in Thailand. The BOT participated in developing and providing opinions on drafted Ministerial Regulations under Section 89/2 of the Cooperative Act in order to issue the five regulations for saving cooperative risk monitoring, namely (1) Granting credit (2) acceptance of deposit, borrowing, undertaking of contingent liabilities, and guarantee (3) asset and liquidity management (4) asset classification and provision, and (5) investment and deposit.

Moreover, the BOT participated in developing policy suggestions for enhancing saving cooperative supervision and the landscape of the Thai saving cooperative system in the areas of (1) supervision of systematically important saving cooperatives (2) efficiency of saving cooperative supervision (3) promoting the role of saving cooperatives to help relieve household debt problem (4) building safety net infrastructure for saving cooperatives and (5) expanding role of saving cooperative federation.

BOX 6

DATA AS THE NEW OIL IS NOT ENOUGH : WHY PERSONAL DATA PROTECTION IS IMPORTANT TO THE FINANCIAL SECTOR?

The financial sector is one of the economic sectors that brings technology for the benefit of innovation, and development of new financial products and services, apparently the most stunning advancement. Consumer behavior data is the key essence of design and development of financial products and services. Personal data therefore becomes valuable assets of any organization requiring data collection and use for communication including analytics of clients' and people's expense behavior in various dimensions.

Notwithstanding, misconduct of personal data may cause risks and damages to clients, for example, call center gangs deceive certain persons and lure them to make a money transfer to crime gangsters. Deception to filling out personal data may mispresent data subjects for any damage or unlawful action. Even though that fraud does not result in financial damages, the matter could, more or less, irritate data subjects, for instance, receiving direct marketing offers without prior consent.

THIS WILL RESULT IN EFFICIENCY AND EFFECTIVENESS FOR PDPA ENFORCEMENT IN THE FINANCIAL SECTOR, WHEREAS IT WILL NOT CONTRIBUTE TO AN UNREASONABLE BURDEN ON BUSINESSES UNDER SUPERVISION AS WELL.

Indeed, not only does data privacy and protection a matter of business, but it is also a fundamental human right that must be protected by the government. Several countries across the world enforced on federal data privacy and protection laws, particularly European Union (EU) General Data Protection Regulation (GDPR), which becomes the master guidance for countries across the world nowadays.

Thailand realizes the importance of data privacy and protection, so the authority enacted Personal Data Protection Act B.E 2562, or the so-called "PDPA", which enforced as a whole Act since June 1, 2022 onwards. PDPA determines rules, protocols or security safeguards for data privacy and protection in order to prevent, lessen and rectify the problems of privacy infringement including annoying trouble as well as financial threats or damages to data subjects. These troubles may cause widespread impacts, and also result in economic losses for the Thai economy as a whole.

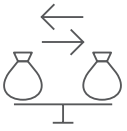
As a data controller, the BOT realizes and acknowledges the importance of data privacy and protection in accordance with laws and international standards by promoting a balance of data privacy and protection and the use of data as for analytical research aimed at the determination of monetary policy and substantial economic measures.

As a financial institution regulator, the BOT in collaboration with the Securities and Exchange Commission (SEC), the Office of Insurance Commission (OIC), and the Office of Personal Data Protection Commission (PDPC) arranged and signed a Memorandum of Understanding (MOU) on Personal Data Protection in the Financial Sector, on April 28, 2022, to harmonize as well as standardize policy, framework and procedure for business supervision in the financial sector, such as commercial banks, security companies, asset management companies including insurance companies, in terms of data privacy and protection. This will result in efficiency and effectiveness for PDPA enforcement in the financial sector, whereas it will not contribute to an unreasonable burden on businesses under supervision as well.

Furthermore, the BOT organized a training workshop on the topic of data privacy and protection for a bank association including other businesses under supervision, such as financial institutions and non-banks in various regions across Thailand. The workshop aimed at knowledge and competency development of personnel of the business under supervision, in addition to credibility enhancement of business in the financial sector, and data subjects' trust, as clients and people, in doing any financial transactions as well.

Source: The MOU Signing Ceremony, "The Memorandum of Understanding Signing Ceremony for Cooperation on Personal Data Protection in the Financial Sector between the BOT, the OIC, the SEC, and the PDPC."

ENSURING THE STABILITY OF THE PAYMENT SYSTEM



ENSURING THE STABILITY OF THE PAYMENT SYSTEM AND MANAGING THE PAYMENT SYSTEM

Ensuring a stable and sustainable payment system, continuously developing, and supporting economic activities in various sectors, is one of the missions of the BOT. The BOT has implemented various policies to enhance efficiency, reduce risks, and protect customers, whilst also aligning its supervision with international standards. Key operational initiatives for 2022 were as follows:

1 / DIRECTIONS FOR DEVELOPMENT OF PAYMENT SYSTEMS UNDER THE NEW FINANCIAL LANDSCAPE OF THAILAND

The digital payment system was a key engine, driving the financial transformation into a digital economy and sustainable development. In 2022, the BOT formulated the Payment Directional paper on "Directions for Development of Payment Systems Under the New Financial Sector Landscape of Thailand" over a three-year period (2022-2024). The objective of this Directional paper was to layout the payment development directions aligning with the New Financial Landscape policies, based on three principles: Openness, Inclusivity, and Resiliency.

1. Openness: Leveraging shared payment infrastructure and information:

focused on opening up the use of interoperable payment infrastructure for the benefit of all wide range of players, promoting the utilization of digital payment data under adequate data governance in terms of personal data protection and data security, creating an environment conducive to competition among payment service providers, and fostering the adoption of new technologies to develop domestic and cross-border payment services and innovations.

2. Inclusivity: Promoting accessibility and digital financial literacy:

focused on expanding and promoting digital payment usage of people, business, and government sectors to be more inclusive, and building confidence in digital payment by promoting understanding and awareness of usage.

3. Resiliency: Adopted flexible regulatory supervision adapted to changes and risks:

focused on establishing flexible payment systems regulations to accommodate innovations and new risks without burden in practice and improving supervisory framework to accommodate the digital world by employing supervisory technology. Overall, the BOT aimed to enhance readiness of Thailand's payment systems to support the digital economy of the financial, government, business, and public sectors, with efficiency, safety, and sustainability, as well as to support the development of digital payment services of payment service providers to provide alternatives to different service users based on sufficient knowledge and risks awareness by encouraging them to learn, adapt, and get ready for digital payments. Additionally, the BOT provided support for businesses to transition to a fully integrated business, in order to improve efficiency, reduce costs, and increase accessibility to funding sources. This would help elevate the country's business potential and competitiveness in society, and step towards a less-cash society.

2 / REVIEW AND UPDATE THE SUPERVISORY FRAMEWORK AND REGULATIONS.

Thai Payment Systems is rapidly evolving due to the increasing number of players, progressing business model, advancement in technology, and new payment solutions. The BOT acknowledges the importance of revising the laws, rules, and regulations on payment systems supervision, applying the Regulatory Impact Assessment (RIA) principles to achieve practicality, as well as to keep pace with new technologies and associated risks. The improvement of the supervisory framework and regulations under the RIA principles can be divided into 3 phases as follows:

- Short-term (fourth quarter of 2021 - second quarter of 2022): clarify current regulations to ensure appropriate practices consistent with the principles or intention of the regulations; for example, clarifying, preparing questions and answers (Q&A) attached to the notification and providing more concrete examples.
- Medium-term (third quarter of 2022 - fourth quarter of 2023): amend related notifications to reduce regulatory burdens on business providers.
- Long-term (2024): consider amending the Payment Systems Act and related notifications and guidelines in response to the changing contexts, business models, and business environment.

Since 2022, the RIA for the Payment Systems has been carried out to ensure the clear and practical regulations; for instance, preparing Q&A attached to the notification and published on website to clarify and reestablish the understanding of regulatory intents, as well as adjusting the procedure for formulation of BOT regulations by releasing the guidelines before launching the regulations.

This allows businesses to prepare and adapt to the new regulations. The RIA also included issuing new regulations such as, regulation on providing Imaged Cheque Clearing and Archive System (ICAS), which was into effect on April 1, 2022. Furthermore, the BOT is in the process of revising related notifications and supervision process to decrease regulatory burdens on business providers and increase the BOT's efficiency on supervision, in response to the changing environment, namely,

- Regulation on market conduct for payment service providers.
- Regulations on conducting predefined businesses without seeking permission on a case-by-case basis for e-money service providers.
- Policy guideline on fraud monitoring and management to ensure that service providers act properly to prevent fraudulent financial activities.
- Adjustment of the consideration process for the issuance and revocation of service provider licenses (market entry and exit).

As for the supervision of digital assets that resembles payment under the Payment System Act, the BOT is in the process of establishing grounds for businesses to test the programmable payment, which is one of the digital asset's characteristics. The testing is to determine its ability to improve efficiency, reduce costs, enhance security, and to assess the risks, by comparing to existing system or technology, which is essential in establishing the balance between promoting innovations that benefit the business and public sectors, while ensuring appropriate risk oversight and consumer protection, and preventing the impact on the stability of the financial and payment systems.

3 / THE SUPERVISION AND EXAMINATION OF THE PAYMENT BUSINESS PROVIDERS

The BOT consistently supervised the business providers who were granted licenses or registration certificates under the Payment Systems Act B.E. 2560 (2017). In 2022, the BOT conducted onsite examination for 14 important payment business providers, and offsite monitoring the other payment providers. Meanwhile, the BOT has developed supervision tools for risk-based and ongoing monitoring, such as e-payment supervisory dashboard to closely and continuously monitor non-bank business providers' operational risk and compliance risk.

To ensure that our regulated entities implement appropriate risk management, security, and customer protection in line with international standard, the BOT encouraged them to conduct self-assessment. The assessment was used to assess their corporate governance based on checks and balances principles and their readiness for compliance with the Personal Data Protection Act's legal requirement. In 2022, it was the first-time of running the stress test on event risk related to personal data breaches for 14 Thai commercial banks. This simulation was implemented to test the effect of impact to their capital funds (BIS ratio). In the meantime, the BOT was developing e-payment supervisory dashboard equipped with early-warning risk indicators and supervision tools which help improving more efficient and effective onsite examination process and offsite monitoring.

The BOT promoted the entrance of new payments business providers to sustain growing demands and add choices for digital payment. In 2022, 14 business providers acquired licenses, at the third quarter of 2022, there were 138 business providers, 134 licensed business providers and 4 registered business providers. (totaling 316 license and 4 registration certificates)

The BOT promoted the financial sector's preparation for compliance with the Personal Data Protection Act B.E. 2562 (Personal Data Protection Act: PDPA) by collaborating with other financial regulators and Office of the Personal Data Protection Commission (PDPC). The BOT pushed forward the preparation of the Thai financial sector to comply with the PDPA, provided the financial sector's perspectives on supportive legislations under the PDPA. In 2021, the BOT arranged for banks, non-bank business providers under supervision to conduct the PDPA self-assessment survey to assess their readiness for compliance with the PDPA legal requirements before the enforcement on June 1, 2022.

In addition, to ensure the financial sector's compliance with the PDPA and to reduce regulatory burden on business providers, the BOT, in collaboration with the Securities and Exchange Commission (SEC) and the Office of the Insurance Commission (OIC) signed a memorandum of understanding (MOU) with the Office of the Personal Data Protection Committee (PDPC) to support the supervision of personal data protection in the financial sector on April 28, 2022. The collaboration among regulatory authorities on PDPA has given the benefits of enhancing strong cooperation and reducing regulatory overlap in such cases of sharing information, prevention and response of Data leak, skill development and customer literacy.

To promote more efficiency and effectiveness in payment system, it is necessary for the BOT to communicate and disseminate knowledge on digital payment to business providers through continuously training workshop to boost resources' performance around the regions.

4 / SUPPORTING THE ESTABLISHMENT OF PAYMENT SYSTEMS GOVERNANCE STRUCTURE

To make payment services openly accessible and promote competition as well as to foster innovation and stability of payment systems, the BOT as encouraged payment systems to have a good governance. The BOT issued "Directions for Development of Payment Systems under the New Financial Sector Landscape of Thailand (2022-2024), which lay out frameworks to enhance the governance structure and improve payment systems and payment infrastructure management. Under this direction, Payment Strategy Forum (PSF), the body which will allow relevant sectors to participate in the effective implementation of the BOT policies and to provide recommendations on the direction of payment development that will benefit end-users, will be established.

In addition, the BOT will establish Central Payment Services Office (CPSO) to manage payment services following international practices. Key initiatives will also include reviewing the management of payment systems infrastructure and the payment services pricing structure to enhance efficiency, removing redundancy or concentration that might pose systemic risks, providing open access to more service providers according to their risk levels at affordable and fair price, and fostering payment innovations that harness technology and data. These key initiatives will be concretely driven in 2023.

5 / CREATING UNDERSTANDING AND KNOWLEDGE ABOUT PAYMENT SERVICES FOR THE PUBLIC AND BUSINESSES

The BOT has continuously promoted knowledge about payment services through media interviews, the BOT websites, and its social media channels. Additionally, the BOT issued an annual report "Payment Systems Report 2021", as well as Thailand's payments articles (Bi-monthly Payment Insight Report), in order to create awareness and understanding to public.

Regarding the content, it covered interesting topics related to financial services and new technologies and innovations applied to the banking sector such as the financial and payment infrastructure for business (PromptBiz), SWIFT services, financial fraud knowledge, the progress of cross-border QR payments, and the future development of Thailand's payment system outlined in the directions for development of payment systems under the new financial landscape of Thailand (Payment Directional Paper). Moreover, the BOT disseminated statistics on the technological readiness of the payment system to provide customers which would help in their decision making on financial services. Additionally, the BOT aimed to create understanding of crypto-currency and Stablecoin development, as well as the risks and perspectives of digital asset payments.

Mrs.Budsakorn Teerapunyachai spoke with the media in a briefing about the directions for development of payment systems under the new financial sector landscape of Thailand (Payment Directional Paper).

6 / PROMOTION OF UTILIZING DATA FOR POLICY IMPLEMENTATION AND SUPERVISION.

In 2022, the BOT conducted a business payment survey to understand the payment behavior of businesses. The survey aimed to study the usage and payment behavior of businesses, including changes in behavior during the COVID-19 pandemic, attitudes, expectations, and obstacles related to various payment methods. The results of the survey were used to develop payment services that meet the future needs of businesses.

The BOT promoted the use of digital payment data by setting up the pilot project which utilized "Payment Transactions" to develop tools for tracking and analyzing payment behavior of Thai people. This project aimd to find the significant factors that impacted digital payments adoption and supported making payment policy along the directions for development of payment systems under the new financial landscape of Thailand.

Moreover, the BOT has collaborated with government agencies, including Fiscal Policy Office (FPO) and the Office of Transport and Traffic Policy and Planning (OTP), to analyze the impact of government policies on the economy and consumer spending behavior. The results of these analyses will be used.

7 / BOT'S PAYMENT SYSTEM SERVICES

In 2022, BAHTNET (Bank of Thailand Automated High-value Transfer Network: BAHTNET) and ICAS (Imaged Cheque Clearing and Archive System: ICAS) were still operating during COVID-19 pandemic. However, the situation began to soften in the second half of the year. Besides, the government announced the cancellation of epidemic prevention and control measures and classified COVID-19 as an endemic disease. The BOT, therefore, canceled the BAHTNET and ICAS operational guidelines that provided relaxations during the COVID-19 pandemic. Nevertheless, the BOT still advised the participants of both systems to be prepared for any unprecedented circumstances.

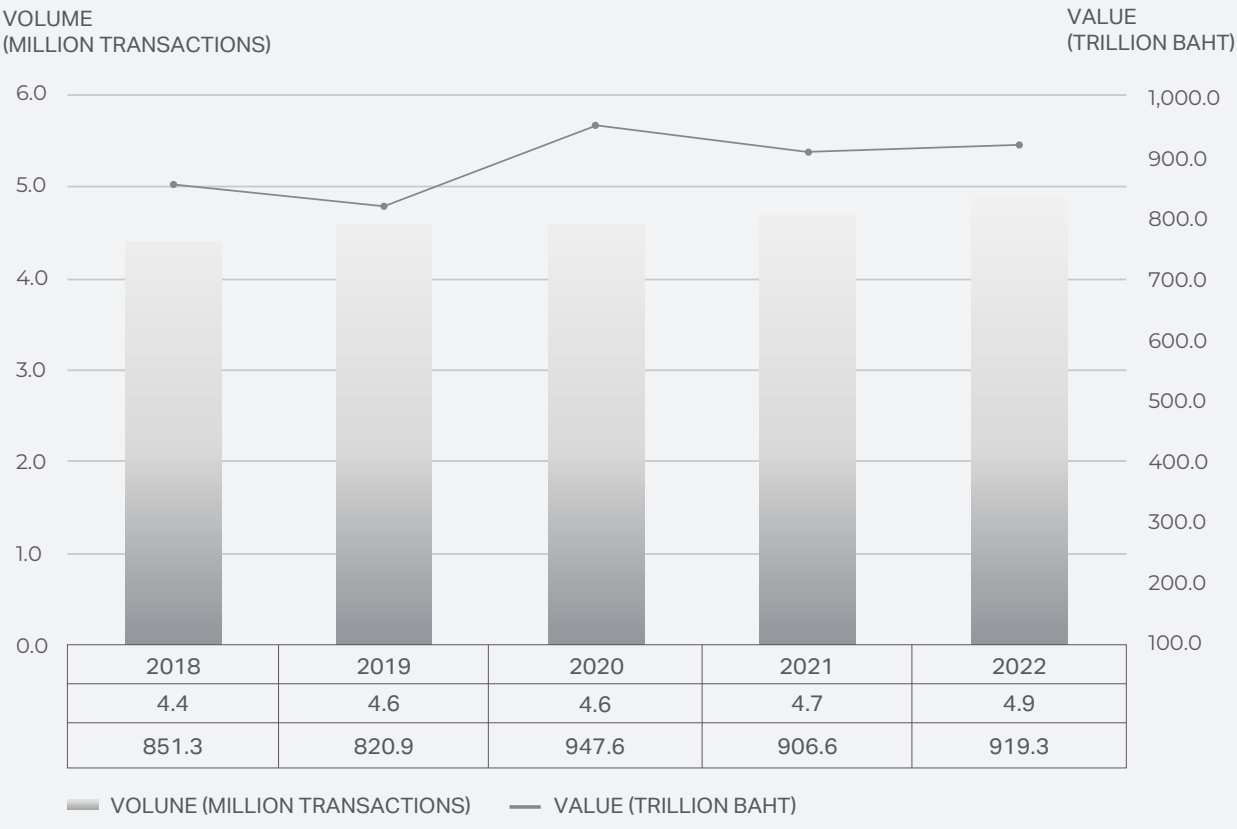
The results of BAHTNET and ICAS services in 2022 can be summarized as follows:

1. BAHTNET

At the end of 2022, BAHTNET had a total of 58 participants, consisting of 17 Thai commercial banks, 11 foreign bank branches, 5 finance and securities companies, 6 specialized financial institutions, 6 government agencies and other institutions, and 9 BOT's internal departments.

In 2022, the total volume of funds transferred via BAHTNET was 4.9 million transactions with a total value of 919.3 trillion baht, increasing from the previous year by 0.2 percent and 13.7 percent respectively.

BAHTNET FUNDS TRANSFER



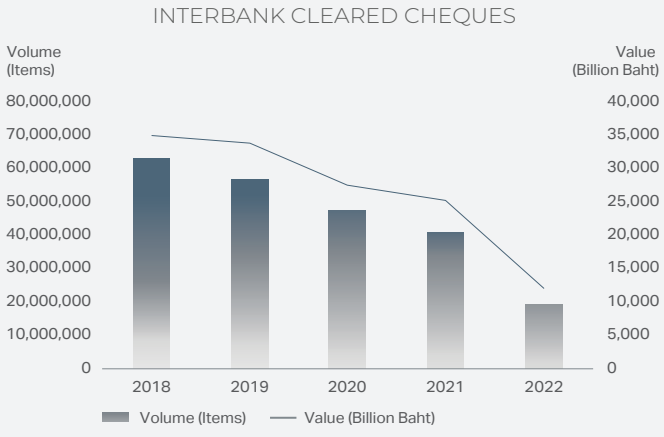
	2018	2019	2020	2021	2022
VOLUNE (MILLION TRANSACTIONS)	4.4	4.6	4.6	4.7	4.9
VALUE (TRILLION BAHT)	851.3	820.9	947.6	906.6	919.3

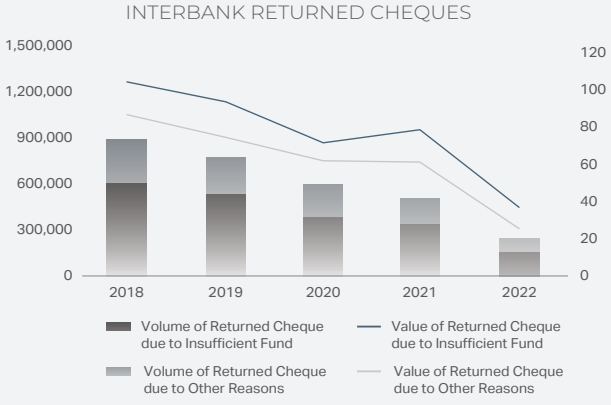
2. ICAS

The BOT transferred the operation of ICAS to a private sector, to distinctively separate the role of operator and regulator, and to enable the private entity to enhance ICAS more flexibly, without subject to legal restrictions. With the consideration from stakeholders, including the Thai Bankers' Association (TBA), the Government Financial Institutions Association (GFA), and the Association of International Banks (AIB), the National ITMX Company Limited (NITMX) was deemed appropriate to succeed the BOT as the new ICAS operator. Later, the BOT, NITMX, and the banking sector joined forces to drive the implementation of the new ICAS, including the development and testing of the new ICAS, establishing an operation unit, implementing rules and regulations, and drafting service agreements. The NITMX successfully began operating the new ICAS on July 15, 2022. Meanwhile, the BOT terminated its operation on the same day.

As of July 15, 2022, the BOT's ICAS had a total of 35 member banks, consisting of 18 Thai commercial banks, 11 foreign bank branches, and 6 specialized financial institutions. The total number of bank branches (including sub-branches) was 8,957.

