BANK OF THAILAND

FINANCIAL STABILITY REPORT 2022

Financial Stability Report 2022

Contents

Executive Summary

In 2022, the global financial system faced several challenges, including the geopolitical conflict between Russia and Ukraine, volatile financial markets due to rapid, decisive, and synchronized monetary policy normalization by central banks across the globe to curb inflation, as well as the heightened risk of financial crisis in some emerging countries which led to tighter global financial conditions that threatened financial stability in many countries**. Looking ahead, risks to global financial stability are likely to be even higher** given (1) the global economic slowdown, (2) tightening global financial conditions as major central banks continue to raise interest rates to curb inflation, (3) elevated financial vulnerabilities from high public and private debt, (4) rising volatility of risk asset prices, and (5) increasingly complex financial structure from greater role of non-bank financial intermediaries, as well as the environmental, social and governance trends that create transition risk to the corporate sector.

For Thailand, while the overall economy has steadily recovered from impact of the COVID-19 pandemic, inflation has risen partly because of the geopolitical tensions between Russia and Ukraine, affecting the uneven recovery of some economic sectors (K-shaped). **However, the Thai financial system remains resilient**, with strong financial and fiscal positions, low external debt, and relatively large foreign exchange reserves compared to other countries. Financial measures to assist households and businesses, together with gradual and measured monetary policy tightening in accordance with the state of economic recovery, have helped to alleviate impacts and to maintain financial stability over the past year.

As global financial conditions may pose risks to the Thai financial system, financial regulators must be extra vigilant in monitoring, reviewing, and preparing both preventive and corrective measures to address risks. The Bank of Thailand (BOT), the Securities and Exchange Commission (SEC) and the Office of Insurance Commission (OIC) have been in close collaboration in monitoring and assessing the financial system for possible impacts. The regulators have developed the financial stability dashboard for risk monitoring and conducted a macro stress test and a reverse stress test. In addition, **an assessment carried out under a hypothetical risk scenario of global stagflation identified three potential vulnerabilities that should be closely monitored going forward. These include: (1) possible deterioration in the ability to service debt of certain groups of households and small and medium enterprises (SMEs); (2) risk of financial market dysfunction; and (3) debt accumulation and liquidity risk of large and significant corporates (SiCorps)**.

Furthermore, **in view of maintaining financial stability, two sustainability issues will also require urgent attention as follows: (1) addressing the chronic problem of household debt**, which has been plaguing the Thai economy and society for a long time, in order to reduce risk to the financial system in the future; and **(2) moving towards environmental sustainability, by laying the foundation for financial sectors to cope with challenges especially climate change** and to support businesses' transition into a greener economy, so as to limit potential risks to the financial system.

Chapter 1: Risks to Thailand's financial stability

The global financial system in 2022 saw a number of challenges. During the first half of the year, the geopolitical conflict between Russia and Ukraine caused energy prices to soar such that they affect the costs of living and input costs for households and businesses. **While in the second half, global financial markets experienced significant volatility in response to uncertainty over the rapid, decisive, and synchronized monetary policy normalization** by central banks across the globe to curb inflation. **The risk of financial crisis also rose in some emerging countries which led to tighter global financial conditions that threatened financial stability in many countries.** For example, UK pension funds were on the verge of collapsing after they were hit with margin calls as the value of UK government bonds used as collateral fell sharply. In South Korea, the rapid increase in interest rates caused market concerns over firms' default risk and ability to rollover bonds.

Looking ahead, the global financial system is expected to face heightened systemic risks. International bodies, such as the International Monetary Fund (IMF), the World Bank, and the Bank for International Settlements (BIS), viewed that global financial stability risks could stem from **(1) the global economic slowdown, (2) tightening global financial conditions as major central banks continue to raise interest rates to curb inflation, (3) elevated financial vulnerabilities from high public and private debt, (4) rising volatility of risky asset prices, and (5) increasingly complex financial structure from greater role of non-bank financial intermediaries[1], as well as the environmental, social and governance trends** that create transition risk to the corporate sector. These factors can systemically affect global financial markets, and therefore should be closely monitored.

The Thai financial system remains resilient as the Thai economy continues to recover. Commercial banks hold ample levels of capital and reserve and hence have the capacity to support economic recovery going forward. **The insurance sector is financially robust,** as the impact from claims on COVID-19 insurance policies unraveled. **Financial markets continue to function normally despite higher volatility in line with global financial markets.**

Based on a risk assessment, the chance that Thailand would experience events similar to other countries or that such events would transmit risks to the Thai financial system is expected to be limited, given Thailand's strong financial and fiscal positions, low external debt, and relatively large foreign exchange reserves compared to other countries (see Annex: Thailand's financial system). Moreover, a more gradual approach to policy rate normalization in Thailand has also reduced the risk of events resembling other countries.

In a context of rising risk to global financial stability, the Bank of Thailand (BOT), the Securities and Exchange Commission (SEC), and the Office of Insurance Commission (OIC), have been closely monitoring and assessing possible ramifications of the aforementioned risk factors on different sectors of the financial system. In addition, to identify key vulnerabilities and assess the adequacy of both preventive and corrective measures in place, in accordance with the principle "detect the smoke quickly, put out the fire promptly, and stop the fire from spreading,"

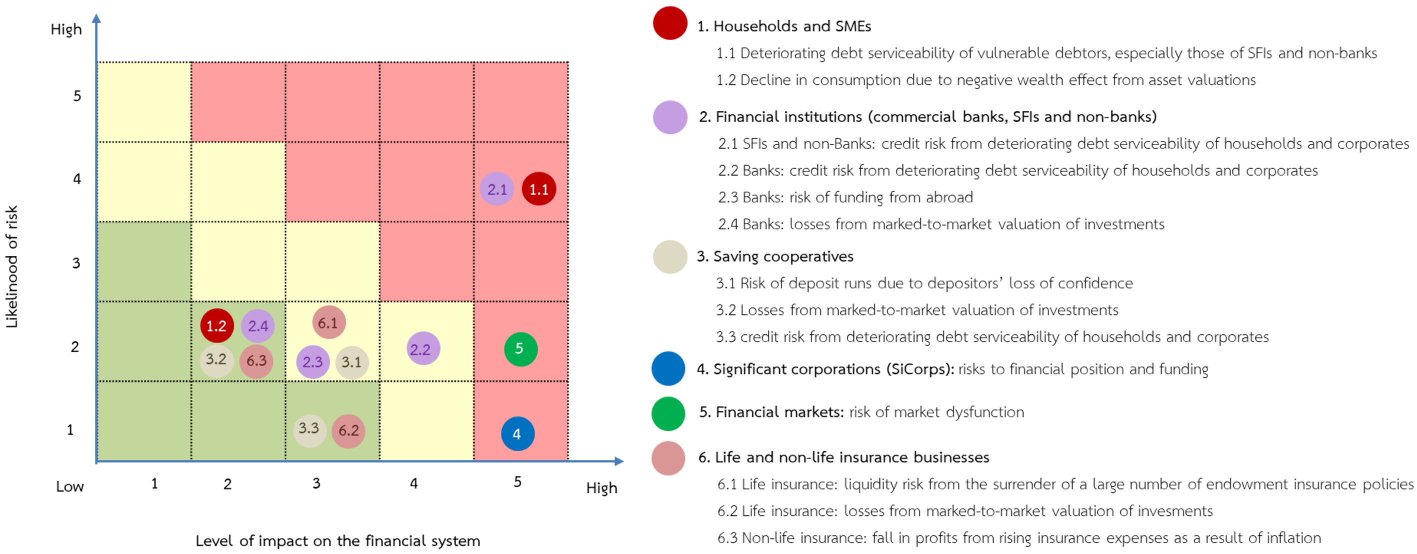
[1] non-bank financial intermediaries refer to financial institutions which do not operate as commercial banks, but provide other financial services, such as mutual funds, hedge funds or pension funds, etc.

the three regulators have conducted risk assessments under various scenarios as follows.