Over the past five years, interbank cheques cleared through ICAS have continued to decline. As of July 15, 2022, the total volume and value were 19.23 million items and 12,291.70 billion baht respectively. Regarding the returned cheques and returned cheques due to insufficient funds, the volume was 0.27 million and 0.19 million items, while the value was 62.85 and 36.67 billion baht respectively.





3. BAHTNET Development Direction

3.1 BAHTNET ISO 20022

The BOT has implemented ISO 20022 international message standards in BAHTNET since August 15, 2022 to create alignment and interoperability with other important payment infrastructures. This enables wholesale, retail, and cross-border payment transactions to be processed more smoothly and seamlessly. It also supports richer remittance information and the development of innovative financial services.

The implementation of BAHTNET ISO 20022 was based on the 'enriched data' and 'big bang' approach, which significantly reduced the overall cost and resource burdens for participants. For instance, eliminating the need to handle multiple systems, and to deploy IT systems several times. The implementation made the BOT among the first central banks to fully adopt ISO 20022 message standards in the wholesale payment system. This also became a case study for many central banks in the region.

3.2 BAHTNET API Hub

The BOT has been developing BAHTNET API Gateway/Hub infrastructure, which will connect BAHTNET with other important infrastructures. It will support the provision of digital financial services and financial innovation using Straight Through Processing (STP) and ISO 20022 message standards.

In 2022, the BOT held discussions with representatives from Financial Market Infrastructures (FMIs), including NITMX, TSD, FinNET, and 12 BAHTNET participants across different banking associations, including TBA, AIB, and GFA. The discussions were to gather business cases that would address market needs (business priority) and eliminate current limitations in making transactions. The project is planned to launch in phases starting from 2024.

THE CHANGING CONTEXT OF BANKNOTES AND THE NEW ROLE OF BANKNOTE MANAGEMENT IN THE NEW WORLD.

Thailand's electronic payment system is growing rapidly, especially during the COVID-19 situation, people are more familiar with online payments. As a result, the role of banknotes as a medium of daily payment is gradually diminishing, while the study found that the role of banknotes as a store of value is increasing.

Another important role of the BOT is banknote printing and operation to ensure that banknotes in the public's hands are in good condition. In 2022, the BOT adapted to conform to the changing context of banknotes through four main activities: 1) adjusting vision and mission to be in line with the new context of banknotes 2) managing the banknote stock that supported fluctuations of banknote demand 3) establishing the Consolidated Cash Center (CCC) for cost-effectiveness and flexibility 4) issuing polymer banknotes for more environmentally friendly and more durability. Each activity had details as follows;

ADJUSTING THE VISION AND MISSION TO BE IN LINE WITH THE NEW CONTEXT.

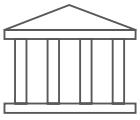
The BOT focuses on the impact of domestic payment systems and the people's needs and efficiency, respectively. Therefore, the vision and mission of the Banknote Management Group were adjusted to be in line with the new context of banknotes as follows:

VISION		MISSION
To be a world-class organization in banknote production and management	Previous	To ensure a sufficient supply of good quality and secure banknotes in circulation with efficient and secure management that maintains public confidence and satisfaction.
Thailand becomes the world's leading country in banknotes' production and management.	Current	Produce high-quality banknote that is difficult to counterfeit, circulate good-quality banknotes, and focus on sufficiency in all situations with the whole system's efficiency and environment, in accordance with other payment systems in the future, for the public's confidence and satisfaction.

BANKNOTE STOCK MANAGEMENT THAT SUPPORTED FLUCTUATIONS OF BANKNOTE DEMAND

The management of banknote stock in the past was the setup for the minimum stock and a reorder point (ROP) for any case of additional production, which was to be reviewed annually. Since July 2022, the new stock management model was adopted, the minimum number of banknotes in stock (safety stock) was set to cope with fluctuations in banknote demand at all possibility of occurring (tail risk) and costs of production and distribution. In addition, the BOT conducted a Production and Distribution Statistical Analysis (PDSA) that was taking demand factors, regions, seasons into account to ensure that there would be enough banknotes in every part of the country in the right place at the right time.

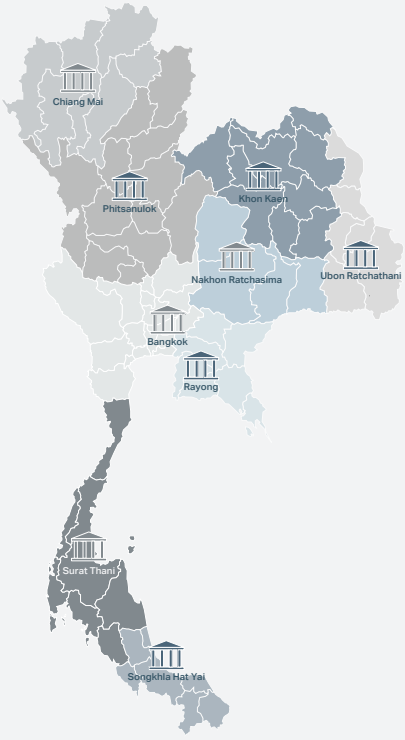
The BOT applied "the Recirculation Policy" for fit banknotes (banknotes that were returned from commercial banks in good condition and can be recirculated), as fit banknotes were stocked up during the year and could be used up in different time of the year by seasonal occasion. For example, during the New Year, the volume of banknote withdrawals could be overwhelming in December and be returned to the BOT in January. The recirculation policy led to the decline in the outstanding number of fit banknotes in stock which reflected efficiency in the management of fit banknotes.



ESTABLISHMENT OF THE CONSOLIDATED CASH CENTER (CCC) FOR COST-EFFECTIVENESS AND FLEXIBILITY.

The BOT established Consolidated Cash Center (CCC) to reduce the overlapping of activities between the BOT and the commercial entity cash centers. The CCC establishment reduced the cost of banknote management in the whole system, especially the logistic cost, while the quality standard in banknote distribution can be maintained. The CCC provided a comprehensive banknote management facility by allowing the commercial entity to use the BOT's sorting machines in the BOT's premises under the BOT's supervision to ensure that all banknotes met the standard before distributing to the public.

In 2022, CCC started operating in Songkhla (Hat Yai), Rayong, Ubon Ratchathani and Phitsanulok as shown in the picture:



ESTABLISHMENT ORDER OF THE CONSOLIDATED CASH CENTER (CCC)

Since the trend of cash transactions that have been steadily declining since 2018, getting the business sector to invest in setting up a full-fledge CCC outside the area of the BOT's Banknote Operation Center may not be worth the investment. Therefore, the plan to establish CCC in the area of the BOT's Banknote Operation Center as follows:

2564				2565				2566			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Khon Kaen			Hat Yai			Ubon Ratchathani		Surat Thani		
				Rayong			Phitsanulok		Nakhon Ratchasima		

To be announced...
- Bangkok
- Chiang Mai

However, the establishment of additional Hubs/Spokes in each area could be considered if the cash consumption does not decrease as expected, or the steady state of banknotes is higher than expected, or the business environment changes by infrastructure development policies, for example the rising of high-speed trains

The establishment and operation of the CCC brought various benefits to the financial sector, for instance: (1) encouraging the competitiveness and increasing the efficiency of CCC's services in the region, which could affect the fee to be cheaper and able to support banknote handling in the future; (2) reducing overlapping of activities between the BOT and the commercial entity cash center, such as sorting, transporting and storing banknotes; (3) enhancing banknote sorting quality that qualified the BOT standards, resulting in the better quality control; and (4) enabling the overview of banknote usage to become clearer and more accurate.

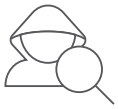
THE ISSUANCE OF POLYMER BANKNOTES FOR MORE ENVIRONMENTALLY FRIENDLY AND MORE DURABILITY

In order to support "the clean note policy", the BOT selected the durable, difficult to absorb dirt, and environmentally friendly substrate for the new 20 Baht polymer.

The new 20 Baht polymer banknote was issued to gradually replace the 20 Baht paper banknote as it had 2.5 times longer lifespan. In addition, polymer banknote could reduce the production cost by 30 percent whilst still include various and advanced anti-counterfeiting features.

Mr. Somboon Chitphentom at the press conference on the issuance of the new 20 Baht polymer banknote

RISK MITIGATION IN PAYMENT SYSTEMS



FRAUD PREVENTION FROM FRAUDULENT FINANCIAL ACTIVITIES

Financial fraud problem tends to continuously rise, with various patterns and methods, causing rapid and massive financial damages to financial service consumers. The BOT has cooperated with agencies from government and private sectors, in order to come up with solution proposal, and make progressive prevention measures. In 2022, the BOT examined digital fraud, and financial transactions as well as established guidelines for the prevention of fraudulent which financial service providers were required to comply with as minimum standards as follows;

1 / GOVERNANCE

The BOT announced policy which elevated fraud issue as an important risk, also emphasized continual digital fraud acknowledgement within the organization and to customers.

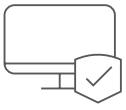
2 / FRAUD MANAGEMENT

To combat fraud and new threats, different measures were announced:
(1) Preventive: improve the fraud surveillance measures from end-to-end process: design, develop, and amend. Measures must be complied with international standard and should be constantly and carefully reviewed. (2) Detective: develop technology and criteria in detecting and monitoring suspicious transactions, promptly alert customers or freeze the transactions. This will effectively prevent losses and their spreading in time. (3) Responsive: set up responding, handling, assisting and aiding process for the victimized customers, with justification, thoughtfulness, and immediateness. Communication to explain and clarify the incidents to customers, and reporting to the BOT should be done in a timely manner. (4) Collaborative: establish collaborative mechanism between service providers and relative stakeholder agencies to uplift fraud management efficiency. This must include fraud data sharing, co-responding and co-management, proactive acknowledgement and building up awareness of use of financial services to customers.

THE PREVENTION FOR ILLEGAL, UNREGISTERED AND UNLICENSED PAYMENT SERVICES

The BOT proceeded against business providers, who provided services to people, without granted licenses or registered certificates, or those violated the Payment Systems Act.

Apart from that, the BOT conducted literacy activities for business providers and people regarding the magnitude of the supervision and supporting payment services provided by the legalized providers. This followed preventive measures for e-payment businesses which were unlicensed or unregistered. The communication was done through publishing infographics on the BOT website and social media channels of the BOT and payment service providers. Furthermore, the BOT arranged "Digital payment and financial crime, and law enforcement" programme for related regulatory authorities, to acknowledge roles and responsibilities of the BOT concerning Thai payment system development promotion and supervising payment service providers, and this was also aimed to make advantage from cooperation among authorities to help assure customers in using e-payment.



RISK MITIGATION IN BAHTNET SYSTEM

The BOT developed BAHTNET Offline, a contingency plan prepared to support BAHTNET operation in the event of a total disruption to the BAHTNET system, which may be caused by cyber-attacks. The preparation of the contingency plan will enable the BAHTNET system, the nation's important payment system, to continually operate without interruptions or broad impact on the financial system.

In 2022, the BOT developed the 'BAHTNET Lite' system, which supported the ISO 20022 message standards, for participants to be used during the activation of the contingency plan. The system will be tested with BAHTNET participants in Q1/2023 and is expected to be ready for use in Q2/2023.

In addition, the BOT is conducting a feasibility study of using Artificial intelligence (AI) and Machine learning (ML) to detect fraud in the BAHTNET system. The objective is to strengthen security and protect BAHTNET against cyber threats.

FORTIFYING THE CYBERSECURITY OF THAILAND'S FINANCIAL SYSTEM

In recent years, cyber threats were developed rapidly with far more sophisticated techniques and complexity resulting from external and internal factors such as international geopolitical tension and digital technology adoption in financial systems within the country. As financial transactions via mobile banking increased significantly, the BOT emphasized on leveraging cyber resilience for financial institutions to deliver more efficient and secure financial services. Thus, our primary focus in 2022 was conducted through 5 key approaches, including:

(1) enhancing cybersecurity standards for financial institutions and significant payment service providers by promoting self-regulation using the self-assessment, Cyber Resilience Assessment Framework (CRAF), to ensure compliance with international standards.

(2) establishing a dedicated team to monitor and respond to cyber threats in an offensive approach to reduce systemic risk especially imposing cyber attacks such as zero-day attack, supply chain attacks, and data leakage. In addition, an IT risk dashboard was developed to support ongoing supervision.

(3) expanding IT risk supervision to cover significant e-payment service providers to ensure that IT governance was conducted effectively and IT risks were managed properly. Moreover, cybersecurity controls must be implemented to monitor, protect, detect, respond, and recover from cyber incidents in a timely manner.

(4) expanding collaboration with other government organization in national level such as the National Cyber Security Agency (NCSA), the Ministry of Digital Economy and Society (MDES), Office of The National Broadcasting and Telecommunications Commission (NBTC), Anti-Money Laundering Office (AMLO), and Royal Thai Police, to establish comprehensive controls against cyber threats and develop countermeasures to digital frauds.

(5) establishing cyber threats information and IT risks regulatory direction sharing mechanism with other central banks to update trends of emerging cyber risks and develop adequate supervisory methods to enhance cybersecurity readiness.

Furthermore, the BOT emphasized building and developing cybersecurity staff which is the core strength in maintaining cyber readiness across industries, particularly in the financial sector by workinag with the Securities and Exchange Commission (SEC), Office of Insurance Commission (OIC), and Thailand Banking Sector CERT (TB-CERT). We provided cyber risk awareness and skillsets for all levels of staff, including management and non-management level, as well as students who will be the new cybersecurity workforce for the financial sector.

DEVELOPMENT TO EMBRACE CHANGE AND CREATE GROWTH OPPORTUNITIES IN THE FUTURE

APPLICATION PROGRAMMING INTERFACE (API)

The BOT recognized the importance of API technology which can be utilized to increase the efficiency of data exchange or services provided among financial service users to be automated, fast, accurate and open. Such technology is a cornerstone of Thailand's financial innovation and system development. The BOT, together with financial institutions, supported the development of standards and the use of digital information to promote financial services, namely, dStatement. Such service has been available since January 24, 2022, and there were currently 9 commercial banks providing the service. dStatement facilitates those who wanted to submit their bank statements as evidence of financial transactions (mostly when applying for loans). Financial institutions can send the information directly to one another upon explicit order and consent from users. This resulted in convenience and time saving to end users in the documentation process.

In addition, BOT has been developing guidelines for the use of API technology in financial services to guide service providers in accordance with international standards regarding the application of API technology, proper risk management and security control. This will help foster financial innovations that benefit the country's financial sector, enhance trust among users and provide appropriate consumer protection and good user experience. The BOT already published the draft of this guidelines for public hearing in June 2022 and aims to launch the guidelines within 2023.

CENTRAL BANK DIGITAL CURRENCY: CBDC

Nowadays, 114 countries around the world have explored and developed CBDCs. The BOT was among the first central banks to recognize the importance of using technology to develop financial infrastructure and, thus, has continuously engaged in the work on CBDC since 2017 starting with the project "Inthanon". Currently, development on CBDC was advanced into two projects: (1) wholesale CBDC used for cross-border payments under the project " mBridge", and (2) retail CBDC used for domestic retail transactions in a limited scope.

Since 2021, the BOT together with the Hong Kong Monetary Authority (HKMA), the Central Bank of the United Arab Emirates (CBUAE), the Digital Currency Institute of the People's Bank of China (PBCDCI), and the BIS Innovation Hub Hong Kong Center (BISIH) has developed the mBridge project and successfully completed a pilot using wholesale CBDC for real-value cross-border payment transactions. The goal of mBridge was to use technology to enhance the efficiency of cross-border transactions using multi-currency CBDC. The mBridge project was considered the world's most advanced development of cross-border wholesale CBDC projects. The mBridge platform demonstrated the enhanced efficiency of cross-border transactions using multi-currency CBDC compared to the current system by eliminating the correspondent banking network, resulting in a substantial decrease in cross-border transfer times from 3-5 days to several seconds and enabling direct peer-to-peer linkages between participating banks which can potentially lower the cost of cross-border transactions. Going forward, the mBridge project will continue building and testing the technology to improve existing functionalities and add enhanced features to the platform, all the while taking into consideration of other dimensions such as policy, regulatory and legal implications.

In 2022, the BOT embarked on the retail CBDC project with an aim to assess the suitability of using technology to develop financial infrastructure which allows the private sector to develop new financial products and innovations using CBDC to meet the diverse needs of the public (mass customization).

Currently, the BOT has conducted the retail CBDC pilot test within limited scope and users to assess the system's efficiency, security and technological design, and also to test the viability of CBDC to be used for developing innovative use cases. To achieve diverse and real-life innovation, the "CBDC Hackathon" was also launched to allow private sector and technology developers to submit proposal use cases. The BOT will evaluate results from the pilot test to determine the direction of CBDC development in the upcoming phase.

The BOT envisaged CBDC as a potential building block for supporting innovation in the financial sector with convenient and secure access to develop solutions. However, at the moment, the BOT has no plan to issue retail CBDC for the general public as the issuance requires a thorough consideration of benefits and associated risks to the financial system. You can follow the news and details about the development of the BOT's CBDC from www.bot.or.th/Thai/DigitalCurrency/Pages/default.aspx

BOX 7

CBDC
DEVELOPMENT OF DIGITAL MONEY: THE PUBLIC-PRIVATE COLLABORATION

6

CENTRAL BANK DIGITAL CURRENCY

9

The BOT has been among the first central banks to recognize the importance of CBDC as being an open and future-ready infrastructure, with the potential to increase opportunities for businesses and the general public to have more convenient and greater access to diverse financial services with lower costs.

Currently, the BOT has explored, developed, and tested the use of retail CBDC for the public within a limited scope (pilot). During this phase, CBDC will be used in conducting cash-like activities, such as paying for goods and services, within limited areas and scale of approximately 10,000 retail users selected by the BOT along with three companies, namely the Bank of Ayudhya Public Company Limited, Siam Commercial Bank Public Company Limited, and 2C2P (Thailand) Company Limited. This pilot phase commenced in late 2022 and is expected to last until the third quarter of 2023.

In addition to testing retail CBDC for payment of goods and services in general, the BOT also sees the possibility of using technology for developing a programmable payment which will facilitate innovative financial products in the business sector to increase efficiency and reduce costs in the financial system.

From August to October 2022, the BOT launched a CBDC Hackathon to provide the public the opportunity to showcase real-life applications of a retail CBDC to foster innovation and benefit the economy. Some of the selected use cases will be tested in a retail CBDC proof-of-concept project to study and evaluate the performance of CBDC by 2023. The BOT (and other central banks around the world) have no plans to issue a CBDC in the near future, as the benefits and risks must be carefully considered as they may affect the country's financial system. The pilot test on retail CBDC -- is a stepping stone for the development of Thai CBDC to enhance its capability to innovate financial products and services, and also closely collaborate with the public.

DIGITAL PAYMENT

In recent years, payment behavior of Thai people has shifted towards digital methods dramatically. The collaboration among the government, banks, businesses, and the public as well as the COVID-19 pandemic help accelerate this uptrend. According to our statistics, the frequency of digital payments has consistently risen from 135 transactions per person per year in 2019 to 400 transactions per person per year in 2022.

In September 2022, the number of PromptPay registrations utilized by the public, businesses, and the government surged to 74.3 million numbers, representing an increase of 5.6 million numbers from the end of 2021. The average daily transfer amount was 48.1 million transactions, equivalent to a value of 134.8 billion baht.

The PromptPay usage reached a new high of 58.1 million transactions per day in December 2022. The majority of transactions were for payment transfers with an average value decreasing continuously to 590 baht per transaction, indicating an increase in daily life usage.

Although cash is still the primary payment method for Thais, the volume and value of transactions have been continuously declining and expected to go with this trend in the long run. In 2022, the volume and value of cash withdrawals through ATMs increased by 4.9 percent and 0.3 percent respectively, compared to the same period in the previous year, as people have started to return to their normal lives after the COVID-19 situation began to ease.

While cash withdrawals from bank branches have decreased by 5.8 percent in terms of volume due to the popularity of digital payments, the value has increased by 2.3 percent. The use of checks has decreased both in terms of volume and value by 4.9 percent and 0.4 percent, respectively. This is mainly due to the shift towards digital payments, such as tax refunds by the Revenue Department and government welfare payments through PromptPay, and businesses being able to transfer money through internet banking up to 2 million baht per transaction.

The BOT aims to drive the infrastructure development to support transactions for both the public and private sectors continuously. The following are key projects summarized:

1 / SMART FINANCIAL AND PAYMENT INFRASTRUCTURE FOR BUSINESS (PROMPTBIZ)

The BOT has been driving the development of Smart Financial and Payment Infrastructure for Business project, so called the “PromptBiz”. The PromptBiz is a unified infrastructure for trade and payment data in digital business processes, leveraging the ISO 20022 international message standard for the transmission of trade data with payment data. The system will enhance the efficiency of the business process, reduce the operation cost, and support the business sector to be digitization. Moreover, the digital footprint can present an opportunity to facilitate access to finance, especially for the SMEs.

The infrastructure provides two main services as follows;

(1) Digital Trade and Payment Services (Track 1) is currently on the process of functional test of core services. Also, the BOT has worked closely with the government agencies and private sectors on the adoption of the PromptBiz.

(2) Digital Supplychain Finance (Track 2) is to support business lending, particularly for SMEs, by utilizing trade data for checking double financing and minimizing a loan approval period. The service launched in December 2021.

The BOT disclosed the PromptBiz plan at National NITMX Day 2022 event.

2 / ENHANCING REGIONAL CROSS-BORDER LINKAGE AND ROLE OF THAILAND IN THE INTERNATIONAL FORUMS

The BOT has continuously promoted cross-border payment connectivity for both payment and transfer services through the ASEAN Payment Connectivity initiative. The objective of this initiative is to provide more convenient, secure, and faster services with lower fees. Not only does it facilitate cross-border transactions for the public, but it also supports international trade and tourism, remittances sent by migrant workers, as well as economic activity.