(1) A forward-looking assessment of systemic risks under a hypothetical risk scenario[2], both in terms of probability and impact, was undertaken to determine the adequacy of existing measures and whether any additional tools are needed to manage such risks. The assessment identified **three key vulnerabilities that may pose risk to financial stability going forward as follows** (red zone in Figure 1).

(i) The ability to service debt of certain groups of households and small and medium enterprises (SMEs) could deteriorate if the global economy enters a recession, which would have an impact on Thailand's economic recovery. Thai households are still fragile given high levels of debt and rising costs of living due to inflation. Meanwhile, SMEs remain at risk, especially in sectors where incomes have not fully recovered, such as tourism and services sectors, as well as in sectors that are more sensitive to higher costs, such as transport of goods, trade, and construction materials. **The BOT has continuously implemented financial measures to assist vulnerable debtors over the recent years**, for example, long-term debt restructuring measures, the Debt Clinic, and the Debt Resolution Expo, which have helped to alleviate borrowers' debt burdens. **However, these debt resolution measures still need to target more toward vulnerable borrowers, especially those of specialized financial institutions (SFIs) and non-bank retail lenders** (details in Chapter 2).

Figure 1: Forward-looking assessment of systemic risks under the hypothetical risk scenario of global stagflation



Source: BOT

[2] Assumptions: (1) US inflation remains above the level forecasted by the Federal Reserve (FED), so that in 2023 the FED would have to raise interest rates to 6.0 percent rather than the median dot plot of 4.8 percent. (2) The global economy enters a severe recession to the point of contraction (the IMF estimated the probability of a global recession in 2023 to be 10 percent, citing IMF (2022): "Global Financial Stability Report—Navigating the High-Inflation Environment", Washington, DC, October), the Chinese economy experiences a sharp slow-down due to the zero-COVID policy and problems in the real estate sector, and the US dollar continues to appreciate against emerging market currencies. (3) Impact on Thailand: the Thai baht depreciates more than regional currencies to a value above 40 baht per US dollar and inflation remains above expectations, calling for a more aggressive interest rate hike that would impact economic recovery through domestic consumption, private investment and debt serviceability, while the number of tourists remains below the projection of 20 million, and hence Thailand's gross domestic product (GDP) is likely to be in recession.

(ii) The risk of financial market dysfunction, which could impact the performance of financial institutions, mutual funds, securities and insurance companies, as well as stability of the financial system as a whole. As a result, financial regulators, including the BOT, the SEC, and the OIC, will continue to closely monitor the situation and prepare to ensure that financial markets have sufficient liquidity to perform the function of resource allocation even in a crisis.

(iii) The accumulation of debt and liquidity risk of significant corporates (SiCorps)[3]. Although risks to SiCorps' financial positions are currently low, but if any problem arises, it could have a widespread impact on the financial system. Hence, it is important to monitor: (i) the risk of credit default overseas that could spill over to the Thai corporate bond market (cross default), (ii) corporate bond rollover risk, especially for some SiCorps with a significant portion of bonds expiring in the next 1 – 2 years, and (iii) risks from business expansion outside of core business, which could affect the group's financial position. In addition, enhancing monitoring financial market indicators is needed to provide early warning signals of credit default risk. Also, relevant authorities must coordinate and prepare to take responsive measures should a risk event occurs in order to prevent systemic risks.

Overall, the oversight of both (ii) and (iii) will require cooperation from all relevant parties, including related supervisory authorities, who must closely monitor the situation and prepare measures to ensure that financial markets can perform intermediaries function in resources allocation with sufficient liquidity even in times of stress, **and the private sector**, who should pay attention to the management of short-term funding concentration risk, asset price volatility, as well as foreign exchange rate risk and liquidity in offshore borrowing.

(2) The macro stress test under the RAM scenario[4] indicates that the Thai financial system overall has sufficient liquidity and financial strength to withstand shocks, both in the adverse scenario of economic contraction due to another COVID-19 outbreak and energy crisis and in the scenario of a sluggish recover. In addition, **the reverse stress test**, conducted to assess potential scenarios and critical thresholds of key indicators that could undermine the resiliency of financial institutions, financial markets and overall financial stability, also **indicates that the Thai financial system is resilient to shocks and the risk indicators at current levels are far from those critical thresholds that would trigger stress for banks, mutual funds, securities companies or insurance companies** (details in 3.1)

(3) The financial stability dashboard was jointly developed by the BOT, the SEC, and the OIC to (1) monitor risks to the Thai financial system in a forward-looking manner, and (2) provide a standard for assessing the level of risk and risk management action in different sectors. Assessments in 2022 shows that "the Thai financial system remains resilient with improvement from previous year. Financial institutions are financially strong. The debt serviceability of businesses and households has improved although some vulnerable groups could be affected by rising costs of living, cost of producing and financial market volatility going forward" (more details in Table 1). Moreover, since the first quarter of 2022, the BOT began publishing quarterly financial stability snapshots in addition to the annual financial stability report, to communicate potential systemic risk developments to the public in a timely manner (details via QR code – TH version only).

Quarterly Financial Stability Snapshot

[3] Significant corporates (SiCorps) mean 20 corporate groups with the highest value of loans and bonds outstanding, as of January 2022.

[4] The RAM scenario assumes that the Thai economy experiences a new wave of COVID-19 outbreak and energy crisis.

Table 1: Thailand's Financial Stability Assessment in 2022

Sector	Risk Indicator* 2564	Risk Indicator* 2565	Assessment
Large corporates	M	M	• **Large corporates are financially sound in terms of performance, liquidity, and debt serviceability, and able to raise funds normally** as the economy continues to recover. However, some sectors warrant closed monitoring given their sensitivity to rising input costs, for example, transportation of goods and construction materials sectors.
SMEs	H	H	• **Despite improvement in income and loan quality, SMEs remain financially vulnerable and their progress of recovery should continue to be closely monitored**, especially for tourism-related businesses and sectors affected by rising input costs, such as transportation of goods, trade, and construction materials sectors.
Households	H	H	• **Households remain fragile from high debt and rising costs of living,** especially low-income households whose income has not fully recovered. **H**ouseholds' financial position has improved slightly, and household debt has declined from last year, but credit quality of borrowers affected by COVID-19 should be monitored.
External	M	M	• **External stability remains strong** given ample level of international reserves that covers repayment of short-term external debt, while the current account balance has improved.
Savings cooperatives	M	M	• **Overall, cooperatives are financially sound and have sufficient liquidity for business operations.** The overall level of debt remains low despite an increase in borrowings. Nevertheless, some cooperatives should continue to be monitored given higher investment activities that may be vulnerable to high market volatility.
Real estate	H	M	• **The residential real estate market continues to recover in line with economic conditions and government support, despite pressure from interest rate normalization and rising house prices due to higher cost of building materials,** which could affect demand going forward. Recovery of small developers still needs to be monitored. • **The commercial real estate market, especially office buildings, is likely to experience oversupply in the next 1-2 years. However, this would have minimal impact on financial stability because high-risk developers have limited exposures to the financial system** (more details in Annex: Box 1).
Financial markets	M	M	• **Financial markets continue to function normally but may be subject to higher volatility** from global economic uncertainties, tighter global financial conditions, and declining liquidity in the global financial system.
Banks	M	M	• **The banking system is resilient, with ample capital, provisions, and liquidity.** Earnings has improved from previous year due to loan growth, which raises net interest income, and lower cost of provisioning. Credit quality remains stable, partly due to debt restructuring and internal management. However, certain groups of borrowers remain vulnerable due to impact from rising costs of living and/or their incomes have not fully recovered.
Digital assets	M	M	• **Digital assets pose limited risk to the Thai financial system,** as the number of active trading accounts and trading volumes of retail investors continue to decline. And while financial institutions may engage in digital asset-related activities to a limited degree under supervision, investment activities should continue to be monitored given their volatile nature and interest from institutional investors and corporates.
Insurance	M	M	• **Insurance businesses are financially stable.** Even though some non-life insurers suffered severe losses from COVID-19 insurance policies during the first half of the year, as the number of people infected had increased considerably in the first quarter of 2022. The situation has now improved and returned to normal.