To date, Thailand has partnered with six countries, Japan, Cambodia, Vietnam, Malaysia, Indonesia, and Singapore in launching interoperable QR payment linkages, enabling customers to pay for goods and services. Thailand has also launched the world's first real-time fund transfer linkage with Singapore (PromptPay-PayNow). These fund transfers are now secure, fast, and cheaper than the costs of existing remittance services. The PromptPay-PayNow linkage has been well-received by Thai and Singaporean users, and this linkage was awarded "Initiative of the Year 2022" by the "Central Banking" Journal. The success of this linkage is expected to pave the way for potential expansion of transaction limits to meet the needs of fund transfers for businesses.

The BOT, along with its stakeholders, will continue to advocate cross-border payment connectivity with ASEAN and other countries. The BOT is encouraging more payment service providers to participate in existing cross-border linkages and enhancing services from QR payment to remittances, with Thailand's PromptPay and Malaysia's DuitNow linkage expected to be launched in 2023. The BOT is also expanding QR payment linkages to new corridors which have significant bilateral trade and tourism flows with Thailand, such as India, Hong Kong, China, and Laos. In addition, the BOT has joined Project Nexus, which is a multilateral cross-border payment linkage connecting multiple domestic instant payment systems, initiated by the Bank for International Settlements Innovation Hub ("BISIH").

The BOT is the Co-chair of the ASEAN Working Committee on Payment and Settlement Systems and the Vice Chair of the Executives' Meeting of East Asia Pacific Central Banks ("EMEAP") Working Group on Payments and Market Infrastructures. This provides opportunities for knowledge and experience sharing among members and promotes future payment linkages between Thailand and Asia-Pacific countries and jurisdictions.

The BOT has also been promoting regional payment connectivity as part of Thailand's 2022 chairmanship of the Asia-Pacific Economic Cooperation ("APEC"). At the APEC Finance Ministers' Meeting in October 2022, the BOT presented the policy paper titled "APEC Policy Considerations for Developing Cross-border Payments and Remittances" for the adoption by other APEC member economies should they consider establishing such linkages. The expansion of convenient, secure, and affordable cross-border payments will result in greater financial connectivity and eventually support greater economic activity in the region.

BOX 8

THE FUTURE IN YOUR HANDS :
SUCCESS AND ADVANCEMENT OF MODERN PAYMENT SYSTEMS.

PROMPT PAY

NEARLY TWO-THIRDS OF THAIS HAVE REGISTERED FOR PROMPTPAY

Transaction volume per day was **48.1** million

Transaction value per day was **134.8** billion

ACCUMULATIVE REGISTRATION WAS **74.3** MILLION NUMBERS

The average value per transaction decreasing continuously reflects the increasing usage of PromptPay in daily life

DATA	DEC 21	DEC 22	Growth (%YoY)
TRANSACTION VOLUME (MILLION TRANSACTIONS)	36.2	48.1	33.2 ↑
TRANSACTION VALUE (BILLION BAHT)	112.6	134.8	19.7 ↑

NEW HIGH OF **58.1** MILLION TRANSACTIONS PER DAY IN DECEMBER 2022

THE AVERAGE VALUE PER TRANSACTION IS **590 BAHT** (DATA AS OF DECEMBER 2022)

CROSS-BORDER PAYMENT

NOT ONLY IN THAILAND, BUT QR PAYMENT IS ALSO AVAILABLE IN MANY FOREIGN COUNTRIES, FOR MAKING PAYMENT AND FUND TRANSFER

Cross-border QR payments are now available in six partner countries. Payment transactions can now be made by scanning QR codes in Japan, Cambodia, Vietnam, Malaysia, Indonesia, and Singapore.

QR PAYMENT LIVE DEMONSTRATION AT INDONESIA

PROMPTPAY-PAYNOW REAL-TIME REMITTANCES

Thailand and Singapore jointly launched the world's first real-time fund transfer through the PromptPay-PayNow linkage.

- From its launch in April 2021 up to December 2022, over 4.95 billion baht was transferred via this linkage. Notably, the volume of transactions significantly increased from 14,000 transactions in May 2021 to 55,000 in December 2022.
- **AS A RECOGNITION OF ITS SUCCESS, THE LINKAGE WAS AWARDED "INITIATIVE OF THE YEAR 2022" BY THE "CENTRAL BANKING" JOURNAL.**

NEXT STEP:

QR PAYMENT: HONG KONG AND INDIA

REAL-TIME REMITTANCE: MALAYSIA (PROMPTPAY -DUITNOW)

PROMPTBIZ

PROMPTBIZ: GAME CHANGER FOR THE BUSINESS SECTOR TO SUPPORT THE ECOSYSTEM OF DIGITAL BUSINESS AND DIGITAL PAYMENT.

FEATURES OF THE SERVICE:

- To deliver payment transactions with trade information by leveraging ISO 20022 message standard format.
- To increase efficiency, reduce cost, and minimize time-consuming in document reconciliation for faster payment process.
- To leverage digital data for extending the business services and accessing to finance.

OTHER FINANCIAL TECHNOLOGIES

1 / PROMOTING FINANCIAL INNOVATION THROUGH THE REGULATORY SANDBOX

BOT supported the development of financial innovations through a regulatory sandbox framework, which allowed financial service providers to test out innovative financial services in a limited environment, while controlling associated risks and maintaining consumer protection under close supervision by the BOT before launching in full-scale. 52 projects successfully exited the sandbox program in 2022, covering areas such as cross-verification of identity via the National Digital ID (NDID) Platform, use of biometric technology for identity verification and authentication, P2P lending, near real time cross-border remittance and e-LG on Blockchain operated by BCI (Thailand) that enhanced operational efficiency and reduced issuance time from 3-7 days to less than 1 day. In addition, 25 projects are currently in the sandbox.

2 / DIGITAL IDENTITY INFRASTRUCTURE: NATIONAL DIGITAL IDENTITY (NDID) PLATFORM

BOT, in coordination with relevant government agencies and private sectors, has been developing National Digital Identity (NDID) Platform, the infrastructure to support electronic data exchange for cross-verification of digital identity. NDID aims to facilitate Thai people for easier, faster, and more secured access to various online services by public and private sectors, for example, opening bank and securities accounts, requesting credit reports from National Credit Bureau (NCB), and filing personal income tax. As of December 2022, 10 commercial banks and 2 non-banks were participating in the NDID platform under BOT's regulatory sandbox program. 9 million people already registered to use NDID services, with more than 1.6 million bank accounts opened and more than 20 million NCB credit report requests successfully executed.

Moreover, BOT encouraged NDID platform to expand to other services, such as dStatement, which allowed consumers to send bank statement data directly between banks since January 2022. In addition, BOT and relevant agencies are developing corporate digital identity platform to help further drive Thai financial sector's digital transformation and wider adoption of digital financial services. This project should be ready for an initial launch in Q4/2023.

The joint press release on the launch of dStatement service

EMBEDDING SUSTAINABLE DEVELOPMENT

SUSTAINABLE BANKING

The BOT promotes Thai financial institutions to recognize the importance and urgency of sustainable banking (i.e. conducting banking business under Environmental, Social, and Governance (ESG) principles). So far, the BOT has been focusing on awareness raising and integration of ESG factors into banks' business operations and organizational culture including:

(1) Encouraging commercial banks to assess their progress on the aspect of responsible lending. Recently, the Thai Bankers' Association (TBA) declared an ESG (Environmental, Social, and Governance) declaration in August 2022, to provide all Thai commercial banks with direction and targets in aligning their business operations with ESG principles.

(2) Collaborating with the TBA to promote initiatives to support access to financial services, such as adjusting bank account opening guidelines and improving service points that support the financial access for persons with disabilities.

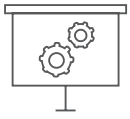
In addition, the BOT set a direction to promote the financial sector's readiness for environmental changes and to support the economic transition to environmental sustainability in a timely and appropriate manner for the Thai context as Thailand has been and will be affected by environmental issues, particularly severe impacts of climate change. The BOT thus released a Directional Paper on Transitioning towards Environmental Sustainability Under the New Thai Financial Landscape to communicate its direction and policies to the public in August 2022.

One of the key foundations for supporting environmental sustainability is to assist financial institutions to incorporate environmental aspects into their business operations and decision-making processes and provide financial products and services that meet the needs of the business sector. The BOT developed

[16] All five key building blocks are (1) adjusting financial institution's business operation to create environment-related financial products and services that meet the needs of business sector (products and services) (2) economic activity classification that consider environmental factors (Taxonomy) (3) systemic and accessible environmental database and financial institution disclosure (data and disclosure) (4) supporting measures (incentive) (5) capability and expertise of financial sector personnel (capacity building)

the Policy Statement of the BOT on "Internalizing Environmental and Climate Change Aspects into Financial Institution Business" which is expected to be published in the first quarter of 2023. This framework aims to provide a standard practice for financial institutions to internalize environmental and climate-change aspects into their business operations in four areas:

Firstly, governance, where the board of directors and senior management of financial institutions play prominent roles and illustrate strong tone from the top by setting the direction and providing oversight for environmental actions.



Secondly, strategy, where financial institutions should set strategic plan considering opportunities and risks from environmental factors that impact their own and stakeholders' businesses. Aspirational targets and implementation plans should be put in place to measure the progress tangibly.

Thirdly, risk management, where financial institutions should integrate environmental risks as part of risk culture and organizational risk management process. This includes having mechanisms and processes to identify, assess, control, and monitor environmental risks in an end-to-end manner.

Fourthly, disclosure, where financial institutions provide their stakeholders and the public with transparent direction and progress of their environmental performance. This involves disclosing an up-to-date information on strategy, implementation plan, governance, and environmental opportunities and risks management that is aligned with international guidance or standards such as the recommendations from the Task Force on Climate-related Financial Disclosures (TCFD) to gain confidence from stakeholders and the public.

DATA GOVERNANCE

The BOT revised the data governance structure to ensure its appropriateness and conformity with the BOT's current context and mandate. In addition to an appointment of Data Governance Committee (DGC) to determine data strategy, policy, and roadmap including a standard of corporate data management. In 2022, the BOT appointed Data Subcommittee to advocate the DGC in determination of data strategy and policy, as well as monitoring and moving forward of data management efficiently, over the data life cycle. This helped facilitate alignment of data management within the organization as the One BOT while taking into consideration of cost-benefit analysis, collaboration with external parties, and the public benefits from data disclosure as well.

The BOT highly became aware of privacy right of data subjects according to Thailand Constitution, and placed great importance to personal data protection under Personal Data Protection Policy (PDPA) published on the BOT website as well as all articles determined by Personal Data Protection Act B.E 2562. The BOT regularly highlighted and brought awareness toward all executives and employees through various channels, e.g., online compliance course on "the BOT and personal data protection", communication regarding the personal data protection guideline in the form of infographics. This aimed to educate and enhance all BOT executives' and employees' awareness about personal data privacy and protection abided by core fundamental principles which were necessity, proportionality, legitimacy including proper data security safeguards under enterprise risk management framework and international standards.

The BOT further promoted the concept of a balance between personal data protection and advantage from worthwhile data usage, encourages the culture of work and decision-making on the basis of data evidence (so-called, data-driven organization), facilitated data linkage and exchange among organizations for formulation of any essential economic policy, and also enhanced data quality as well as better governance standards constantly.

FINANCIAL CONSUMER PROTECTION

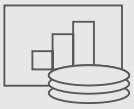
Access to fair financial services is a fundamental right of Thai citizens. The BOT has over the past years continuously promoted comprehensive financial access as well as ensured that consumers could choose financial products and services suitable to their needs and understand their own rights and responsibilities. Meanwhile, the BOT encouraged financial service providers to be aware and be responsible for treating the customers fairly by considering the customers' needs and financial capabilities under the 4-non principles: non-fraudulent, non-coercive, non-intrusive, and non-exploitative. The fair financial service environment would boost consumer confidence and support financial businesses in the long run.

1 / CONSUMERS RECEIVE FINANCIAL PRODUCTS AND SERVICES MATCHING THEIR NEEDS, ARE FAIRLY TREATED, AND CARRY LESS FINANCIAL BURDEN

To promote greater access to affordable financial products and services that satisfy consumers' needs, the BOT issued regulations on practices and disclosure regarding interest, service charges, and penalties for financial products and services for all financial service providers under the BOT's supervision. The guiding principles of the new regulations are as follows:

1

the collection of service charges must be based on actual costs incurred and not redundant



2

a calculation base must be consistent with the costs incurred

3

the financial service providers must refund the service charges proportionate to the unused period and inform the consumers the related refund conditions and methods

4

the financial service providers must not put a burden on the consumers by collecting service charges that offer no values added

5

the disclosure of information must be transparent, clear, accurate, and up-to-date

6

the financial service providers must supervise the business partners acting on their behalf to ensure fair treatment to the consumers. In the same regulations, the BOT also amended the regulations on practices related to deposits and loans for financial institutions and specialized financial institutions (SFIs) to better suit the current financial market environment and technological development. The regulations are effective since April 1, 2022.

Along with the rigorous ongoing supervision, the BOT is currently reviewing the regulations on market conduct and the regulations on the imposition of default interest and debt payment hierarchy to broaden the scope of application to include all types of supervised entities, which would promote a level-playing field, and to make the policies clearer, more flexible, and more efficient, which would lead to the more standardized services across the industry.

In 2022, the BOT encouraged the financial service providers whose customers were significantly vulnerable and those who failed the market conduct assessment to improve their operations to comply with the BOT's regulations. Besides, the BOT, hoping to build awareness of data privacy and security, published the progress of the accusations of the financial service providers who disclosed customers' data to others and contacted the customers without their consent.

The BOT, furthermore, provided crucial findings and recommendations from the examination of the imposition of default interest and debt payment hierarchy to commercial banks and foreign bank branches to ensure that their practices were not excruciating nor expediting the non-performing loan, but inducing financial discipline by considering the debtors' ability to repay. In case of any regulatory breaches, the financial service providers were required to properly compensate the debtors.

As part of the consumer risk assessment, the BOT scrupulously monitored significant risks, e.g., the issue of mis-selling, bundling bank assurance products, and data privacy, to promote the financial service providers to maintain the fair service standard.

The BOT also collaborated with the Securities and Exchange Commission (SEC) and the Office of Insurance Commission (OIC) in enhancing regulatory efficiency by reducing the burden that came from differences in supervisory practices and conjointly provided recommendations for the drafted Notification of the Office of the Consumer Protection Board (OCPB) regarding hire purchase agreement for car and motorcycle and consumer lending of financial institutions. This aimed to encourage the alignment of consumer protection policies among regulators as well as promote the sustainable growth in the automobile industry.

2 / CONSUMERS ARE ASSISTED, ADVISED, AND FINANCIALLY EDUCATED

Consumers were able to reach aid when faced with challenging problems caused by financial service providers, gain financial knowledge, detect financial fraud, receive debt advice, and access debt relief measures through the Financial Consumer Protection Center (FCC) 1213 channel as well as all three regional offices comprised of Northern, North-Eastern, and Southern regional office, who actively delivered the measures to consumers at large, in particular, through three target groups consisting of:

(1) Government agencies and private sector. As they were mediators with the potential to reach and communicate to debtors in each area, the regional offices arranged the conferences passing on the measures and organized classes on financial knowledge, e.g., financial management projects for the community, to build experts communicators (multiplier) in that specific local area. Moreover, the regional offices coordinated with the local public sector and other related networks, such as entrepreneurs' associations, provincial consumer associations, foundation, and municipal government, to advise debt relief mediation and assist debtors, especially the vulnerable group.

(2) Financial service providers. To enhance responsible and fair services to the consumers and to ensure correct implementation, the regional offices regularly organized meetings with financial service providers' branches in the region.

(3) Vulnerable consumers and low-income households. The regional offices constantly communicated information regarding debt assistance and financial literacy through both online and offline channels, i.e., online meetings, television, community radio stations, interviews, radio spots, video clips, podcasts, and articles in local online media. This aimed to create financial immunity which the consumers could apply not only to themselves but also to their families in many areas, e.g., financial fraud awareness, personal finance, debt management, and consumers' rights and responsibilities.

3 / FINANCIAL SERVICE PROVIDERS WERE AWARE OF RESPONSIBLE LENDING, FINANCIAL INCLUSION, AND SUSTAINABILITY.

As a part of the sustainable household debt resolution framework, the BOT's work in progress, the financial service providers were encouraged to responsibly lend from start to finish; therefore, the debt would be originated by well-informed decision, debtor's affordability, and financial sustainability. The financial service providers were likewise encouraged to approve the loan by risk-based pricing method to enhance financial inclusion and financial discipline.

FINANCIAL LITERACY PROMOTION

The BOT collaborated with both public and private sectors in driving the prevention and resolution of household debt while strengthening financial immunity to ensure Thais' financial health throughout all life stages.

HOUSEHOLD DEBT PREVENTING AND RESOLVING

The BOT promoted debt relief giving advices to support sustainable debt resolution by developing e-learning courses on debt management in collaboration with the Stock Exchange of Thailand (SET) and Sukhumvit Asset Management Co., Ltd. (SAM). The Debt e-learning courses included the whole debt journey (getting into debt, during being in debt, and dealing with debt overhang problems) so that people can manage their debt situations appropriately. In addition, the BOT developed a course on debt and financial dispute mediation in collaboration with the Department of Protection of Rights and Freedoms, the Ministry of Justice, and the Institute of Education and Development of Peaceful Conflict Management. The program aimed to uplift skills of mediators registered under the Department of Rights Protection (registered mediators approximately 3,500 persons) to be able to assist debtors reaching the solution on financial cases that hence reduce the amount of court cases, which normally take longer process and could deteriorate situation for debtors.

For specific debtor sectors, the BOT took proactive approach on dealing with debt issue among government officials, teachers, and educational officers of the Ministry of Education by providing e-learning courses to strengthen financial stability through understanding of debt cycle, avoiding excessive debt, hench, be able to manage money appropriately.

For low-income households, such as farmers and self-employed people with unstable income streams, the BOT conducted field visits to communities in both central and regional areas in collaboration with other agencies, such as community visits with the Social Development Department of Bangkok Metropolitan, field visits with farmers in Chiang Mai and Kalasin provinces with the Royal Initiative Discovery Foundation, and visiting communities outside the city in the South in collaboration with the Community Development Department, Ministry of Interior to understand and collect the local factual problems for supporting information to formulate policies and find appropriate solutions to debt problems and promote financial literacy context in the next phase.

ENHANCING PUBLIC FINANCIAL IMMUNITY

Financial literacy is an important life skill that will make people being financially immune under the midst of volatile socio-economic challenges and have financial resilience. The BOT aimed to promote financial literacy in an easy-to-understand manner with focus topics that are relevant to all ages such as savings, debt management, digital financial literacy, and prevention from financial fraud. The BOT enhanced communication efficiency by leveraging social listening tools to capture situations effectively and support prompt and extensive responses.

In 2022, the BOT promoted financial knowledge and fraud alert to public which reached over 33.5 million online views (59 percent increased from 2021) through the BOT's online channels such as Facebook, website, YouTube and TikTok including, channels of strategic partners with over 20.2 million followers (21 percent increased from 2021). In addition, the BOT also leveraged local media through connecting with local staff and volunteers to deliver content suitable for context of each area[17].

In addition, the BOT fostered financial knowledge learning through the BOT Learning Center. Activities such as Talk & Share focus on money management and updates on key financial innovation trends.

As the COVID-19 situation unfolded, BOT Learning Center fully returned to its normal operation. Students and the general public can use the full range of learning spaces such as libraries, museums, activities and rotating exhibitions which were available throughout the year. The BOT learning Center welcomed to all on Tuesday to Sunday from 9.30 a.m. - 8.00 p.m. with free of charge.

[17] Radio stations and Local TV Local staff and volunteers of partner agencies. They are distributed nationwide, such as Village Health Volunteers (Or Sor Mor), Ministry of Social Development and Human Security, Community Development Department, Community Organizations Development Institute, and National Savings Fund.

BOX 9 THE BOT'S ROLES AND COMPREHENSIVE MEASURES AGAINST FINANCIAL FRAUDS

Nowadays, digital frauds and scams in Thailand, such as fraudulent SMS and phone calls disguised as banks or government agencies to trick victims to transfer money, increase significantly and affect people widely. The BOT recognized the situation and persistently collaborated with other government organizations, both inside and outside the financial sector, such as the Thai Bankers' Association (TBA), the National Broadcasting and Telecommunication Commission (NBTC), the Royal Thai Police, the Anti-Money Laundering Office (AMLO) and the Ministry of Digital Economy and Society (MDES) in order to establish comprehensive measures to "prevent, detect, and respond" against fraudsters and "notify and help" financial fraud victims by implementing as follows:

1 PREVENTION AND DETECTION

- Publishing a list of legitimately licensed lenders from the BOT as well as their services and contact channels on the BOT website. Thus, consumers can verify and select credible options and avoid fraudulent lenders.
- Cooperating with NBTC and telecommunication organizations to mitigate fraudulent SMS and scam calls. This included registering SMS sender names of Thai banks, differentiating potential scam calls from overseas, and raising consumer awareness.
- Strengthening fraud risk management of financial institutions and e-payment providers by issuing fraud risk management guidelines covering governance, fraud risks management, consumer protection, and proactive collaboration with stakeholders.

2 RESPONSE

- Providing advices and handling inquiries and complaints regarding financial products and services through the Financial Consumer Protection Center (FCC) at hotline 1213.
- Encouraging Cyber Crime Investigation Bureau and financial institutions in the establishment of Thai Police Online Report Portal and enhancing the communication process between the cyber crime police and the banking sector.

3 COLLABORATION

- Integrating collaboration with related stakeholders, such as organizations in banking and telecommunication sectors, the Royal Thai Police, AMLO, and MDES, etc., to encourage policy-driven measure establishment, as well as the enactment of laws and regulations to mitigate scams and digital fraud.

4 COMMUNICATION AND NOTIFICATION

- Raising digital fraud awareness and financial literacy through the BOT's and partners' channels to promote digital-banking hygiene, such as how to use digital payments securely and how to respond when falling for scams.

ENHANCING DESIRABLE FINANCIAL BEHAVIOR

The BOT continued its financial literacy projects among the youth and a working population consisting of 2 leading projects as follows:

1 / THE FINANCIAL LITERACY COMPETITION PROJECT "FIN. DEE WE CAN DO!!!"