Remarks: * The risk indicator has 4 levels: L = low risk: requires periodic monitoring, M = medium risk: requires close monitoring, H = high risk: requires risk prevention measures, and E = extremely high risk that could undermine financial stability: require immediate risk reduction or corrective measures

Chapter 2: Resilience of the household and corporate sectors

2.1 Assessment of the resilience of households and corporates and impact of policy normalization

The overall financial stability of households and corporates has improved from the previous year. The household sector continues to recover in line with the Thai economy but remains fragile from high level of debt. The ratio of household debt to GDP as of 2022Q3 is 86.8 percent, which is lower than at the end of 2021. In fact, household debt has declined in almost all categories, except for credit card and unsecured personal loans.

The corporate sector also see an improvement in the ratio of corporate debt to GDP at 77.1 percent in 2022Q3, a decline from previous year. **Large corporates are in good financial standing with sufficient liquidity buffers,** as reflected by the improvement in profitability and debt serviceability indicators of listed companies, and an increase in fundraising through loans and bonds for additional investment as the economy recovers. Likewise, **SiCorps with ample liquidity and strong financial positions also continue to raise more funds**[5] for new investment, taking advantage of low financing costs before interest rates start to rise. **On the other hand, large corporates and SiCorps in some sectors have not completely recovered from the pandemic**, such as tourism-related businesses and construction. And **while SMEs show signs of income recovery, they remain financially fragile** with SME credit growth mainly attributable to the Special Loan Facility.

Credit quality has also improved in line with economic conditions and debt management by banks. **However, debt serviceability should still be monitored for vulnerable households and SMEs** whose incomes have not fully recovered, for example, low-income households, self-employed, SFIs' agricultural debtors, workers and SMEs in tourism-related and services sectors.

Despite continuous recovery, the Thai economy still faces challenges from K-shaped recovery, higher inflation due to geopolitical conflicts between Russia and Ukraine, the **direction of monetary policy tightening** in major economies, and the repercussions on Thai financial markets from global financial market volatility. Nevertheless, the BOT's approach of a gradual and measured policy normalization aims to ensure that **interest rate hikes would have limited impact on households and businesses' ability to service debt**[6]. The increase in debt burdens should be offset by rising income and employment. Moreover, over 60 percent of household debt consists of fixed interest rate loans such as hire purchase loans, credit cards and personal loans, or floating rate-fixed installment loans such as housing or mortgage loans, in which their installment payments would have taken into account to some extent policy rate hike. Furthermore, while some borrowers could see their interest expenses rise, **the impact of interest rate hike on household expenses overall is estimated to be lower than the effect of inflation that reduces their purchasing power**. That is, a 1 percent increase in interest

[5] As of 2022Q2, loans outstanding amounted to 5.1 trillion baht (growth of 11.6 percent YoY), comprising of 2.5 trillion baht of loans from commercial banks and SFIs (47 percent of corporate loans with credit line from a bank greater than 500 billion baht) and 2.6 trillion baht of corporate bonds (64 percent of corporate bonds outstanding).

[6] Households and corporates' debt serviceability was assessed over a 2-year horizon (2022-2023), which considered paths of income recovery based on the assumption that GDP growth in 2022 and 2023 would be 3.3 and 4.2 percent YoY, respectively (household income is classified by low-, middle-, and high-income levels, and corporate income is classified by sector). As for impact on costs, increases in input and living costs are estimated under the assumption that headline inflation in 2022 and 2023 would be 6.2 and 2.5 percent YoY, respectively, and take into account rising interest expense from policy rate hike.

rates would increase indebted households' expense by 0.5 percent, while inflation would trigger an increase of 3.6 percent, which is 7 times higher. **As for corporates, impact is expected to be limited as financing costs only make up about 2 – 4 percent of all expenses.**

However, some groups may be more fragile and sensitive to interest rate rise and inflation, such as low-income households whose incomes have not fully recovered, of which some are debtors of SFIs and have taken out floating-rate loans or loans with installments that have been less buffered for interest rate increases, and SMEs that are slow to recover and/or more sensitive to rising energy and input costs, namely hotel, transportation, petroleum, petrochemicals, trade, and construction materials. **Hence, the BOT would continue to provide support measures for vulnerable groups and to adjust measures as necessary in accordance with economic conditions in the future.**

2.2 Financial measures for addressing vulnerabilities of the household and corporate sectors

As the Thai economy shows clear signs of recovery, the majority of businesses and households, as well as financial institutions, have regained strength, as a result, broad-based financial assistance measures are less needed. If broad-based measures are to be implemented for too long, they could distort market mechanisms and leave unintended consequences for the financial system over the long term. Therefore, **the BOT is gradually normalizing policy measures in accordance with the economic circumstance and monetary policy stance** by (1) terminating applications for assistance from the Corporate Bond Stabilization Fund (BSF) after 31 December 2022, and (2) allowing the easing of loan-to-value (LTV) measure for housing and housing-related loans to expire at the end of 2022 (more details in Annex: Box 2). **These decisions aim to ensure that policies are most effective and do not leave unintended consequences on the financial system.**

At the same time, with uneven economic recovery and pressures from inflation and interest rate tightening, targeted measures are still necessary to support certain vulnerable groups as follows.

(1) Implementation of existing targeted measures, including **long-term debt restructuring programs** that are effective from 3 September 2021 until the end of 2023 and the Asset Warehousing scheme that is effective until 9 April 2023, **the Special Loan Facility** for providing new liquidity until 9 April 2023, and **debt resolution facilities** such as Debt Clinic, Debt Mediation Program, and Doctor Debt Scheme. Most of the measures are set to expire in 2023 when the economy is expected to see clear recovery, but **the BOT would be ready to make flexible adjustments in accordance with the prevailing situation and circumstances** (details in Table 2).

(2) Introduction of measures to address vulnerable debtors, especially those with unsecured loans whose income has yet to recovered and costs of living has risen. **For loans that are still performing, the measures call for maintaining the reduced minimum monthly repayment for credit card of 5 percent until 2023 and maintaining the extended maturity up to no more than 12 months for digital personal loans until 2023. For non-performing loans, the Debt Clinic's repayment program has been adjusted** to provide more repayment flexibilities that allow borrowers to pay off debt faster, with better interest rates for shorter repayment terms. In addition, **the BOT and the Ministry of Finance have co-organized the Debt Resolution Expo** to facilitate both lenders and borrowers in reaching fair debt resolution agreements, and to help borrowers get out of debt traps. The Expo runs from 26 September 2022 until 31 January 2023 and involves more than 60 private and public financial service providers in all loan types, including **credit card, personal loans, hire purchase and leasing of cars and motorcycles, title loans, mortgage loans, nano finance, agricultural loans, corporate loans, debtor guarantee compensation of the Thai Credit Guarantee Corporation (TCG), debt transferred to asset management companies, and loans from SFIs**.

The prolonged COVID-19 pandemic has had widespread impact and accelerated structural changes towards a new normal, which could affect the competitiveness of businesses and the Thai economy in the long run. Hence, in addition to debt resolution and liquidity measures to support those affected by the pandemic, **further financial measures are needed to facilitate a smooth transition and enhance the resilience of debtors in a sustainable manner**. On 1 September 2022, the BOT and the Ministry of Finance have released SME transformation loans as part of the Special Loan Facility. The loans' feature is adjusted from the Special Loan Facility phase 2 in order to provide low-interest credit lines for SMEs to enhance their business potential by facilitating an adoption of digital technology, innovation, and environmental sustainability.

In relation to systemic risks from SiCorps, focus of the BOT and related regulators is on the ringfencing of risks and their potential impact on the financial system because the consequences could be widespread if a SiCorp encounters a problem. Hence, to ensure continuous functioning of the financial system, the regulators are putting in place both preventive and corrective measures, such as investment concentration limits that apply to most financial institutions, including banks, SFIs, insurance companies, and mutual funds, with the exception of cooperatives. In addition, stress tests under the scenario of SiCorp default are also carried out to assess the adequacy of measures and supervisory processes.