Targeted vocational students is an activity-based program that helps students deal with financial issues in their context. In 2022, the program engaged over 117 vocational colleges (40 percent of total vocational colleges nationwide) since the projected started in 2018.

In addition, the BOT has organized a role model track to allow award-winning college to expand their financial literacy project to wider target groups such as network schools or colleges and surrounding communities, to strengthen the network of financial literacy promotion at the vocational education level. Currently, there are more than 50 model colleges.

In 2023, the financial literacy project will be continued as a part of the vocational skills national competition hosted by the Association of Future Thai Professional, under the endorsement of the Office of Vocational Education Commission. The collaboration is expected to achieve sustainable engagement among vocational colleges nationwide.

Fin. Dee We Can Do!!!, an activity-based program targeted at the vocational students to deal with financial issues.

2 / THE FINANCIAL LITERACY PROJECT IN WORKPLACE “FIN. DEE HAPPY LIFE!!!”

Targeted the working-age population was the trainer program that aimed to create financial mentor (called “Fin. Trainer”) from participated organizations aimed at changing the financial behavior of employees. In 2022, the project engaged 109 new organization (public and private) and successfully trained 682 Fin. trainers were trained to transfer knowledge to that were able to disseminate financial literacy contents to their colleagues in a total of 89,281 employees in the organization. The BOT also developed the toolkit[18] and online financial health check program to be used as a standardized scale up platform which was available on https://www.1213.or.th/th/Pages/FinancialHeathCheck.aspx. In addition, the BOT awarded 71 organizations to encourage project continuity.

The abovementioned were parts of the BOT’s effort to collaborate with strategic partners in the public and private sectors. Together, we worked together to elevate financial literacy at the national level under “the Financial Literacy Action Plan B.E. 2565-2570” of the Office of Fiscal Policy, Ministry of Finance, covering all groups of people from childhood to retirement age, as well as vulnerable groups[19].

Financial Consumer Protection Center of the BOT

www.1213.or.th/th/Pages/FinancialHeathCheck.aspx

Fin. Dee Happy Life!!! activity aiming at changing the financial behavior of employees

[18] The toolkit comprises of contents, video clips of personal finance management (over 30 section) and infographics.
[19] The Cabinet approved on June 14, 2022 and there is an order of the Office of the Prime Minister to appoint a “Financial Literacy Steering Committee” on August 17, 2022 to be a mechanism for directing, driving, and monitoring the implementation of the action plan systematically continuous and sustainable.

OPERATION FOR ORGANIZATIONAL SUSTAINABILITY – A DETERMINATION TO CONSERVE ENVIRONMENT.

The BOT has continuously taken measures to protect and conserve the environment. In 2022, the 3-Year Plan on Environmental Internal Management was adopted, aimed at reducing its operations-related greenhouse gas emissions by 30 percent by 2030. Moreover, the BOT aimed to lead by example the best practice in carefully, economically, and efficiently utilizing resources. The Plan covered three operations as follows:

(1) Internal activities - the BOT implemented sustainability guidelines and environmental impact mitigations in two key areas. The First one is to create environmental awareness among employees, and the second one is to mitigate the environmental impact as well as to reduce greenhouse gas emissions.

(2) Reserve management - the BOT managed reserve mindful of sustainable investment by taking into account the work on ESG, in order to accumulate long-term returns together with building up positive or reduce negative impacts on the society and environment. This goal would be achieved through two main channels: the investment process and the selection and assessment of counterparties and external fund managers.

(3) Banknote production and distribution - The BOT focused on reducing greenhouse gas emissions from the production as well as using more environmentally friendly raw materials and enhancing efficiency in banknote logistics.

1 / BOT'S INTERNAL ACTIVITIES: MANAGING RESOURCES FROM ACTIVITIES WITHIN THE OFFICE

The BOT was committed to operating with regard to energy and environmental sustainability. This commitment was achieved by raising employees' awareness of climate change and integrating resource conservation in daily life. In so doing, an energy management system was utilized according to green office standards to achieve efficient energy management and resource consumption. The following actions were taken in 2022 to help reduce greenhouse gas emissions:

1. BUILDING ENVIRONMENTAL AWARENESS (GREEN MINDSET)

The BOT aimed to raise awareness of the efficient use of resources by announcing a policy and target for energy and environmental conservation. The goal was to be the organization that served as a role model and created a culture of sustainability. In this regard, the BOT drove for the evaluation of environmental awareness among the BOT's employees.

To achieve this, the BOT conducted knowledge-based activities throughout the year to create a "green community" and share the experiences of people who were passionate and inspiring in environmental conservation. The organization also campaigned and urged employees to be aware of and participate in reducing environmental impacts such as sorting waste properly, reducing landfill waste, and using electronic documents instead of paper. These efforts were continuously pursued over the years.

In 2022, the BOT aimed to reduce the use of single-use plastic containers through the 3Rs (Reduce, Reuse, Recycle) principle by seeking cooperation from merchants. The organization also organized incentive activities, such as a project to collect points for redeeming prizes by bringing personal containers to buy food and beverages. Additionally, the BOT would support the behavioral adjustment of waste sorting from home to be collected at the organization for recycling and support the sorting of unused items in good condition to be passed on to those in need. The organization also communicated about energy consumption each month to raise awareness of such issue among employees.

To cover all dimensions of environmental conservation in 2022, which marked the 80th anniversary of the BOT, a number of activities were organized. These included events that were environmentally friendly such as green meetings and green event guidelines according to international standards. For all meetings, rooms and food were chosen fit for the number of attendees, while biodegradable or reusable decorative materials and electronic signage were used instead of paper or vinyl.

In order to build environmental awareness throughout the year, the BOT conducted two green surveys to measure environmental awareness and global warming and employees' participation. The first survey showed good to very good awareness (green mindset) about environmental conservation and the impact of climate change, which was at 62 percent. In the second survey, the good to very good green mindset result was 56 percent based on 1,027 respondents which doubled in number for the first survey. This increase in survey responses reflected the increased participation and awareness of employees in the organization.

2. CLIMATE PROTECTION OPERATIONS

In 2022, the BOT aimed to reduce its greenhouse gas emissions by 20 percent compared to the base year of 2017 in order to become a low-emission organization. To achieve this goal, the BOT planned to implement operations for energy and environmental management that covered electricity consumption, fuel, waste, paper, and tap water. The organization placed particular emphasis on reducing greenhouse gas emissions from electricity usage, as this accounts for 95 percent of the total greenhouse gas emissions of the BOT. In the past year, the BOT carried out various operations as follows:

HEAD OFFICE	NORTHERN OFFICE	NORTHEASTERN OFFICE
Replaced chiller of the data center with a more efficient model	- Replaced the water pump of the plant watering system with an inverter model adapted to usage - Replaced the traditional light bulbs with energy-efficient LED bulbs	Replaced the office building's light bulbs with LED bulbs
Each office has an energy-efficient chiller plant management to conserve energy.		

Overall, in 2022, the BOT successfully reduced its greenhouse gas emissions by 25 percent, exceeding the target for all aspects of energy use, such as electricity, fuel, waste, paper, and tap water. This was partially due to most employees working from home at the beginning of the year, in response to the COVID-19 pandemic, which resulted in a more sustainable working style to accommodate emergency situations. Despite the eventual return to normal work operations, the BOT remained committed to reducing its environmental impact in a sustainable manner. It would continue to prioritize the reduction of resource consumption and raise awareness among employees, through initiatives, such as conserving energy and promoting the use of clean technology for maximum efficiency.

2 / RESERVE MANAGEMENT: SUSTAINABLE INVESTMENT

The BOT reserve management framework adhered on triad of objectives: safety, liquidity, and risk-adjusted return, whereby the BOT has continuously explored systematic approaches to incorporate ESG into our investment process without deviating from the three traditional objectives. Therefore, we embarked our ESG investment journey in a cautious and gradual manner as some of the ESG implementation vehicles, such as some sector of Green and Social bonds, could give rise to liquidity and credit concerns.

Nevertheless, the BOT took an initial step towards responsible investment by excluding several industries that deemed to have controversial effect on social and environmental issues, such as casinos, brewers, and tobacco in equity portfolio, which was also beneficial in terms of managing reputational risk.

Furthermore, the BOT considered sustainable investment by integrating ESG factors into our investment process with intention to support long-term objective of enhancing risk-adjusted return as well as to create positive real-world impact or minimize negative externalities on social and environmental aspects. Our attention was drawn to the pressing issue of environmental impact, especially climate change, on overall economy and investment implication. The effect of climate change was widely recognized through two main channels (1) physical risk, which was the physical damages of climate change to the economy, e.g., floods and (2) transition risk, which was the risk related to policy changes to support the transition to a low-carbon economy.

Investment in countries or companies that had ability to manage both risks from climate change can mitigate or reduce downside risk to the overall reserves, hence improving efficiency. One of the main tools that the BOT and industry commonly used in this area was portfolio climate stress test, based on a quantitative model, which measured

and translated potential impact from climate risk to the economy, financial market, and portfolio return.

Apart from incorporating ESG in the investment process, the BOT also took into account ESG factors when selecting and assessing counterparties and external fund managers, not only for reputational risk management, but also for expressing the BOT stance on sustainability goal to the broader market participants.

BOX 10

PATH TO ENVIRONMENTAL SUSTAINABILITY

Amidst the changes in the environmental landscape, ranging from increasingly severe natural disasters to environmental policies implemented by various countries, including Thailand, which has set a target of achieving carbon neutrality by 2050 and a net zero emission target by 2065, all sectors of the economy must advance together efficiently to achieve the common goal of environmental sustainability.

As an entity responsible for the stability of the economy, financial institutions and financial system, the BOT places great importance on promoting the financial sector to adapt and support the economic transition to environmental sustainability, in a timely manner and without negatively disrupting the economy. The adjustments should not be rushed to the extent that small and medium-sized enterprises (SMEs) are unable to keep up and lose their competitiveness, nor should they be delayed to the point where the economy suffers losses and instability. In this regard, the BOT established a strategic direction with the aim of achieving outcomes in three areas, as follows:

The first outcome is that the financial institution system is stable and reliable in terms of its ability to manage environmental risks and support the transition of the economic system towards environmental sustainability. Financial institutions are thus required to incorporate environmental factors into their business operation and provide transparent disclosure of their environmental practices, in accordance with international standards. Furthermore, they must have effective tools to assess and manage environmental risks. The BOT is expected to publish the Policy Statement on 'Internalizing Environmental and Climate Change Aspects into Financial Institution Business' in January 2023. This framework will be used as a reference for the development of an industry handbook, which will guide financial institutions on how to effectively apply the policy statement in practice. The handbook is expected to be completed by mid-2023.

The second outcome is that Thailand has an ecosystem supporting green and transition finance. This requires standardized metrics for measuring and assessing the environmental friendliness of each economic activity, environmental databases and systems that are efficient for financial institutions and related parties to evaluate environmental risks, and qualified personnel who can assess environmental opportunities and risks. The BOT

has taken several steps towards this end, including: (1) participating in the Thailand Taxonomy Board to develop a classification system of economic activities based on their environmental impact (Thailand Taxonomy) that aligns with the country's context and international standards. This classification system will help various sectors, especially financial institutions, as a reference for financing to support businesses in becoming more environmentally friendly. The Thailand Taxonomy for energy and transportation sectors is expected to be completed within the first quarter of 2023 and will be later expanded to other important sectors; (2) establishing data networks with both financial and non-financial organizations to exchange and utilize environmental data across organizations; and (3) collaborating with related agencies for the capacity building of financial sector personnel. In 2023, emphasis will be placed on training courses on climate scenario analysis and stress testing and disclosure practices by the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD).

The third outcome is that the financial sector offers services and financial products that meet the business sector's transition needs in tangible manner. Financial institutions should develop both green and transition products that effectively support and contribute to the various business sectors' timely transition. These financial products and services must be provided within the appropriate financial institutions' scope of business and incentives, to avoid additional risks that could undermine financial stability. The BOT will review relevant criteria, such as financial business scope, and cooperate with relevant agencies, including financial institutions, to develop strategies to promote, motivate, and assist business sector transition especially the SMEs. Examples include low-cost transformation loan, and appropriate advisory services from financial institutions.

However, the strategic direction of the BOT mentioned above is merely one part of the overall effort to support the transition of the Thai economic system towards environmental sustainability. Concrete outcomes would require strong collaboration and harmonization of implementation plans from all related parties. Therefore, the government is required to communicate the understanding and urgency of this topic, and issue policies to support business, financial, and household sectors in shifting their living and business practices onto the path of environmental sustainability.

ESG CONSIDERATION FOR THE BOT'S RESERVE MANAGEMENT

The BOT incorporates ESG in our investment process, while considering peers' approaches, to ensure long-term capital preservation and create positive real-world impact to ensure a greener and more sustainable future.

Our ESG considerations in Strategic Asset Allocation consist of top-down (by country) and bottom-up (by company) approaches. In the first approach, we integrate social and governance issues into the country's potential output assessment along with an increasing emphasis on climate change analysis of physical and transition risks. We believe that gearing our investment towards country with a high degree of self-sufficiency and resilience to climate shock would improve the efficiency of reserve portfolio particularly via enhancing risk-adjusted return. In the latter approach, we consider not only negative screening and integration approaches, especially for equity universe, but also exploring how to channel our investment for the real-world impact based on United Nations Sustainable Development Goals (UNSDGs).

3 / BANKNOTES PRODUCTION AND DISTRIBUTION

Some main roles of the BOT are to design, to print and to manage the good-quality banknotes to be available and sufficient for the public which need to consume energy, resources and operations then release wastes. The BOT has been focusing on environmentally friendly and fully efficient operations, and sustainability within the organization.

1. ENVIRONMENTALLY FRIENDLY BANKNOTES

In 2022, the banknotes' format and characteristics were improved to be environmentally friendly by issuing the 20-baht polymer banknotes instead of the paper ones. The polymer banknotes were made from Biaxially Oriented Polypropylene (BOPP) plastic which was well durable for humidity and dirt with longer lifespan of approximately 2.5 times compared to the paper banknotes, contained various and advanced anti-counterfeit features as well as less consequences to environment, e.g. banknotes production for replacement, transportation and distribution and destruction of old and worn out banknotes.

Moreover, the BOT has been continuously certified for the environmental management system (ISO 14001) and for the green industry level 3, green system, from the Ministry of Industry which ensured that banknotes production procedures were environmentally friendly and in line with international standard.

2. EFFICIENT USE OF RESOURCES

2.1 Alternative energy usage

The BOT were focusing on energy usage reduction in banknotes production with introducing of solar system as the alternative energy since 2020. In 2022, the BOT used the full portion of alternative energy to the highest level defied by law at 1,000 kW which could help reducing electricity usage of 1,000,000 Kilo watt-hour per year, saving 5,000,000 baht per year, greenhouse gas emission of 600 Ton CO2e per year (9 percent reduction compared to 2020). Moreover, the BOT also planned to use solar system to the Consolidated Cash Center or CCC.

2.2 Green mindset establishment

With the Emphasis on sustainability establishment in the organization, the BOT established the green mindset to employees, e.g. information providing, training, no single-use plastic campaign for plastic bag, plastic cup in canteen, fabric or paper bag donation.

2.3 Greenhouse gas reduction

The BOT set the working group to collect data of the greenhouse gas emission from banknotes production and involved in the Carbon Footprint of Product: CFP evaluation for banknotes which measured the greenhouse gas emission for all stages of banknotes life cycle. All 5 denominations of the Thai baht banknotes 17-series were evaluated for CFP in 2021 and the new 20-baht polymer banknote was evaluated in 2022 aiming at getting the data to improve or change the procedures to reduce the greenhouse gas emission from banknotes production in the future.

CREATING TRUST AND CREDIBILITY FOR THE PUBLIC

LISTEN, INCREASE CHANNELS, AND ENHANCE COMMUNICATION NETWORKS EFFECTIVELY

In light of the ongoing policy normalization under uncertain global situations and domestic conditions that face various challenges, communication is a vital tool for the BOT in fostering understanding, preventing mis-information, and preserving the public's trust.

In 2022, the BOT's communication channels still began with "listening" through various tools, both from direct stakeholders as well as through social media listening tools. These points and opinions were gathered, analyzed, and utilized as part of the strategy formulation process to enhance communication effectiveness, direct, targeted, and through appropriate channels.

This year, the BOT added new communication channels to enhance economic and financial literacy through the program "Let's talk with the BOT", which discussed current financial market topics with experts and invited, or the program "You ask, BOT answers", where BOT executives or subject specialists would address questions or points of inquiries from online media.

In addition to having a centralized method of communication, the BOT also utilized opportunities from continued on-site and on-location visits to listen to the issues facing the public and private sectors across different geographies, which were then deciphered to try to resolve such problems. This also led to a new form of knowledge transfer and communication with the public, under the program "Let's talk with the BOT - Special", which received positive comments from the public regarding the BOT's revised communication methodology.

Communication was also a very important tool to address "financial threats" which came in various forms and was increasingly causing more harm. Such methods included call center gangs, falsely referencing credible organizations or people, as well as sending fake applications via line to steal information from smartphones. Therefore, the BOT continuously provided knowledge and understanding, via both BOT channels and through alliances such as the media, influencers, and various agencies both from the public and private sectors.

Furthermore, the BOT also saw opportunities to expand its public outreach to include more grassroot communities across the region by capitalizing on the trust that relevant parties, such as the public sector, private sector, as well as the general population, had in the BOT's 3 regional offices. Given this edge, the BOT was able to elevate its communication and knowledge sharing through regional offices and networks, acting as both a warning system and promoting financial literacy to the local public, to build up immunity so that Thai people can recover from any potential crisis they may face.

Going forward, the BOT aims to create various communication methodologies, which will be appropriate for different target groups, as well as increasing communication channels to reach a broader range of audiences, as well as continuously improve its communication strategies.

Let's talk with the BOT - Special with the episode of "Taew Aew Chang Moi : Reviving the Old City of Chiang Mai"

BOX 11 VOICELESS COMMUNICATION – THE BOT WARNS AND PROVIDES KNOWLEDGE TO THE HEARING-DISABLED.

In the past, the BOT placed significant efforts in publishing media that was believed it can widely communicate with the public. However, there were audiences that audio and print media were not appropriate means of communication, such as those with hearing disabilities. According to data from the Office of the basic Education Commission (OBEC), Ministry of Education, only 21,317 of those who have hearing disability, including those with and without a Disabled Person ID card, have access to inclusive education (or 5.13 percent out of 415,739 students in all forms of inclusive education). Given their inability to listen and read, hearing-disabled people are another vulnerable group that may easily fall victim to financial frauds.

Voiceless communication to the hearing disabled is; therefore, another target that the BOT wants to accomplish.

In 2022, the BOT launched sign language video clips which focused on 3 common financial frauds: phishing, ponzi schemes, and mule accounts. These clips were published on the BOT's website and shared with the Thai Sign Interpreter Association. These clips marked the beginning and driver of cooperation between relevant organizations to promote financial literacy to the disabled.

In 2022, the BOT, in cooperation with the Department for Empowerment of Persons with Disabilities, Ministry of Social Development and Human Security, and the Thai Sign Interpreter Association, planned to launch a project to provide training in terms of economic terminologies, financial literacy, and financial frauds to provide important knowledge to hand sign interpreters so that they may pass on such information to the hearing disabled on a more granular basis. The BOT hoped that this type of communication cooperation will help increase the chance for vulnerable groups in Thai society to access vital information.

GIVEN THEIR INABILITY TO LISTEN AND READ, HEARING-DISABLED PEOPLE ARE ANOTHER VULNERABLE GROUP THAT MAY EASILY FALL VICTIM TO FINANCIAL FRAUDS.

The BOT has made the video clip on 3 common financial frauds in a sign language to promote the financial literacy to the hearing -disabled.

THE BANK OF THAILAND'S INTERNATIONAL COOPERATION

The BOT played active roles in enhancing international financial cooperation in order to preserve economic and financial stability in Thailand and the region, which helped strengthen the BOT's recognition at the international level.

THE BOT'S PARTICIPATION IN INTERNATIONAL ORGANIZATIONS AND INTERNATIONAL FORA

The BOT actively participated in the global policy discussions, with the BOT high-level executives being invited to key international fora, including World Economic Forum 2022 and BOAO Forum for Asia 2022 Annual Conference. In addition, the BOT continued to push forward the need for the International Monetary Fund (IMF) and the Bank for International Settlements (BIS) to adapt the concept of an integrated policy mix that allowed greater flexibility for each economy to deploy multiple complementary policy tools suitable for their unique circumstances. The IMF would leverage on Thailand's experience with integrated policy mix when designing its Integrate Policy Framework (IPF) operationalization, which would then be applied to IMF members in the future.

REGIONAL FINANCIAL COOPERATION

1/ SUSTAINABLE FINANCING IN ASEAN

The BOT, as the co-chair of ASEAN Senior Level Committee (SLC) on Financial Integration, continued to put emphasis on sustainable financing through the SLC Task Force on Sustainable Finance. The priority works included ASEAN Taxonomy for Finance as well as the Learning Roadmap and Curriculum which was developed together with the SEACEN Centre in order to enhance capacity of financial sector regulators in promoting sustainable finance in ASEAN.

In addition, the BOT led the development of ASEAN Green Map which would serve as a common blueprint for ASEAN member states in advancing sustainable finance across the banking, insurance, and capital market sectors, as well as ancillary services. The ASEAN Green Map is expected to support ongoing national efforts for sustainable finance and provide a guide for ASEAN member states with progress in nascent stage.[20]

[20] The South East Asian Central Banks (SEACEN) Research and Training Centre was established in 1982 to serve its member central banks through research work and training programs. The office is located in Malaysia. Since mid-2022, SEACEN has delivered five blocks of "ASEAN Core Curriculum on Climate Risk Resilience / Sustainable Finance" to staff members of central banks. The topics covered (1) Vulnerability Analysis and Data (Block 1); (2) Taxonomy and Disclosure Standards (Block 2); (3) Climate Change and Monetary Policy (Block 3); (4) Regulation and Supervision (Block 4); and (5) Scaling Up Sustainable Finance (Block 5)

2 / PAYMENT CONNECTIVITY

In 2022, the Bank of Thailand (BOT) signed a Memorandum of Understanding (MOU) on Cooperation in Regional Payment Connectivity (RPC) with four central banks in ASEAN, namely Bank Indonesia, Bank Negara Malaysia, Bangko Sentral ng Pilipinas, and Monetary Authority of Singapore on November 14, 2022, during the G20 Leaders' Summit in Bali, Indonesia. This cooperation aimed to enhance efficiency of cross-border payment services to support various modalities of payment linkages and financial innovations.