Table 2: Progress of financial measures to assist debtors affected by the COVID-19 pandemic

Measure	Progress
1. Resolution of existing debt	
1.1 Long-term debt restructuring programs taking effect on 3 September 2021 (as of 30 September 2022)	• Debtors under all debt restructuring measures (including long-term debt restructuring programs) make up a total of 3.83 million accounts. • Total outstanding debt of 2.98 trillion baht (including banks, SFIs, and non-banks). More details on assessment of SME debt restructuring by banks in Annex: Box 3.
1.2 Asset Warehousing scheme (as of 19 December 2022)	406 debtors with total debt of 57.3 billion baht, of which more than 57 percent are in tourism-related businesses
2. Provision of new liquidity	
Special Loan Facility (as of 19 December 2022)	205 billion baht of approved loans, covering more than 58.7 thousand debtors and accounting for 82% of the total budget of 250 billion baht.
3. Additional debt resolution facilities	
3.1 Debt Clinic (as of 30 November 2022)	99.2 thousand accounts joined the program and received assistance, with a success rate of 85 percent.
3.2 Debt Mediation Program (as of 31 December 2021)	231,795 accounts joined the mediation program for credit card, personal loans, and hire purchase loans, with a success rate of 72 percent.
3.3 Debt Resolution Expo (as of 19 December 2022)	175,308 debtors joined the Debt Resolution Expo, with a total of 384,328 transactions.
3.4 Doctor Debt Scheme (as of 31 October 2022)	More than 5,999 debtors requested for advice.

Source: BOT

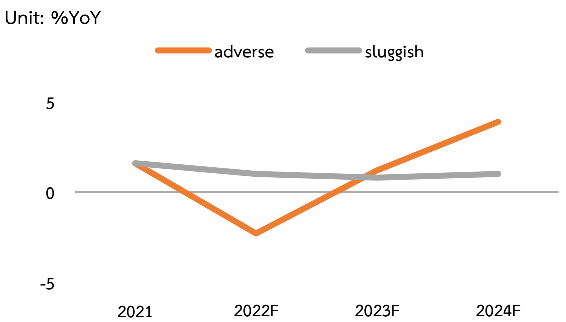
Chapter 3: Resilience of the financial sector

3.1 Financial Institutions

Thai Financial institutions system continues to be resilient with ample capital and provisions, and are able to provide liquidity to support economic recovery. Securities and insurance companies in general are financially sound. Even though some non-life insurers were impacted by claims from COVID-19 insurance policies, the situation has now improved as these policies expire and regulatory supervision was enhanced.

However, **with significant uncertainty ahead, the global economy is facing heightened risks that could spill over into the Thai financial system. Therefore, the BOT, the SEC, and the OIC have conducted stress tests to assess the adequacy of capital and liquidity buffers of financial institutions**, under the adverse scenario of a sharp but temporary economic shock and the sluggish scenario of prolonged recovery. **The scenarios assume that (1) COVID-19 infections would continue to persist, (2) the geopolitical conflict between Russia and Ukraine would raise energy and commodity prices, inflation, and production costs, and (3) financial and capital markets would be more volatile as a result of higher inflation and monetary policy divergence across major economies** (Figure 2).

Figure 2: Assumptions of economic growth for the stress test scenarios



Note: F indicates forecasted data
Source: BOT

Furthermore, the three regulators have also conducted reverse stress tests to assess potential scenarios that could significantly undermine the financial positions of banks, capital market intermediaries and insurance businesses. Such an exercise would help to identify systemic vulnerabilities and to develop appropriate preventive measures. For example, the rate of inflation that could trigger severe deterioration in borrowers' debt serviceability and credit quality, and affect banks' financial position, or the increase in bond spreads that would impact bond valuations and returns of fixed income mutual funds.

3.1.1 Commercial Banks and SFIs

The banking system is financially strong with high levels of capital, loan loss provisions, and liquidity (Table 3). **As of 2022Q3, banks' performance has improved from a year earlier due to credit growth** (from large corporates and retail loans) and lower provisioning compared to the level during COVID-19. **Non-performing loans (NPL) has also declined as a result of debt management action by banks. Overall, performance over the whole of 2022 is expected to improve in line with economic recovery,** as interest income increases with loan growth and rising interest rates. **However, credit quality of certain groups of SMEs and retail borrowers must still be monitored given slower income recovery and impact from higher input and living costs** (details of the banking system's performance via QR code).