In addition, under Thailand's APEC chairmanship, the BOT proposed initiative on APEC Payment Connectivity namely APEC Policy Considerations for Developing Cross-border Payments and Remittances which were based on experience of ASEAN countries in cross-border payment linkages. APEC economies can consider deploy the Policy Considerations on the voluntary basis to promote their cross-border payments and remittance. The Policy Considerations were acknowledged by the APEC Finance Ministers' Meeting on October 20, 2022.

3 / HOSTING THE BOT-BIS CONFERENCE

The BOT, in collaboration with the Bank for International Settlements (BIS), hosted the high-level BOT-BIS Conference on "Central Banking Amidst Shifting Ground" on December 2, 2022. The conference was part of the events to mark the 80th anniversary of the BOT that brought together distinguished central bank governors and leaders from the financial industry to exchange views on pressing issues of the modern world.

The conference presented an opportunity to position the BOT as a central bank whose work was anchored in strong principles, data-and research-driven, and relevant in the context of emerging markets. The conference was live streamed, accessible for both Thai and international audiences. The event also offered a forum for key policy discussions and fostered international cooperation in delivering central banks mandate of economic and financial stability in the face of myriads of challenges.

(1) In the short run, bringing down inflation to target to maintain public confidence through policy mix and effective communication was further complicated by geopolitical risks that triggered fragmentation and deglobalization, posing significant challenges to the global economy.

(2) In the long run, central banks needed to tackle challenges posed by:

1) Digitalization - Striking the optimal balance between promoting responsible innovation and managing risks to both payments systems and consumers was a key to facilitating financial sector's leverage on technological advancement in order to promote efficient and inclusive financial services that met customer needs.

2) Climate change - Combating climate change required deep understanding of related risks and judicious responses to their consequences. Central banks also needed to step up their efforts to support swift but smooth transition to sustainable economy, as well as work closely with multilateral development banks and institutional funds to scale up private climate financing.

A high-level BOT-BIS Conference on
"Central Banking Amidst Shifting Ground."

PARTICIPATION IN FREE TRADE AGREEMENT (FTAS)

The BOT, in collaboration with other Thai financial regulators[21], participated in the negotiations to upgrade the ASEAN-Australia-New Zealand Free Trade Area (AANZFTA) in the issues related to financial services, investment, and electronic commerce. The upgrade negotiations, which aimed to modernize the existing agreement in line with recent trends in trade and investment, were substantially concluded in November 2022.

Furthermore, in 2022, the BOT was participating in the FTA negotiations with other trading partners such as the FTA between Thailand and the European Free Trade Association (EFTA), consisting of Switzerland, Norway, Iceland, and Liechtenstein, and the FTA between ASEAN and Canada (ASEAN-Canada Free Trade Agreement: ACAFTA). Both FTA negotiations are expected to be concluded within 2 years.

[21] consists of the Fiscal Policy Office (FPO), the Securities and Exchange Commission (SEC), and the Office of Insurance Commission (OIC)

KNOWLEDGE CREATION AND ACADEMIC NETWORKING

The BOT recognizes the significance of fostering knowledge creation and cultivating robust networks among academia to promote evidence-based policymaking within the BOT and other government agencies. Strengthening networks with the private sector also ensures that research is practical and implementable in real-world business environments. In 2022, the Puey Ungphakorn Institute for Economic Research (PIER), in partnership with various departments within the BOT and its academic network, accomplished the following:

KNOWLEDGE CREATION AND DISSEMINATION

Over the past year, the BOT disseminated more than 100 research articles written by both internal researchers and by those within its academic network. Works were disseminated through various channels, including PIER Discussion Paper (full research papers), PIERspectives (knowledge synthesis), aBRIDGEd (medium-length articles intended for policymakers and general audiences), PIER Blog (short posts), and short op-ed articles featured in popular media such as ThaiPublica Online's "Sethasart Khao Tha", BangkokBizNews's "Jaeng See Bia", and Thairath's "Bang Khun Phrom Chuan Kid".

PIER also organized several Research Media Briefs as a platform for researchers to communicate their work to the general public and inform policy making. This included research projects on (1) farmers' debt and the development of household finance for lower income households; (2) the connection between income and skill levels in the Thai labor market; and (3) Thai inflation through disaggregated price data.

To support the BOT's policymaking and operations, as well as to elevate the knowledge of the public and the Thai academic community in the field of economics, PIER awarded five research grants for research on topics such as financial technology, sustainable finance, and Thailand's labor market.

ORGANIZING NATIONAL-LEVEL ACADEMIC PLATFORMS

PIER organized the annual BOT Symposium under the theme "Strengthening Economic and Financial Foundations for the Next Generation". The Symposium aimed to provide an easy-to-understand discussion accessible to all and was made available to the public through online broadcasting. The discussions centered on the challenges that policymakers faced in a fast-evolving environment, providing practical suggestions and recommendations.

PIER also organized a total of 26 PIER Research Seminars and PIER Economic Exchanges. These platforms provided opportunities for both local and foreign researchers to present their findings, exchange research ideas, and expand the network of economists and researchers.

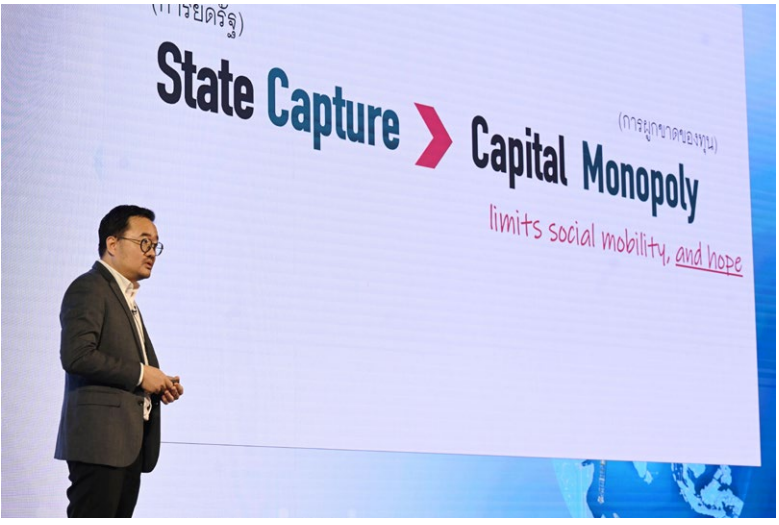
NETWORKING AND CONNECTING TO POLICYMAKERS

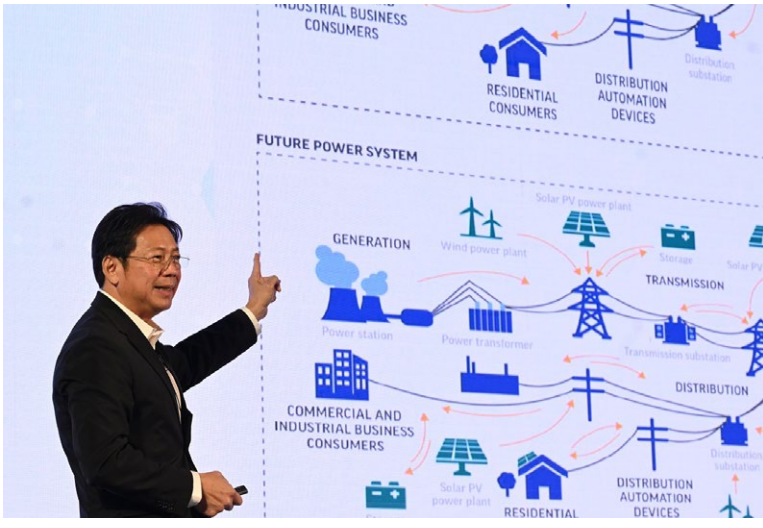
PIER has been continually expanding its research network since its establishment in 2015. Over 440 experts in the fields of academia, economics, and research from a wide range of public and private institutions participated in creating, presenting, and discussing groundbreaking research related to economics and finance. Furthermore, PIER was committed to strengthening its international presence through collaborations with economists from institutions such as Harvard, MIT, and J-PAL Southeast Asia. The year 2022 was particularly exciting for PIER as it partnered for the first time with the Harvard Kennedy School's Evidence for Policy Design program, hosting three research interns with interest in developmental topics. The interns worked alongside the PIER team, resulting in an exciting exchange of ideas and experiences.

In connecting researchers to policymakers and the business sector, PIER focused on three topics that were key to Thailand's economic recovery: digital economy, sustainability, and household finance. This was done through policy forums such as Future Financial Landscape, Thailand's Green Taxonomy Framework, and Household Debt Resolution. PIER also organized discussion forums on topical issues such as Geopolitics and Thailand's Economy.

This year, PIER also started a partnership with the Bank for Agriculture and Agricultural Cooperatives (BAAC) to establish the Working Group on Farmer Debt Resolution, whose aim was to study farmers' debt and explore sustainable solutions for this issue. PIER took on a vital role in connecting policymakers, both within the BOT and external committees responsible for household debt resolution, with experienced researchers to design policy measures that were firmly grounded in evidence-based research. Through field surveys and focus group discussions with farmers from all regions, the Working Group was equipped to gain insight into farmers' income-generating capacity, the challenges they faced in agriculture, as well as a detailed understanding of their debt problems. Furthermore, by observing the farmer loan review and debt management conducted by the BAAC regional officers, the Working Group can better understand the process and exchange ideas on the issue.

This understanding of the challenges faced by both farmers and lenders was crucial to designing effective debt resolution policies that aligned with the Working Group's key objectives, namely: (1) the creation of farmer database and knowledge integration across key stakeholders, (2) solving existing loan problems so that the farmers could meet their repayment obligations, (3) the provision of new loans that were sustainable, accessible, and tailored to farmers' needs, (4) the enhancement of financial literacy and resilience among farmers, and (5) the improvement of productivity in the agricultural sector which would lead to an increase in farmers' income. By focusing on these five key areas, the Working Group was well-positioned to achieve its ultimate goal of promoting the sustainable development of Thailand's agricultural sector while helping farmers to overcome debt-related challenges.





BOT Symposium held continuously and annually at the BOT

The regional field trips talking to the agriculturists to gather information such as root causes, obstacles, or limitations of the current measures

INTERNAL EXCELLENCE STRENGTHENING

HUMAN RESOURCE MANAGEMENT AND ORGANIZATION DEVELOPMENT

Under the rapid changes and uncertainties, the BOT is aware that "BOT's employees" play a key role in driving organization to carry out our organization's missions. Therefore, the BOT formulated strategies and guidelines for human resource management and organizational development, including active recruitment strategy to attract talent, enhancing performance management system, strengthen employee engagement, providing physical and mental health care and improving working process as well as human resource management systems to support for more efficient work, as follows:

RECRUITMENT

To ensure that the organization was ready to cope with current and future challenges, the BOT sought potential employees to drive the organization's vision, mission, and goals. Thus far, the BOT adopted an active recruitment strategy through various channels aiming to ensure that we had the enough talent workforce with future skills (e.g. technology and digital area) to fulfill the organization's demand in achieving "future ready" goal. In addition, the BOT also approached experts and high-experienced candidates from the public and private sectors to obtain more well-rounded staff. The BOT also established networks with various academic institutions; for example, with the Faculty of Engineering, Chulalongkorn University to supply high calibers collaborating to match labor market demand. We also provided scholarships in highly competitive fields such as Artificial Intelligence (AI), ESG or sustainability, and technology law to attract potential employees to support the BOT mission in the future.

HUMAN RESOURCE DEVELOPMENT

The BOT encouraged employees to continuously develop their potential to support career advancement as well as builds a lifelong learning ecosystem to enhance employee capabilities, utilizing a wide range of tools to serve corresponding needs of all groups. In order to broaden knowledge of our staff, various technical schools were set up, such as SMART (financial supervision school for employees), Law School and HR School.

In addition, the BOT also placed importance on the development of soft skills, by focusing on working with a sense of purpose and "change mindset" to help employees adapt to new working conditions and drive the BOT to keep up with rapid changes in the future world.

MANAGEMENT OF PERFORMANCE AND COMPENSATION

The BOT emphasized the collaborations at all levels as one team who shared common goals in alignment with the future missions. The organization's goals will be cascaded to the department and individual staff to drive the mission with one goal and to operate efficiently (One BOT).

In addition, the BOT clearly and fairly managed compensation system to differentiate employee performance in order to incentivize our staff to develop their potential. The performance appraisal was improved by adjusting the distribution of the salary increase rate (Merit Increase: MI) and incentive working rewards (Variable Pay: VP) more effectively, reflecting actual competency and performance of employees.

EMPLOYEE CARE AND WORKING STYLE ADJUSTMENT

The BOT highlights were significance of a positive work environment and organization engagement, particularly after the COVID-19 situation was resolved. The BOT studied new ways of working from other organizations and conducted surveys on how to improve the employee engagement and design new ways of working in the post-Covid world. The current working style was in a hybrid form that offered flexibility in both time and place of work. The departments can manage their work according to the different work contexts by bringing digital system to facilitate and support their work. In addition, the form of leave was changed to be more flexible and in line with the new working situation.

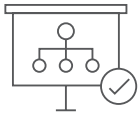
To enhance a good working atmosphere and build engagement in the organization, several activities were undertaken; for example, the participation in the BOT 80th anniversary commemoration, organizing activities to promote a collaborative working environment, and preparing the necessary working environment and providing employee health services, including vaccines and quick access to treatment in the wake of the COVID-19 situation.

On top of that, the BOT was constantly listening to the opinions of executives and employees to review the suitability of way of working and adjust guidelines to increase engagement and improve workplace culture to achieve the BOT's mission and promote the well-being of employees.

HUMAN RESOURCE MANAGEMENT SYSTEM THAT SUPPORTS WORK

The BOT recognized the importance of introducing new tools to facilitate human resource management and organizational development function. Currently, the BOT was processing the implementation of the Oracle Fusion Cloud Human Capital Management (HCM) system to support a full range of human resource management. Also, the Regulatory Impact Assessment (RIA) was adopted as a guideline to improve various work processes, increase efficiency to achieve future missions, and create a good employee experience. In this regard, the employees can discuss with their manager and design individual development goals and career paths using the new platform that was easier and more convenient.

In addition, the new system can consolidate all the human resource information in a single platform, so that it can be used to analyze, manage, and support HR policy formulation, which will lead the BOT to become a data and technology-driven organization, and help retain employees and attract potential outsiders as well as develop the organization for maximum benefits and efficiency.



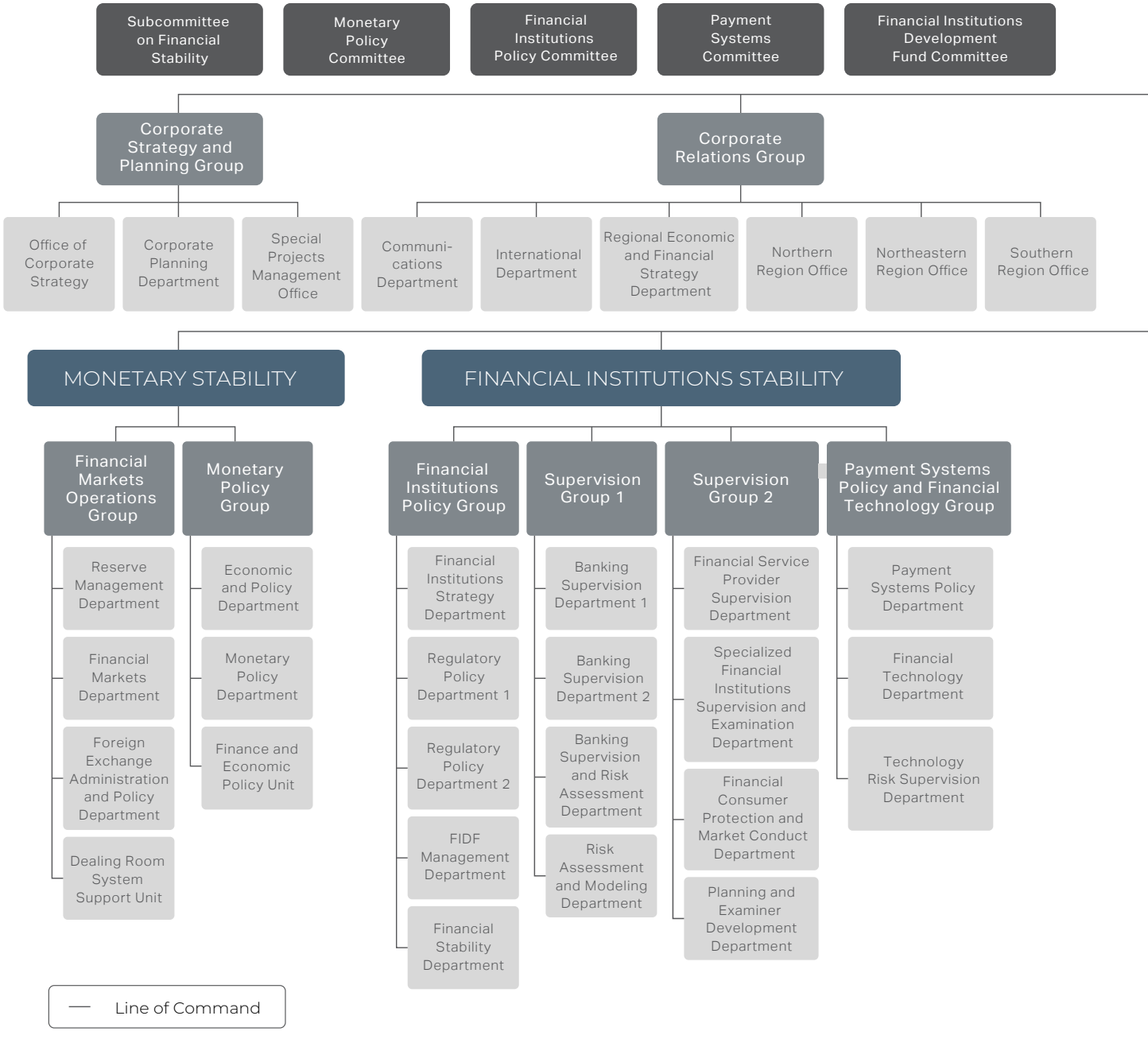
REORGANIZATION AND IMPROVING WORK PROCESSES TO SUPPORT THE FUTURE WORK

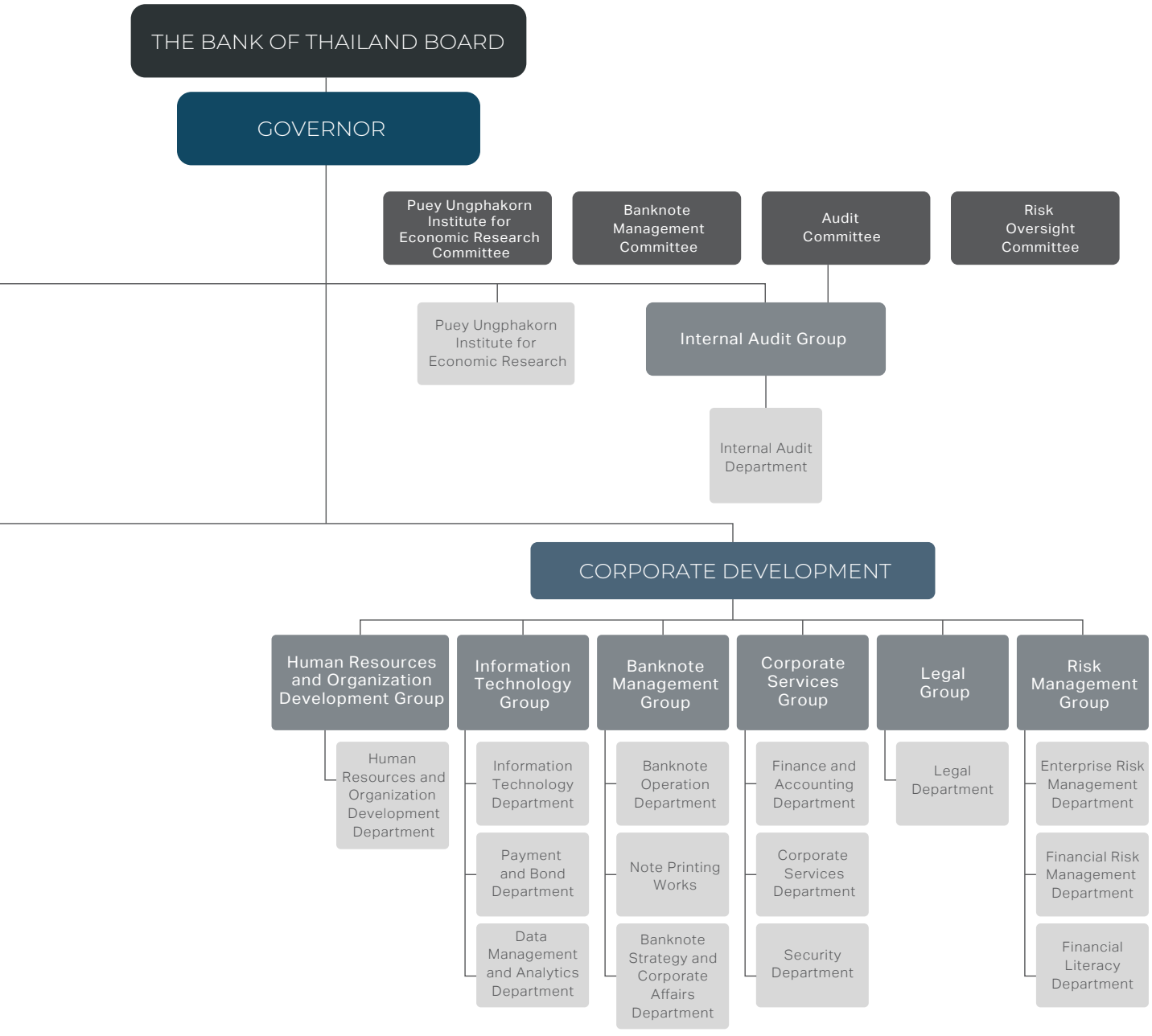
The BOT was in the process of reorganizing and improving work processes to support our critical missions in the future, starting from reorganization in the financial stability to enhance the supervision process and financial and payment landscape developments to keep up with changes in the financial world.

Reorganizing and improving work processes were a part of the preparation program for the readiness to drive future strategies, including designing policies, developing financial systems and payment systems to be more efficient and stand ready for coping with new risks, escalating the supervision process by focusing on activity-based approach and specific risks examination (risk specialist), adjusting the role of Planning and Examiner Development Department to be the strategist and become an R&D unit in fostering the reprocessing, such as feasibility studies for adopting matrix reporting.

In addition, the reorganization also aimed to synergize among divisions and improve work efficiency, such as centralizing procurement function and corporate communications and adjusting the role of the regional offices as stakeholder engagement in serving the function of economic and financial literacy areas together so that it could create value-added on analyzing country's economic status and building financial immunity for people in all regions.

BANK OF THAILAND ORGANIZATION CHART

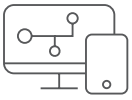




December 31, 2022

INFORMATION TECHNOLOGY MANAGEMENT AND DATA MANAGEMENT

To support the new way of working, the BOT continued to expand the application of data and information technology which became critical factors for driving our mission. We also continued to inculcate a digital mindset and nurture digital skills in our employees so that they can take full advantage of the data and technology that we have provided.



INFORMATION TECHNOLOGY

1 / DEVELOP STANDARDIZED DIGITAL PLATFORMS TO ENHANCE THE BOT'S CAPABILITY TO DRIVE CHALLENGING MISSION

The COVID-19 epidemic enforced a hybrid working style in the BOT as well as other organizations. Devices and collaboration tools were rapidly adopted. The BOT replaced all PCs with laptops, increased the security of our email and messaging systems, and promoted a conference tool for e-meetings. We also leveraged new features of the document management system such as document sharing, co-authoring, and signing with e-signatures. We also changed the communication method within the organization. "MyBOT" was a mobile application that we introduced as a new communication channel which was more easily accessible for remote work. Besides rapid tools adoption, the BOT also emphasized cultivating the digital mindset of our employees to maximize our potential. "Digital Champion Network", "Innovation Lab" and "Crenovator" were examples of platforms that we provided for learning and sharpening digital skills. Professional advice and community support were also available throughout the year.

Modernizing the IT system was one of the critical missions for the BOT to meet new challenges. We acquired more data and enabled deeper analytics to support our move towards a data-driven organization that made policies with evidence-based decision-making. In addition, more than 70 processes were now automated by robots, and we will continue to optimize other processes in the BOT. We have also started transforming existing applications and systems onto standardized HR and ERP platforms.

In 2022, the BOT launched a new platform for internal service management specificallyfor IT and legal services. Next year, we willexpand this platform to centralize the BOT's public services, such as financial consumer protection and license request.

2 / ENHANCE OUR CYBERSECURITY TO BE AS GOOD AS LEADING ORGANIZATIONS

Independent assessment rated the BOT's IT security system as highly secure, robust, and stable, equivalent to leading APAC central banks.

This year, the BOT kept on strengthening its security, especially for cyber threats protection from working offsite. We also regularly participated in cyber security exercises with other organizations, domestic and international, to ensure that we were in line with international standards.

3 / ENHANCING IT SERVICES TO COPE WITH URGENT AND CRITICAL MISSIONS

The COVID-19 recession gave us new roles in servicing and facilitating citizens and businesses. The BOT provided digital services through a website and a chatbot with helpful information related to financial rehabilitation and debt relief measures. Registration for advice and assistance was also available.

The BOT's financial services technologies were also enhanced to support increasing volume of digital transactions. We upgraded BAHTNET to comply with ISO 20022 standards and made it ready for business sector to leverage additional data and linkage. The government bond selling process was revamped with distributed ledger technology (DLT) and has been in operation since mid-2022. Lastly, the BOT transferred the Imaged Cheque Clearing and Archive System (ICAS) operation to the private sector to increase flexibility in the payment system.

ENHANCING DATA MANAGEMENT (DATA MANAGEMENT SYSTEM)

1/ REGULATORY DATA TRANSFORMATION (RDT)

The BOT continued to work on the implementation and development of the Regulatory Data Transformation project. In 2022, the BOT closely collaborated with The Thai Bankers' Association, Association of International Banks and 28 financial institutions. The main objectives were to: (1) drive the overall progress of the project to meet the project's objectives of enhancing the reporting and usage of granular data, both for the BOT to support its targeted policymaking and for financial institutions to enhance their data infrastructure; and (2) to standardize the management of granular data and in-depth database, in order to help facilitate the provision of financial services and the development of risk monitoring and assessment processes. In this regard, the BOT designed a new granular credit data reporting model and process, which was flexible, adaptable to changing regulatory needs, and most compatible with financial institutions' operations.

The RDT credit phase is scheduled to be completed in 2023, delayed slightly from the original timeline, and granular credit data are expected to be fully available for use in 2024.

2/ ECONOMIC DATA TRANSFORMATION (EDT)

The BOT initiated the Economic Data Transformation (EDT) project to enhance the management of the BOT's vast amount of economic and real sector data, by adopting modern data management technology to improve work processes in the form of straight through processing (STP). The new process ensured that data will be more efficient and systematically managed, as well as information risks that may arise were appropriately taken care of, which helped build confidence among data providers in sharing data with the BOT. In addition, the new process will also support the utilization of economic data for analysis, monitoring, and designing economic policies.

The main objectives of EDT comprised three parts: (1) to enhance the data management process; (2) to streamline data management processes throughout the data lifecycle; and (3) to create data standards and linkages at different dimensions. In 2022, the three parts were run concurrently. Data requirement of all related parties was reviewed and analyzed, and was used for the design of economic data model. New data platform for the management of economic data within the BOT was currently being developed. However, due to the vast amount of economic data within the BOT, this process would take some time to enhance and standardize all data to reach the same standard.

USING DATA ANALYTICS AND APPLIED MACHINE LEARNING TO SUPPORT POLICY-MAKING

In 2022, the BOT promoted the utilization of micro-level datasets, new data sources, and advanced analytical techniques to enhance work processes and support policy decisions during the post-COVID-19 recovery. Examples of use cases were as follows:

1/ IMPROVING COMMUNICATION EFFECTIVENESS

To improve its communication effectiveness, the BOT analyzed social media data using natural language processing (NLP) and network analysis techniques to monitor trending issues, news propagation, audience participation, and public sentiment. This helped the BOT to develop communication strategies that were more effective, reached target audience better, and kept up with the rapidly changing contexts.

2/ ENHANCING FX MARKET SURVEILLANCE

The BOT developed tools to support FX market surveillance, using behavioral scores and dashboards based on time series and network analysis techniques. The aim was to monitor market participants' compliance and behavior following the relaxation of FX regulations, which could inform policy directions in the future. Additionally, a suite of FX flow prediction models was developed to help assess the impact of firms' FX transactions on the exchange rate and financial market stability.

3/ USING DATA TECHNOLOGY FOR OPERATIONAL IMPROVEMENT

The BOT employed data technology to enhance a number of work processes and operations, including but not limited to: (1) the automated system for inspecting soft-loan reimbursement documents, using image processing and optical character recognition (OCR) to efficiently process non-machine-readable files (e.g. statements, mortgage agreements, and collateral value guarantees); (2) the relational search tool that allowed policymakers and bank examiners to search the corpus of the BOT's regulations and notifications conveniently for related content; and (3) the NLP-based classification model for automatic categorization of government spending items, which reduced time used for statistical compilation.

4/ USING MICRO-LEVEL DATA FOR ECONOMIC MONITORING AND ASSESSMENT

The BOT promoted the use of micro-level data to enhance the process of economic monitoring and assessment. Examples included: (1) using mobile usage data to track labor mobility; (2) integrating business and environmental datasets to investigate firms' practices and awareness regarding sustainability; and (3) extending the coverage of crop yield forecasting from rice to other major economic crops, in collaboration with the Office of Agricultural Economics.

REGULATORY IMPACT ASSESSMENT (RIA) OR "THINK HOLISTICALLY, RESPONSE PRACTICALLY"

Given the rapidly changing global context and financial system landscape, the BOT has continuously utilized the principles of Regulatory Impact Assessment (RIA) or "Think holistically, Response practically" to ensure that policy formulation, criteria, and operations are evaluated from all angles and respond to the aforementioned challenges. In 2022, the BOT implemented the following measures under the RIA framework:

1/ Reducing or eliminating criteria that were unnecessary or hindrances to operations, thereby reducing duplication of criteria compliance, such as criteria for supervising information technology risk, criteria for authorizing and supervising commercial bank derivative transactions, and criteria for financial institution governance. Additionally, in collaboration with the Ministry of Finance, the BOT organized Debt Mediation Fair to assist debtors in negotiating with creditors online, which was a continuous effort since the COVID-19 pandemic. As a result of listening to feedback from relevant stakeholders, the BOT also decided to maintain the reduced credit card repayment rate and extend the repayment period for digital personal loans to align with the changing circumstances.

2/ A review and refinement of the criteria under the RIA project were being undertaken to support the financial landscape of the future, and to ensure the appropriateness of the current criteria in line with changing contexts. In 2022, the Thai Bankers Association, International Bankers Association, State Financial Institutions Association, Vehicle Registration Loan Businesses Association, and Subprime Lender Representatives were all involved in a task force established by the Thai government to drive the RIA project forward. Their input was sought to enable a deeper understanding of the issues, and to gather data for analysis, resulting in the identification of options for improvement.

Redundant, duplicated, or unnecessary criteria were eliminated, and work processes were made more flexible to adapt to changing circumstances, improving efficiency and competitiveness for both financial institutions and non-bank organizations. Stability in the system was maintained while providing a range of financial services to the public and business sectors at reasonable financial costs that align with higher risk levels. The Thai government will continue to implement this RIA project rigorously and consistently, with the aim of achieving positive outcomes by 2023.

3/ Evaluating the performance of the laws for which the Treasury Department was responsible to ensure compliance with the Act on Legislative Drafting and Evaluation

of Law, B.E. 2562 (2019)[22]. In 2022, the Treasury Department, in collaboration with the Ministry of Finance, evaluated the performance of two laws: 1) the Emergency Decree on The Provision of Financial Assistance for Entrepreneurs Affected by the COVID-19 Pandemic, B.E. 2563 (2020) and 2) the Emergency Decree on the Maintenance of Stability of the Financial System and Economic Security of The Country, B.E. 2563 (2020).

4 / There was an integration of RIA principles into the operations of the organization with increased intensity. This integration included the creation of knowledge and understanding as well as the development of employee awareness through various continuous channels. Additionally, the "Think holistically, Response practically" principle was still upheld, which required answering 7 questions before proposing any policies or measures for internal management. The organization adjusted its components, roles, and meeting frequency of various committees to increase clarity and agility in driving work forward. In addition, work processes, rules, regulations, and policies were made more flexible and efficient, from start to finish, to support new forms of work such as the hybrid workplace.

In terms of budget, the organization allocated funds with discipline, adhering to the principle of "value for money" within a sustainable budget policy framework. There was a continuous and rigorous use of the Value for Money (VfM) evaluation process, prioritizing necessary investments with appropriate options. As a result, the budget for 2023 has decreased by over 290 million baht.

[22] The BOT has scheduled to complete the evaluation of the performance of 10 laws (both Acts and Decrees) under the BOT's supervision by 2025.

FUTURE OF THE BOT

In 2023, the BOT will focus on promoting sustainable and stable growth of the Thai economic and financial system under the rapidly changing financial environment, the transition to the digital economy and sustainable growth. In this regard, the BOT determined key policy directions or OKRs (Objectives and Key Results) in four areas aiming to drive concrete outcomes as follows:

1

SMOOTH TAKEOFF

The BOT will ensure that the economy continues to recover. In this regard, the financial system and financial institutions can operate normally and support effective policy transmission, especially in keeping inflation at the target level without having too much impact on households and business sectors. The BOT will consider adjusting the policy interest rate gradually in line with the economic context, coupled with a comprehensive reduction of broad-based mechanisms and issuing more specific measures to support sustainable growth along with taking care of financial system stability.

2

SUSTAINABLE SOLUTIONS TO HOUSEHOLD DEBT OVERHANG PROBLEMS

The BOT places importance on ensuring that household debt is at an appropriate level. The debtor can repay the debt and afford other essential living expenses. In addition, the household debt must not be a factor dragging people's consumption and not cause households to lack buffers to absorb economic uncertainty that may affect economic recovery in the future. In 2023, the BOT will accelerate the push for service providers in the financial sector to provide responsible lending through the enhanced provision of key information to debtors that is clear, complete, and easy to understand. These help debtors to understand the effects of being in good debt and bad debt throughout the debt cycle. The guidelines are expected to be issued within the first half of 2023.

Going forward, the BOT will push for measures to ensure debtors have access to credit as appropriate so that they can pay back with their living allowance. In addition, the BOT has also supported the establishment of a risk-based pricing mechanism to review the setting of the interest rate ceiling for retail credit, which would allow groups with risks below the ceiling to receive lower interest rates and gives higher-risk groups more access to credit. The document is expected to be issued for public hearing on the above measures and mechanisms in the second half of 2023.

3

FINANCIAL SECTOR SUPPORTS BUSINESS SECTOR'S TRANSITION TOWARDS ENVIRONMENTAL SUSTAINABILITY

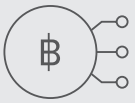
The BOT supports the transition of businesses towards environmental sustainability while creating minimal negative impacts, with appropriate timing and speed in line with the context of Thailand and the readiness of each real sector. The transition in Thailand must not be "too delayed" to accumulate the impacts to an insurmountable scale, nor must it be "too rapid" that the businesses in the economy cannot adjust. The following strategies are critical in the next phase:

(1) Developing the Thailand Taxonomy, which is a classification system of economic activities based on their environmental impacts, in collaboration with the Thailand Taxonomy Board. The first key sector to be completed is the energy and transportation sector, which is expected to be finalized in the first quarter of 2023 and will continue with the next key sectors afterward.

(2) Encouraging financial institutions to adopt the BOT's policy statement on environment and climate change, which is to be disclosed in the first quarter of 2023, as a reference to create an industry handbook that will become the industry standard for the financial sector. From 2023 onwards, financial institutions are expected to gradually integrate environmental dimensions into their decision-making and business operation, including designing financial products and services that support the private sector's transition towards environmentally friendly businesses, such as new loans to support the use of renewable energy or new loans to support electric vehicles.

(3) Promoting accelerated transition of the business sector towards environmental sustainability through a continuous and appropriate incentive structure (incentive), such as low-interest transformation loans for businesses transitioning towards environmentally friendly operations.

(4) Fostering the development of knowledge and skills of financial sector personnel (capacity building) through collaboration with experts from relevant organizations, both domestically and internationally, to develop courses on environmental risk management. In 2023, capacity building will emphasize on incorporating and assessing climate-related risk factors through climate scenario analysis and stress testing practice, as well as on preparing financial institutions to disclose climate-related data in alignment with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations.



4

BUILDING DIGITAL FINANCIAL INFRASTRUCTURE

The BOT will build digital financial infrastructure to create new opportunities and encourage full utilization of innovation and data to improve services to better serve consumers' needs. Also, the innovation shall be designed as responsible innovation that does not pose too much risk to consumers or affect the stability of the financial system. The essential action plans are as follows:

(1) Open Infrastructure, to improve the capability of the financial infrastructure, open the existing infrastructure for widely use, develop new financial infrastructure, and support the transition to digital finance by the following projects.

1.1 Enhancing the governance framework and pricing structure of key payment systems to enable both financial institutions and non-banks to access and compete at fair and reasonable costs for serving customers.

1.2 Expanding the cross-border payment system to be more convenient, cost-efficient, and inclusive. Examples include (1) expanding cross-border payment services via QR code with India, Hong Kong and Laos, as well as linking PromptPay system to Singapore's PayNow and Malaysia's DuitNow system for instant international money transfers, which the latter is expected to launch in 2023. (2) conducting further pilot test of wholesale CBDCs under the mBridge project as a cross-border payment alternative that will increase efficiency and support innovation development. In 2023, the BOT, together with other project participants, will expand the system to include more participants and use cases as well as promote the governance framework of the project.

1.3 Promoting the development of key financial infrastructure; for example, (1) PromptBiz,

a digital financial and payment infrastructure for business capable of accommodating end-to-end trade transactions and automatically linking data on transactions, payments, and taxes. This aims to reduce costs, improve efficiency, and create digital footprints to improve access to funding at reasonable costs for businesses. The project is driven by collaborative efforts among the BOT, TBA and National ITMX and expected to launch within 2023, (2) corporate digital ID and e-Signature services, for corporates and SMEs, to verify their identities, authenticate and sign financial transactions or contracts digitally and conveniently. The services will help reduce the processes and complexity of financial transactions (such as the authorization to open a juristic person account), reduce processing costs (such as document preparation time), especially for SMEs, while maintain the security and legitimacy of the processes. These development efforts are driven in collaboration with other service providers and expected to complete by third quarter of 2023, and (3) retail CBDC for the public and business sectors to facilitate innovation development and explore the possibility of alternative choices with convenience and cost effectiveness. The BOT has conducted limited testing since late 2022 and continuously expanded to verified private sectors untill mid-2023.

(2) Open Data, to further develop mechanisms that allow consumers to share their data stored at one service provider with other service providers by giving consent (data portability). There is a plan to expand the scope of dStatement usage to other service providers besides the financial sector to promote greater financial inclusion and digitized process as well as to reduce transaction costs and time. Additionally, the BOT, in cooperation with other related organization, is considering the approach to drive the open data project with a key focus on data exchange within the financial sector and across industries. This is to promote better access to financial services, especially retail and SMEs finance.

(3) Open Competition and Resiliency, to welcome both existing and new players to create financial innovations and offer services to better fulfill the demands of customers as well as reduce the financial inclusion gap. The operation shall be done in a sustainable manner without stirring up unhealthy competition or exploiting market power to the extent that may have a negative impact on the stability of the financial system, depositors, and customers by:

3.1 introducing a new license, i.e. virtual bank, for players who possess expertise in technologies, data analytics, and digital services, to provide new financial services that meet the needs of customers in each segment at reasonable costs, particularly for the retail and SMEs who are unserved or underserved. In early 2023, the BOT releases the "Virtual Bank Licensing Framework" for public hearing, with the expectation to start accepting applications within 2023. The announcement of designated applicants approved by the Minister of Finance is expected to occur by 2024.

3.2 reviewing regulations that may impede or create regulatory burdens on financial service providers; or hinder their abilities to adapt to the new financial landscape and emerging risks through the Regulatory Impact Assessment (RIA) project. For example, the regulations related to the scope of business operations and investment limitations of financial institutions, allow them to conduct their businesses with flexibility and use their expertise to innovate new financial services. The BOT is currently reviewing relevant regulations which incorporate the feedbacks and recommendations from the financial institutions and expect to issue the regulatory guidelines on a particular policy by the end of 2023.

CHAPTER

4

CORPORATE GOVERNANCE AND RISK MANAGEMENT

Operating Results of the Bank of Thailand Board

Corporate Governance

Enterprise Risk Management

Promulgation or Revision of Laws related to the BOT's Operation

Audit Committee Report For the year 2022

Report of Risk Oversight Committee 2022

The BOT's missions and financial statements

The Bank of Thailand Board

OPERATING RESULTS OF THE BANK OF THAILAND BOARD

The Bank of Thailand Annual Report 2022 serves as the report of the Bank of Thailand Board to the Minister of Finance in accordance with Section 57 paragraph 2 of the Bank of Thailand Act. The report outlines the result of the Bank of Thailand's operations in the previous year along with the Audit Committee's report, the auditor's report, and financial statements as of December 31, 2022. The Bank of Thailand Board is authorized under Section 25 of the Bank of Thailand Act to oversee the Bank of Thailand's overall activities and operations to achieve the objectives set forth in Section 7 of the Bank of Thailand Act with the exception of activities and operations under the purview of the Monetary Policy Committee (MPC), the Financial Institutions Policy Committee (FIPC), and the Payment Systems Committee (PSC).

In 2022, the Bank of Thailand (BOT) carried out its mandate in fostering a stable economic and financial environment, so that the Thai economy may recover inclusively and sustainably, despite facing various challenges from global economic volatilities, geopolitics, and the impact of the COVID-19 pandemic. In this regard, the BOT had gradually begun its policy normalization, including ensuring that the financial institution system remained resilient and stable, able to fulfill its role in allocating capital to businesses and households, as well as providing necessary assistance to vulnerable debtors to foster a smooth takeoff in the economic recovery.

The Bank of Thailand Board (the BOT Board) played a vital role in regulating the BOT's mandate of maintaining Thai financial stability, and supporting inclusive and sustainable economic recovery. Moreover, the Board also must ensure that the BOT prepared to carry out its central bank mandates in light of changing financial landscape and being prepared to adjust to the new financial landscape, along with elevating internal risk management and good governance in light of the rapidly evolving context.

OPERATIONS TO SUPPORT THE ECONOMIC RECOVERY AND ACCOMMODATE THE CHANGE OF FINANCIAL LANDSCAPE

The BOT Board along with the 3 policy committees consisting of the Monetary Policy Committee (MPC), the Financial Institutions Policy Committee (FIPC), and the Payment Systems Committee (PSC) along with the Bank of Thailand Audit Committee and the Risk Oversight Committee (ROC) still prioritized the continued assistance to households and businesses. This was to help foster economic recovery from the severe impacts of COVID-19, preserve the financial system and macroeconomic stability, as well as build public trust. Furthermore, all the Committees still supported enhancing organizational and internal efficiency, which would serve as an important foundation for the BOT's policy success, in line with future changes in the financial landscape.

In light of the economic recovery, the BOT gradually normalized its policies, while at the same time still prioritizing vulnerable debtors whose income had yet to fully recover. The BOT Board promoted the issuance of specific and targeted measures to continuously help debtors. These measures included (1) targeted measures that are still in place including the Long-term Debt Restructuring Measure issued debt on September 3, 2021, Special Loan Measure, and Asset Warehousing programs, and (2) additional measures for vulnerable debtors, particularly those without collateral, who were impacted by a decline in income.

Under the rapidly evolving financial landscape, particularly digital and environmental challenges, the BOT Board played an important part in expanding the responsibilities of the BOT to accommodate the digital economy. The Board considered the balance between fostering innovation and comprehensive risk management, as well as more flexible regulation so that the private and public sectors can smoothly transition to an environmentally friendly digital economy.

INCREASING EFFICIENCY IN OFFICIAL RESERVES MANAGEMENT

In the management of official reserves, within the context of a rapidly changing and volatile global economy, the BOT Board emphasized principles of discretion, flexibility, and concision. The BOT Board

reviewed the official reserves risk management framework to enhance the efficiency of long-term investment strategies. Furthermore, the BOT also increased mechanisms to address short-term market volatilities. In addition, the BOT Board made adjustments to the financial risk management governance structure so that the BOT's financial risk management process was up to date and more efficient. The BOT Board utilized a risk-based assessment approach to allocate responsibilities, which was in line with the practices of leading central banks and financial institutions.

PROMOTING INTERNATIONAL COOPERATION

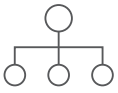
The BOT Board was aware of the importance of carrying out policy and cooperation with international organizations to maintain Thailand's roles and involvement in the cooperation to resolve the pandemic and support global economic development, as well as promoting cross border payments. In this regard, the BOT planned to expand the number of commercial banks abroad to promote local currency usage as well as expand connectivity to other countries, both within and outside of ASEAN. The BOT is in the process of connecting Thailand's QR payment system with Hong Kong and India, as well as international transfers with Malaysia under the program PromptPay-DuitNow.

ORGANIZATIONAL RISK MANAGEMENT

Under the context of an uncertain economic and financial environment, the BOT Board emphasized active risk management by monitoring and assessing various risks such as (1) risks from the implementation of the BOT's policies and new financial measures (2) risks of severe cyber attacks on the BOT (3) organizational and personnel risks (4) risks from the BOT's roles which become more complex. The BOT Board supported the BOT to carry out its human resources plans by specified targets, to foster tangible results both in terms of increasing staff and executives' efficiency to address future challenges, particularly with regard to the financial landscape. Furthermore, the BOT Board also aimed to promote the BOT to become a more agile organization and encourage an environment and organizational culture that supported cooperation.

PROMOTING ORGANIZATIONAL GOOD GOVERNANCE

The BOT Board prioritized the promotion of organizational good governance, which was the key factor for creating credibility and trust from the public. The Board had reviewed and amended the BOT's Code of Conduct and Ethics to cover the Board's performance as well.



ORGANIZATIONAL RESTRUCTURING

The BOT Board approved the BOT's organizational restructure by combining the Monetary Policy Groups' regional missions and the Corporate Services Group together, as well as adjusting their roles, whereby previously the primarily focus was on the economy towards economic and financial connectivity as well. In particular, building knowledge and understanding of the regional financial systems to support more targeted financial policies such as debt restructuring, financial literacy, financial inclusion, as well as communication and fostering understanding with regional allies, both in terms of businesses and the public sector.

CORPORATE GOVERNANCE

The BOT is mandated as the national central bank, under the oversight of the BOT Board, supervises overall activities covering planning, budgeting, and asset management, with the objective of maintaining monetary, financial institutions system and payment system stabilities. In order to fulfill this objective, the Monetary Policy Committee (MPC), the Financial Institutions Policy Committee (FIPC), and the Payment System Committee (PSC) were set up and assigned with the function of independently formulate policies. These three Committees meet the BOT Board annually as well as hold joint meetings among themselves to keep up with relevant developments and set direction and collaborate on cross-cutting related issues relevant to current situations. Furthermore, the Bank of Thailand's Audit Committee is responsible for monitoring and overseeing the operations of the BOT to ensure good governance principles, effective internal control systems, and efficient internal audit, as stipulated in the Bank of Thailand Act B.E. 2485 (as amended by the 6th revision in B.E. 2560).

In addition, the BOT Board has appointed the Risk Oversight Committee (ROC) and Corporate Governance Committee (CGC). The ROC is mandated to advise on the Bank's overall risk management framework and risk management process as well as the adequacy of the Bank's risk control systems in response to the changing external environment. In 2022, The BOT prepared its readiness for new challenges, especially on the new financial landscapes, as well as, increasing concerns on cyber threats and geopolitical risk. Therefore, the ROC recognized the importance of the enterprise risk management such as policy implementation risk, information technology risk, and human resource and organization development risk. Additionally, the ROC emphasized restructuring the responsibility of risk management as considered on the basis of the appropriate risk levels, to ensure the risk management process was flexible and efficient in carrying out the BOT's mandate.

Corporate Governance Committees (CGC) oversee corporate governance issues under the BOT Board purview to institute good corporate governance policies and practices within the BOT. In 2022, CGC revised the BOT's Code of Conduct (regulations related to ethics and prevention of conflicts of interest) for the BOT Board and the policy boards, in order to ensure compliance with the law and changing environment. The CGC also endorsed a good governance framework in conformity with Good Governance in the Public Sector of the International Federation of Accountants (IFAC) and Chartered Institute of Public Finance and Accountancy (CIPFA) to improve better governance of the BOT.

In addition, The BOT enhanced its corporate governance by participating in the Integrity and Transparency Assessment (ITA) Program, held by the National Anti-Corruption Commission (NACC). The forum provided opportunity for stakeholders, both inside and outside the BOT, to assess the integrity and transparency of the BOT's operations. A report of the assessment is available for the public on the BOT website. In the 2022 assessment, the BOT ranked level A for four consecutive years.

ENTERPRISE RISK MANAGEMENT

ENTERPRISE RISK MANAGEMENT

The BOT has continuously been implementing various measures and policies to secure a sustainable economic recovery after the COVID-19 pandemic. In addition, the BOT promoted the development of innovation in the financial system with concise operational procedures and risk management in accordance with the principles of good governance. The compliance with risk management framework in formulating new policies and measures will be done by taking into consideration relevant principles, roles, responsibilities, and legal frameworks of the BOT, listening to stakeholders' opinions, considering alternatives, assessing possible impacts, evaluating the readiness of the BOT's personnel, operating system, and communicating properly to each target audience, as well as continuously assessing and monitoring all relevant risks. By doing so, the BOT wished to achieve the successful and efficient implementation of such policies and measures.

Furthermore, the BOT has been using data from various sources to carry out our mission. The BOT, therefore, gave precedence to strict data supervision, including personal data, by enhancing the monitoring and control of risks arising from data management as our enterprise risk, and would regularly report to the relevant committees.

FINANCIAL RISK MANAGEMENT

The BOT has responsibilities in maintaining the economic and financial system stability as well as managing international reserves which incurred a financial risk of international reserves and a risk affecting the BOT's financial statements. The BOT, therefore, had in place the rigorous financial risk management framework and process that were up to the international standard and good governance.

In 2022, global financial markets were still in a high uncertainty environment as a result of inflationary pressures driving major central banks to implement policy normalization as well as heightened geopolitical risk. The BOT, therefore, strengthened the risk management framework to address new forms of risk going forward. The enhancement of risk management included adjusting risk control to better manage short-term volatility while preserving international reserve value in the long term, emphasizing on a risk diversification policy to reduce the concentration risk of international reserves, and improving risk governance structure to ensure the effectiveness of risk management.

1 / KEY RISKS AFFECTING THE FINANCIAL STATEMENTS OF THE BOT

In its role as the central bank, the BOT has a responsibility in implementing monetary policies and maintaining the stability of the Thai baht to give confidence to the public that the economic and financial stability of the country would be maintained. Carrying out these duties incurred key and unavoidable risks inherent in the BOT's financial statements, namely foreign exchange rate and interest rate risks.

Foreign exchange rate risk to the financial statements of the BOT arose as a result of the BOT holding for a large part of its balance sheet financial assets that were denominated in foreign currencies while carrying liabilities predominantly denominated in Thai baht. Interest rate risk existed when the interest expense incurred from the conduct of monetary policy was different from the income the BOT received from investment in foreign markets.

2 / FINANCIAL RISK MANAGEMENT OF THE INTERNATIONAL RESERVES

Management of international reserves took into consideration not only the safety, liquidity, and return of the investment but also the risks in the investment. The objectives of the international reserve management are as follows:

1) To have an international reserve with adequate stability and liquidity for the implementation of monetary and exchange rate policy.

2) To maintain the value of the international reserve and prepare liquidity in foreign currency to be used as buffers for the balance of payment deficit in both normal and crisis conditions.

3) To maintain the global purchasing power of the international reserves.

4) To be the backing of the banknotes issued as specified by the Currency Act.

The BOT had in place a risk management framework and guidelines, an important part that contributed to the international reserve management achieving its objectives, to address key financial risks namely market, credit, and liquidity risks. These framework and guidelines were consistently reviewed to ensure that the management of the international reserve at the BOT was up to the international standard and regarded as comparable to those of other central banks.

Having in place the risk management framework and guidelines was one of the key contributors that helped reduce the negative impact of potential losses to the value of the international reserve as well as its financial statements. The BOT, by the Financial Risk Management Department (FRMD), engaged in the monitoring of new developments in financial markets and instruments as well as changes in regulations in invested markets. The purpose of these engagements was to ensure that the relevant developments or changes continued to be applied to risk management and compliance work at the BOT.

OPERATIONAL RISK MANAGEMENT

Operational risk management covers risks arising from processes, people, technology, and external factors with its objective to ensure that there is effective risk management. The BOT also integrated the work processes and information exchange among the 3 Lines of Defense, in accordance with the Governance, Risk, and Compliance (GRC) principles, and utilized tools to manage enterprise and operational risks, as follows:

1 / CONTROL SELF-ASSESSMENT (CSA)

The BOT required all departments to conduct a CSA at least once a year to identify and assess key risks associated with their strategic and BAU operations, as well as issues that must be assessed on their compliance with government-issued requirements and the BOT's internal rules. The assessments were further examined, together with an evaluation of the adequacy of existing internal controls. The findings were then used to develop risk mitigation measures to help improve the efficiency and effectiveness of work processes and internal controls.

The BOT's risk assessment is in accordance with the Rule of the Ministry of Finance on Standards and Internal Control Practice for Government Agency B.E. 2561 (2018)

2 / OPERATIONAL RISK INCIDENT REPORTING

The BOT required any department incurring a loss incident and the directly responsible departments to report such loss incidents and a near-miss events through the in-house Risk Management System (RMS). The RMS served as a database for risk events, which was used for analyzing the causes of risks and identifying appropriate measures to manage and prevent future incidents.

3 / KEY RISK INDICATORS (KRIS)

KRIs are tools in monitoring and assessing the BOT's risk exposures, covering enterprise-wide risks and other material risks. The monitoring of key risks (Risk Dashboard) and any progress in their risk management work plans were reported to the RMC (Risk Management Committee) and ROC (Risk Oversight Committee) on a quarterly basis, to ensure that such risks remained within an acceptable level, and to prescribe corrective or preventive measures accordingly.

4 / BUSINESS CONTINUITY MANAGEMENT: BCM

The BOT has constantly raised its business continuity management capabilities following international standards. To ensure its readiness for various distress scenarios, the BOT was certified under the international standard ISO 22301: 2019 Business Continuity Management Systems for the critical payment systems, i.e., the BAHTNET, by which the BOT is both the operator and internal user. Noting that, in July 2022, the BOT successfully transferred the Imaged Cheque Clearing and Archive System (ICAS) operations to an external agency. In preparation for the transfer, associated risks were identified, and various risk management measures were implemented.

The BOT continued to activate its business continuity plan in response to the COVID-19 pandemic. The BOT closely monitored the situations, set up response processes, and allocated budgets and resources, especially IT resources.

Additionally, the BOT established an alternative site within the premise for critical operations and implemented measures to provide greater flexibility should off-site operations become necessary. The BOT also provided vaccines for all employees, their families, and outsourced staff, and supplied COVID-19 Antigen test kits for employees working onsite. As the situation eased, the BOT adjusted its measures accordingly and prepared the workplace environment following safe workplace guidelines, regulatory measures, and recommendations issued by the Ministry of Public Health. As a result, all critical operations operated smoothly without interruption, and more importantly, all the BOT employees were safe from any severe COVID-19 infection.

5 / INFORMATION TECHNOLOGY RISK MANAGEMENT

The BOT has continued to adhere to its IT risk management framework, to identify, analyze, and monitor key IT risks, and to ensure proper and timely compliance with IT laws, regulations, and standards. To that end, the IT Risk Management Sub-committee is tasked with reviewing the BOT's IT risk management policy framework and guidelines, as well as approving and monitoring IT risk-related practices under the framework prescribed by the Risk Management Committee.

In response to the current situation as well as the BOT's increasing adoption of new technologies i.e. Cloud Computing Services, increasing interconnections with other organizations, and the COVID-19 pandemic that changes the way of work requiring employees to be able to work remotely and use personal devices, as well as cyber

threats that have become more severe, complex, and unpredictable; in 2022, the BOT started to study and implement Zero Trust Framework, which was a new cybersecurity model that leading organizations have started the adoption.

In addition, the BOT issued the Application Programming Interface (API) Standard to ensure the system connectivity with external counterparts that the proper risk management, security, and international standard alliance were preserved according to risk levels. The BOT has also continuously enhanced its capabilities in cyber resilience and in detecting cyber threats, raising cyber risk awareness and conducting cyber security incident response exercises both at operational and executive levels, as well as expanding collaborative networks with other relevant agencies to exchange cyber threat intelligence.

Additionally, the BOT has been certified and continuously ensured compliance with Information Security Standard (ISO/IEC 27001:2013), for the payment systems operated by the BOT (BAHTNET and ICAS), as well as for the operations of the BOT's internal units that are BAHTNET members. Also, the BOT continuously ensured compliance to relevant BOT's IT risk management guidelines; for example, Third Party IT Risk Management Implementation Guidelines and Guidelines on Implementing Technologies.

6 / COMPLIANCE RISK MANAGEMENT

To assess and monitor compliance risk, the BOT developed a database on BOT-related legislations and created a proper monitoring mechanism by establishing the Data Protection Risk Management Framework as well as relevant tools such as Data Leak Prevention (DLP) system to ensure effective personal data protection in compliance with Thailand's Personal Data Protection Act B.E. 2562 (2019) and the international standard.

PROMULGATION OR REVISION OF LAWS RELATED TO THE BOT'S OPERATION

PROMULGATION OR REVISION OF LAWS RELATED TO THE BOT'S OPERATION

In recent periods, there have been business operators who acted as credit intermediaries. Credit intermediaries have been a new alternative for people looking for capital, especially small and medium enterprises. Credit intermediaries may provide services in the forms of Peer-to-Peer Lending or Debt Crowdfunding. However, according to the Credit Information Business Operation Act, they were unable to be members of credit information companies. This limitation led to significant effects as follows:

EFFECT AT AN INDIVIDUAL LEVEL

People, looking for capital but not having the qualification to apply for credit from financial institutions or Non-banks, had difficulty in accessing sources of funds, including applying for credit from credit intermediaries, especially when these credit providers had limitations in obtaining sufficient credit information to determine borrowers' credit risk profile. As a result, it increased the costs of running their businesses. Moreover, if these people borrowed money from informal debt, they might lose their competitive advantages.

EFFECT ON THE EFFICIENCY OF DOMESTIC CREDIT-GRANTING SYSTEM

Credit intermediaries were unable to be members of credit information companies. Thus, the history of granting credit and payment of credit was not stored in a credit information system. Consequently, creditgranting businesses, such as financial institutions and credit intermediaries, did not have sufficient credit information about the person applying for credit. It increased the risk of granting credit. It also impacted the efficiency of the domestic credit-granting system.

To tackle this problem, a revision of Credit Information Business Operation Act was proposed by the BOT to allow credit intermediaries to be members of credit information companies. In doing this, a domestic credit-granting system would be more efficient. The Amended credit information business operation act was published in the Government Gazette on July 18, 2022, and came into force on the date following the date of its publication in the Government Gazette onwards.

AUDIT COMMITTEE REPORT FOR THE YEAR 2022

The Bank of Thailand Audit Committee (the AC) comprises three non-executive members of the Bank of Thailand Board (the Board) and two external experts. The Assistant Governor of the Internal Audit Group serves as secretary of the AC.

In 2022, the AC held 16 meetings. The meeting attendance of the AC was as follows.

1. MR. MANAS JAMVEHA
   CHAIRMAN 16/16

2. MR. PAKORN NILPRAPUNT
   MEMBER 16/16

3. MR. SUBHAK SIWARAKSA
   MEMBER 15/16

4. MR. CHANCHAI BOONRITCHAISRI
   MEMBER 6/6

   MR. SORASIT SOONTORNKES
   MEMBER 10/10

5. MRS. PIMPANA SRISAWADI
   MEMBER 16/16

Mr. Chanchai Boonritchaisri has been appointed as an AC member since October 4, 2022, in replacement of Mr. Sorasit Soontornkes whose term ended.

The AC performs its roles and responsibilities as stipulated in the Audit Committee Charter as well as additional assignments from the Board to assist the Board in overseeing the Bank of Thailand (BOT) and its agencies. The AC seeks to help ensure that the BOT carries out its tasks in accordance with good governance principles, appropriate risk management and effective internal control. The AC also ensures that the internal auditors fulfill their responsibilities with independence and objectivity to achieve the efficiency and effectiveness of internal audit activities.

In 2022, COVID-19 pandemic situation gradually improved and returned to normal. Thailand's economy continued to recover and the BOT played an important role in overseeing a stable recovery and development that responded to rapid changes. The AC, hence, provided oversight of internal audit activities that support the BOT's key missions and foundation for long-term sustainability. The scope of auditing included the engagements related to the supervision of financial institutions during COVID-19 crisis period, financial consumer protection, cyber security, organizational communication, as well as master plan of human resource management and development. These audit scopes aimed to support the achievement of the BOT's strategic objectives and mission.

KEY PERFORMANCES OF THE AC IN 2022 ARE SUMMARIZED AS FOLLOWS.

1. REVIEW OF FINANCIAL STATEMENTS

The AC reviewed the accounting policy and the financial statements of the BOT, the Currency Reserve and the Banknote Operations. The AC viewed that the process of accounting and financial statements preparation was done under prudent and effective internal control. The financial statements fairly presented the financial condition and performances in all material aspects, and were reliable by observing Thai Financial Reporting Standards, appropriate accounting practices for central banks, as well as relevant regulations. Information disclosure was also adequate, appropriate, and useful to users.

2. SUPERVISION AND IMPROVEMENT OF INTERNAL AUDIT

The AC reviewed audit reports submitted according to the 2022 audit plan and was of the view that the internal audit engagements were effective, beneficial, and able to add value to the BOT. Examples of which include the engagements in supervision of financial institutions during COVID-19 crisis period, financial consumer protection, foreign exchange modeling, information technology policy, cyber security for BAHTNET service, banknote management strategy, work from home and data confidentiality, organizational communication, master plan of human resource management and development, as well as governance of high-value project of the Southern Office renovation.

The AC emphasized on both the performance audit to identify opportunities to improve the efficiency and effectiveness of the organization's operation, and the compliance audit which require regular monitoring to adhere to applicable laws and regulations. In addition, the AC focused on the utilization of databases and technology to enhance the efficiency and effectiveness of internal audit activities. The AC also stressed the importance of skill development of the internal audit resources to keep abreast of and be properly equipped for the ever-increasing challenges of technology disruption as well as the new financial and economic landscape.

3. COORDINATION ON RISK MANAGEMENT

The AC and the Risk Oversight Committee held two joint meetings to exchange views on the enterprise risks, risk management, 2022 audit engagement results, and the 2023 audit plan. The joint committee agreed that data risk had become increasingly important and they should be incorporated in the 2023 audit plan. The two committees also exchanged relevant information regularly to ensure that internal audit activities are appropriate and contribute to effective control of the key risks of the BOT in a timely manner.

4. MEETINGS WITH THE BOT GOVERNOR

The AC met with the BOT Governor and the Deputy Governors twice to discuss the issues on internal audit approach, 2022 audit engagement results, and the 2023 audit plan that is aligned with the BOT's enterprise risks and strategic plan. This is to ensure that the audit activities continue to be relevant, effective, and able to support and add value to the BOT.

5. MEETINGS WITH THE EXTERNAL AUDITOR

The AC met with the external auditor (State Audit Office of the Kingdom of Thailand: SAO) twice without the presence of the BOT management, to exchange views on the financial statements of the BOT, the Currency Reserve, and the Banknote Operations, as well as the compliance audit.

6. REPORTING OF THE AC WORK

The AC prepared and submitted its work reports to the Board and the Ministry of Finance on a quarterly basis, in accordance with the provisions of Section 55 of the Bank of Thailand Act B.E. 2485, as amended by the Bank of Thailand Act (No. 4) B.E. 2551.

SUMMARY OF THE AC'S OPINION

In an effort to fulfill its responsibilities based on scope and authority as per the Audit Committee Charter, the AC endeavored to do its best in applying the knowledge, ability, experience, and skills of individual committee member towards conferring independent and impartial opinions and recommendations to the Board, the BOT management and officers, while taking into account the interests of all stakeholders. The AC has received good cooperation from both the BOT management and the audited departments. As such, the audit recommendations had been discussed and implemented.

Overall, the AC concluded that the Board, the Policy Committees, the BOT management and officers were committed to perform their duties, in order to achieve the BOT's objectives. Thus far, the BOT has been able to implement the measures to maintain economic and financial stability. Furthermore, the BOT operated under good governance, prudent risk management including fraud risk management, effective internal and financial control, and compliance to foster effectiveness, efficiency, transparency, and credibility of the organization. The audit results were beneficial and in accordance with the best principles, ensuring that the BOT's operational processes efficiently accomplish the mission and strategic plans set forth.

Mr. Manas Jamveha
Chairman of the Audit Committee
Bank of Thailand

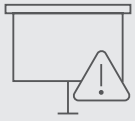
REPORT OF RISK OVERSIGHT COMMITTEE 2022

Risk Oversight Committee consists of five members; at least three are non-executive directors of the BOT Board and two external experts, with the Assistant Governor of Risk Management Group as secretary. In 2022, The present ROC members were:

MR. SUBHAK SIWARAKSA	CHAIRMAN
MR. RAPEE SUCHARITAKUL	MEMBER
MR. NONTIGORN KANCHANACHITRA	MEMBER
MR. ACHPORN CHARUCHINDA	MEMBER
MR. SAK SEGKHOONTHOD	MEMBER
MISS DARANEE SAEJU	SECRETARY

In 2022, even though the COVID-19 outbreak seemed to be better, BOT was still confronted with many challenges, such as uncertainty of the global economy and geopolitical tension, including preparation for the new environment. BOT managed the tasks especially on its readiness for the new financial landscape, to maintain the public trust and deal with the stakeholders' expectation of the BOT policies and supervision. The ROC emphasized on managing significant risks and preparing the readiness of the organization in responding to internal and external risks. Through implementing these measures, the BOTwas able to better operate effectively under new environment and new challenges.

Last year the ROC held 11 meetings and 2 joint-meetings with Audit Committee to discuss the BOT risk management framework and directions including the 2022 audit plan. The ROC also held the meeting with the BOT Executives for twice a year to exchange challenging views and risk management. Every three months, ROC reports its contribution to the BOT Board. The summary of key contributions in 2022 concluded as follows:



1. ENTERPRISE RISK ASSESSMENT:

The ROC reviewed the 2022 Enterprise Risk Assessment and also considered 2023 enterprise risks covering significant risks that must be handled in order to cope with rapid changing environment, which includes more complex role for central banking, increasing cyber threats, clearer public communication, importing technology and data for working process, preparing readiness of its personnel for the new ecosystem, as well as managing those enterprise risks on the appropriate level.

2. FINANCIAL RISK: THE ROC SERVED THE FUNCTION OF FINANCIAL RISK MANAGEMENT:

• reviewing and revising the structure of risk management of foreign reserves, which considers responsibilities on the basis of risk levels, enhancing BOT risk management to be more flexible and efficient, while not affecting to risk levels given by The BOT Board.

• reviewing the investment criteria of Institutional Benchmark, which is flexible for short-term volatility and resilient for long-term investment.

• continuously monitoring financial risk management of foreign reserves under the increasing geopolitical risks as well as concerning any ongoing conflicts for the impact on foreign reserve management.

The ROC additionally recommended that the BOT should review risk management strategies and reduced risks to be consistent with any changes in geopolitical risk.

3. INFORMATION TECHNOLOGY RISK:

The ROC concerned about the severity, complexity, and uncertainty of cyber threats from the usage of information technology within the BOT including an increasing usage of third party services. In

consequence, The ROC monitored several issues as follows: the upgrade of efficiency of cyber attack protection, and improvement of the ability to constantly detect cyber threats and significant incidents. The ROC recommended on information technology risk management framework in conformity with international standards and practices, and ensured the BOT's operations to comply with such framework.

4. DATA RISK:

The ROC generally monitored data risk management of the BOT and the compliance under the Personal Data Protection Act B.E 2562 (PDPA). The ROC found that the BOT has personal data management processes as provided by PDPA and guidelines on remedy of damages, in line with the law and international standards. The ROC recommended the BOT to self-assess the adequacy of controlling measures, and ensure that the appropriate risk management are imposed, because the BOT utilized a huge amount of critical data in daily operation. In addition, The ROC encouraged the BOT staffs to recognize data risks that it may affect to the creditability of the BOT.

5. THE ROC MONITORED RISK MANAGEMENT UNDER THE EXISTING FRAMEWORK

to respond to changing situations, using a variety of mechanisms such as Control Self-Assessment (CSA), Key Risk Indicators and risk dashboard for risk monitoring, incident report for risk reporting, as well as the Business Continuity Plan (BCP) in accordance with ISO 22301:2019.

In conclusion, the ROC carried out its mandate within the scope, functions, and responsibility in the Charter. To oversee overall risks of the organization under the mandate of the BOT Board, the ROC concluded that the BOT conducted risk management effectively, appropriately, and consistent with corporate governance, and was able to discharge its mission under a rapidly and continually changing environment.

THE BOT'S MISSIONS AND FINANCIAL STATEMENTS

As a central bank, the Bank of Thailand (BOT)'s missions differ from that of business entities. Therefore, the central bank's financial statements are unique and distinct from other businesses, and so interpreting the BOT's should take into account its missions as a central bank.

MISSIONS OF THE CENTRAL BANK

The BOT's missions cover the following two key aspects:

1 / MAINTAINING ECONOMIC STABILITY

Section 7 of the Bank of Thailand Act B.E. 2485 (1942), amended in B.E. 2561 (2018), stipulates that the central bank has a role to "...maintain monetary stability, financial institution system stability, and payment systems stability", in other words, the overall economic and financial stability.

The BOT's mission is similar to that of other central banks, which is to maintain both internal and external economic stability. "Internal stability" refers to preserving the value of the Thai baht and Thai assets to prevent them from being depreciated by inflation, and also preventing economic bubbles or vulnerabilities in the financial system that could lead to a future financial crisis. "External stability" refers to the monitoring and oversight of the movements in the value of the Thai baht, to ensure that it is in line with economic fundamentals and not excessively volatile, so as to maintain Thailand's purchasing power in the global economy and keep foreign debt levels low, as well as to ensure sufficient levels of international reserves to cushion the impact from volatilities in the global financial and capital markets.

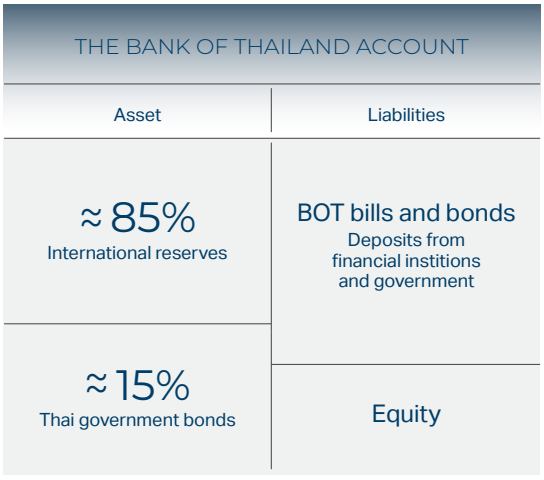
2 / PRINTING AND ISSUING BANKNOTES FOR CIRCULATION IN THE ECONOMY

Section 14 of the Currency Act B.E. 2501 (1958), amended in B.E. 2545 (2002), stipulated that "The BOT has power to print, manage, and issue banknotes..." In ensuring that the Thai baht and Thai banknotes would be widely accepted, Thailand must implement credible monetary and macroeconomic policies, and also hold credible assets to back up the value of the Thai baht. On this, Section 26 of the Currency Act stipulates that "For the purpose of maintaining the stability of the currency, the BOT shall maintain a currency reserve, hereinafter to be called the Currency Reserve". In printing and issuing banknotes in circulation, the BOT has to hold foreign assets of equal value to the newly-issued banknotes, which could be gold, foreign assets, or domestic assets, but are currently all foreign assets.

These two key missions are interconnected and are fundamental factors for robust and stable economic growth.

THE BANK OF THAILAND ACCOUNT AND THE CURRENCY RESERVE ACCOUNT

To deliver on the above two key aspects of the BOT's missions, the law requires the BOT to segregate its transactions into the following two accounts:



1 / THE BANK OF THAILAND ACCOUNT

The Bank of Thailand Account is the account associated with the mission to safeguard economic stability. Looking at the simplified Bank of Thailand Account, the asset side consists mostly of international reserves in foreign currencies, which account for approximately 85 percent of total assets, with the remainder consisting mostly of Thai government bonds. Meanwhile, the liabilities largely consist of BOT bills and bonds from monetary policy operations to safeguard economic stability, and deposits from financial institutions and the government. All such liabilities are denominated in Thai baht.

2 / THE CURRENCY RESERVE ACCOUNT

The Currency Reserve Account is the account associated with the mission to print and issue banknotes for circulation in the economy. The asset side consists entirely of international reserves, which are held to back up the issuance of banknotes, as required by law. Meanwhile, the liability side consists of Thai baht banknotes in circulation. In other terms, the banknotes that the public uses for spending in the economy are considered the central bank's liabilities.

DISTINCTIVE CHARACTERISTICS OF THE BOT'S FINANCIAL STATEMENTS

1 / THE ASSETS AND LIABILITIES HAVE A CURRENCY MISMATCH

The central bank's assets are mostly foreign assets or international reserves, whereas the liabilities are mostly denominated in the country's local currency (Thai baht in the BOT's case), resulting in a currency mismatch between the central bank's assets and liabilities. Therefore, in preparing the BOT's financial statements, the foreign assets need to be revalued to Thai baht at every year-end. Such revaluation is done to hypothetically indicate how much Thai baht would be if all the foreign assets were liquidated. As a result, the profit or loss figures as shown in the financial statements are mostly a "valuation gain/loss".

Having a revaluation every year-end means that changes in the foreign exchange rates and asset prices could significantly influence the figures in the financial statements, especially when there is a high proportion of foreign assets. To illustrate, if the BOT has 250 billion US dollars of foreign assets and the Thai baht depreciates by one baht, a valuation gain of 250 billion baht would be immediately recognized. On the contrary, if the Thai baht appreciates by one baht, a valuation loss of 250 billion baht would be immediately recognized.

Although revaluation measures the value of assets in terms of Thai baht, in reality, the BOT's level of international reserves in foreign currencies remains unaffected and available to be used as a cushion against external volatilities. Hence, although the BOT's financial statements may show losses in some periods, it is not a cause for concern because it could be attributable to a valuation loss. When looking at the BOT's past financial statements, profits can be seen in some years, and losses in others, mainly as a result of the revaluation of assets.

2/ INTERNATIONAL RESERVE MANAGEMENT AIMS TO PRESERVE ITS LONG-TERM VALUE IN TERMS OF FOREIGN CURRENCIES

The central bank's mission is to safeguard economic stability, which requires a long-term and forward-looking perspective rather than focusing on temporary economic trends. Likewise, in the management of international reserves, the BOT invests in assets worth owning for the long-term value, along with suitable risk diversification. Consequently, short-term volatilities may be observed. Furthermore, because international reserves comprise foreign deposits and assets, gold, and reserves at the International Monetary Fund (IMF), therefore, their returns are evaluated in terms of foreign currencies, since the central bank must ultimately keep international reserves readily available and adequate. On the other hand, financial statements are prepared within a pre-determined timeframe (usually annually), resulting in misaligned timeframes between that of financial statements and that of measuring returns from international reserve management.

In addition, the management of international reserves usually entails adjusting investment allocations to be in line with the global economic outlook, to diversify risks and improve long-term returns, rather than in pursuit of profit.

3 / THE CENTRAL BANK'S LIABILITIES ARE DISTINCT FROM THAT OF BUSINESS ENTITIES

The BOT's liabilities arise from (1) printing an adequate quantity of banknotes to meet the needs of the economy and (2) safeguarding economic stability and preserving the value of the Thai baht and Thai people's assets from deteriorating. Hence, the BOT's liabilities are not intended to benefit any

specific group, company, or even the BOT itself, but rather are liabilities arising from operations for the benefit of the Thai public at large. This is what distinguishes the BOT's liabilities from businesses' liabilities, which arise for the purpose of spending or investing for the businesses' own private benefit.

The BOT, as the central bank, has liabilities that are for the benefit of the country as a whole. The first element of such liabilities is banknotes in circulation, which serve as a medium of exchange that is widely accepted as legal tender, paving the way for other economic activities and trade or exchange of goods and services.

The second element is liabilities resulting from the operations on the mission to safeguard economic and financial stability. When there is surplus liquidity in the financial system, the central bank issues central bank bills or bonds to absorb the excess liquidity (increasing liabilities). Conversely, when there is a liquidity shortage in the financial system, the central bank redeems those bills and bonds to inject liquidity into the system (decreasing liabilities).

The third element is financial institutions' deposits at the central bank, as the central bank serves as an intermediary of the financial institution system for interbank payments as well as for the financial institutions' own liquidity management.

The final element is government deposits, or treasury reserves, which arose from the government's cash flow management across different time periods.

4/ PURSUING PROFITS IS NOT THE CENTRAL BANK'S MISSION

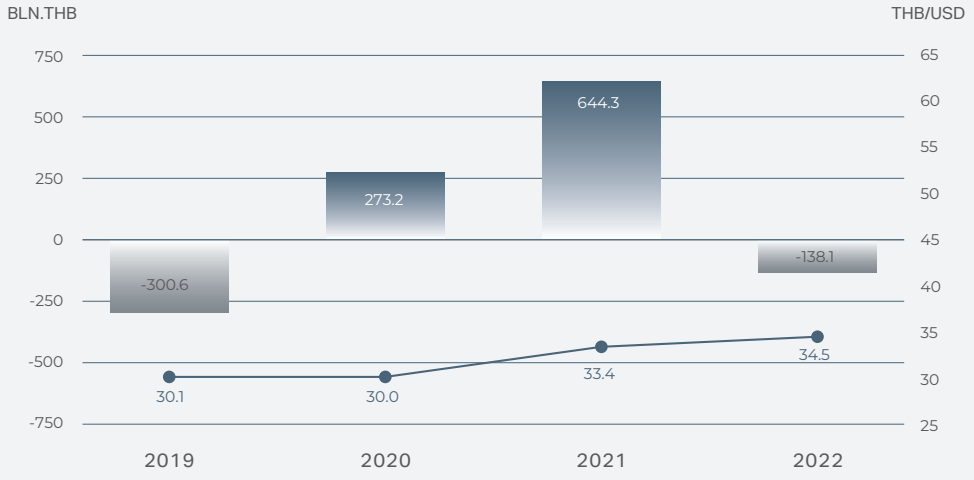
The BOT is a non-profit organization whose mission is to safeguard economic and financial stability. Therefore, any profit or loss in the financial statements is not indicative of its performance in delivering on its mission as a central bank. Moreover, since the BOT implements policies for the benefit of the general public, the BOT is well aware that it must exercise caution and consider the cost-effectiveness of its operations.

Losses in a central bank's financial statements are not uncommon. Such losses, however, do not impair their ability to deliver on their central bank missions, so long as the central bank continues to implement policies that are justified and appropriate in maintaining the country's economic stability, and earn the confidence of all sectors, including the general public, businesses, as well as domestic and foreign investors. In the past, many central banks, such as Switzerland, Singapore, Australia, Israel, and Chile, have experienced financial losses. In the BOT's case, although past financial statement figures have shown losses in some years, the financial market and investors have remained confident in the BOT's operations.

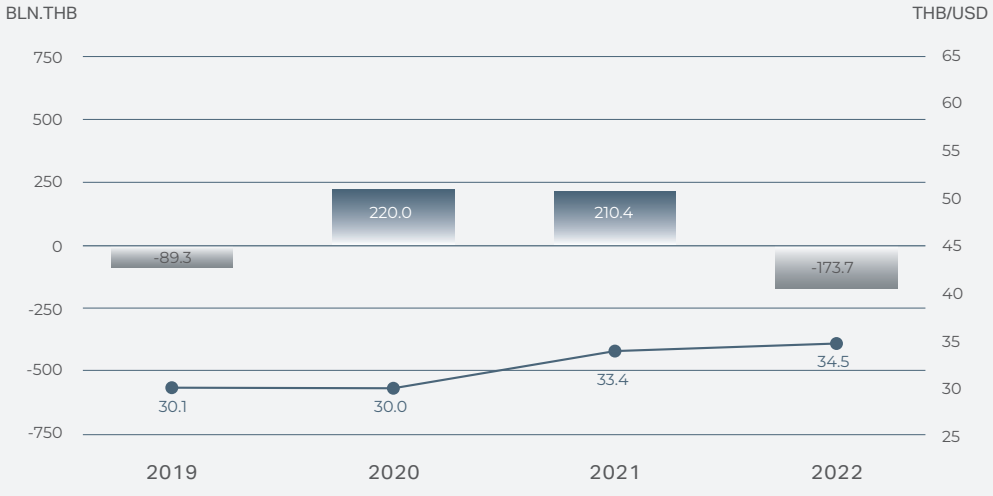
Furthermore, the correlation between a country's economic conditions and the central bank's financial statements is often an inverse relationship. To illustrate, in years when the global financial markets rebound, emerging markets such as Thailand would face increased capital inflows. This, together with the Thai economy's robust and stable growth, would cause the Thai baht to appreciate, which, in turn, would lead to losses in the BOT's financial statements. Moreover, during years in which Thailand's economy had performed well, domestic interest rates on bills and bonds that were issued to safeguard economic stability are high. As a result, the BOT's interest expenses from issuing debt securities to maintain economic stability will be likely to surpass interest incomes from investment. Conversely, when economic growth is stalled due to headwinds such as the COVID-19 pandemic, or crises induced by other domestic factors such as political uncertainty, disasters, etc., the Thai baht would depreciate, leading to profits in the BOT's financial statements. Such profits, however, would not signify a healthy economy, nor would they benefit the people.

THE BOT'S ANNUAL FINANCIAL PERFORMANCE

BANK OF THAILAND ACCOUNT



CURRENCY RESERVE ACCOUNT



In 2022, the Bank of Thailand Account and the Currency Reserve Account recorded net losses after valuation. Although there were gains from international reserve management, resulting from adjustments in investment allocations and efficient risk diversification to correspond with the global economic outlook. However, after incorporating the effects of changes in foreign exchange rates and asset prices, both accounts resulted in losses. This was due to the fact that the Thai baht had appreciated at year-end relative to all other major currencies except for the US dollar. Furthermore, the yield on foreign governments' bonds had continually increased in line with monetary policies tightening, leading to a decline in bond prices.

BOX 12

3 QUESTIONS THAT WILL HELP YOU BETTER UNDERSTAND THE BOT'S FINANCIAL STATEMENTS

WHY DO THE BOT'S FINANCIAL STATEMENTS SHOW PROFITS IN SOME YEARS, AND LOSSES IN SOME OTHER YEARS?

The BOT's annual profit or loss is determined by changes in the valuation of foreign assets, due to a unique characteristic of the BOT's financial statements, in which its assets are mostly international reserves in foreign currencies (approximately 85 percent). At every year-end, these foreign assets must be revalued to Thai baht, resulting in a valuation gain or loss.

Hence, profits or losses in the financial statements do not impair the BOT's ability to deliver on its missions as a central bank, so long as it continues to implement policies that are justified and appropriate in maintaining the country's economic stability and also, importantly, earns the confidence of all stakeholders involved.

BESIDES THE FOREIGN EXCHANGE RATES, WHAT OTHER FACTORS WOULD HAVE AN EFFECT ON THE VALUATION OF FOREIGN ASSETS (E.G. FOREIGN CURRENCY DEPOSITS AND ASSETS, GOLD, AND RESERVES AT THE IMF) IN THE BOT'S FINANCIAL STATEMENTS?

Besides the foreign exchange rates, the valuation of foreign assets will increase or decrease depending on the changes in the prices of such assets. For example, when various central banks increased the policy interest rates to control inflation, the value of the debt instrument that the BOT holds will decrease. On the other hand, if various central banks decrease their policy interest rates to stimulate the economy, this will lead to an increase in the debt instrument prices which will reflect the increase in value of the foreign assets that the BOT holds.

IF THE BOT RECORDS A FINANCIAL LOSS, WOULD IT IMPAIR ITS INTERNATIONAL RESERVE POSITION?

The BOT's profits or losses each year are mostly a result of valuation gains or losses from revaluing assets in foreign currencies or "international reserves" into Thai baht. For example, if the BOT has 250 billion US dollars of foreign assets and the Thai baht depreciates by one baht, a valuation gain of 250 billion baht will be immediately recognized. Conversely, if the Thai baht appreciates by one baht, a valuation loss of 250 billion baht will be immediately recognized. In either case, the BOT's international reserves position remains unchanged at 250 billion US dollars.

For further information on the roles and responsibilities of the BOT, please refer to the article ON THE BOT'S MISSIONS AND FINANCIAL STATEMENTS.

THE BANK OF THAILAND BOARD

as of December, 31 2022

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MEMBER

THE BANK OF THAILAND EXECUTIVES

as of December, 31 2022

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Deputy Governor, Monetary Stability

MR. RONADOL NUMNONDA
Deputy Governor, Financial Institutions Stability

MRS. ROONG MALLIKAMAS
Deputy Governor,
Corporate Development

MR. WORAPORN TANGSAGHASAKSRI
Assistant Governor,
Corporate Services Group

MR. JATURONG JANTARANGS
Assistant Governor,
Supervision Group 1

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Assistant Governor,
Banknote Management Group

MISS SIRITIDA
PANOMWON NA AYUDHYA
Assistant Governor, Payment Systems Policy and Financial Technology Group

MRS. ALISARA MAHASANDANA
Assistant Governor,
Financial Markets Operations Group

MR. TITANUN MALLIKAMAS
Assistant Governor,
Corporate Strategy and Planning Group

MR. DEJ TITIVANICH
Assistant Governor, Information Technology Group

MR. AMPORN SANGMANEE
Assistant Governor,
Internal Audit Group

MR. PITI DISYATAT
Assistant Governor,
Monetary Policy Group

MRS. SUWANNA CHUERBOONCHAI
Assistant Governor, Legal Group

MR. THARITH PANPIEMRAS
Assistant Governor,
Financial Institutions Policy Group

MISS DARANEE SAEJU
Assistant Governor,
Risk Management Group

MISS CHAYAWADEE CHAI-ANANT
Assistant Governor,
Corporate Relations Group

CONTACT

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NAMES, ADDRESSES
AND WEBSITE OF
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