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For SFIs, even though a portion of loans are driven by government policies, the credit quality of debtors should still be closely monitored. In particular, agricultural borrowers, retail borrowers with mortgage loans, and personal loan borrowers could have lower ability to service debt if their incomes do not recover in line with rising costs of living and interest rates.

Table 3: Thai banks' financial and liquidity positions

Capital adequacy ratio (BIS ratio)	19.2	Remains at a high level*
NPL coverage ratio	171.6	Banks continue to maintain provisions in view of loan quality going forward
Liquidity coverage ratio	186.5	Above minimum level**
Loan to deposits ratio (L/D ratio)	94.5	Loans are expanding at a higher rate than deposits

Note: * the minimum requirement is 11% (12% for domestic systemically important banks (D-SIBs)), ** the minimum requirement is 100%
Source: BOT (as of the end of 2022Q3)

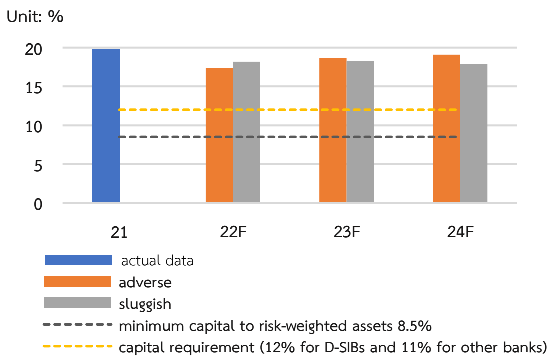
Given that the economy is on a steady path of recovery and that financial institutions are financially sound with sufficient capital, liquidity, and provisions to withstand risks ahead, the maintenance of stabilization measures during the COVID-19 pandemic for too long could leave unintended consequences on the financial system, distort market mechanisms, and reduce efficiency of financial institutions over the long run. Hence, the BOT has gradually normalized financial policies as follows.

(1) Removal of limit on banks' dividend payout, which capped the dividend distribution rate at up to 50 percent of net profit for the year to maintain stability and strengthen buffers of banks during the pandemic. Results of the capital adequacy stress test indicate that banks are strong with adequate capital and provisions to cope with forthcoming risks, which are in line with most countries that have removed such requirements. Nevertheless, banks should maintain a cautious approach in determining their dividend payout ratio in accordance with their performance and risks that may arise in the future.

(2) Adjustment of the rate of contribution to the Financial Institutions Development Fund (FIDF) back to the normal level of 0.46 percent per year starting in 2023. The rate of contribution was previously reduced to 0.23 percent per year in order to allow financial institutions to pass on the reduced costs to help borrowers through various means during the COVID-19 pandemic. Normalizing the FIDF fee to its original level is consistent with economic conditions and strength of financial institutions that can support borrowers without assistance from reduction in FIDF fee. This will help getting the plan to gradually reduce the FIDF's debt back on track, and thus reduce burdens on the economic and financial system in the long run. In practice, most financial institutions are still cautious in passing on costs to retail consumers and businesses (details in Annex: Box 4).

Furthermore, in order to prepare appropriate measures for financial institutions**, the BOT has evaluated potential NPL cliff effects from: (1) expiration of financial assistance measures, in which impact was assessed to be low, (2) a crisis event,** in which the macro stress test and supervisory stress test under sluggish and adverse scenario forecasts for 2022-2024 **found that the Thai banking system would be able to withstand shocks given ample capital** (Figure 3) **and sufficient liquidity to cope with 30 days of crisis. Moreover, a reverse stress test based on the cost impact of inflation found that inflation would have to rise well above the prevailing level for two consecutive years to have an impact on banks' credit quality and capital level**. In addition, the BOT is working with SFIs to develop stress testing tools similar to those used by banks to enhance the supervision of SFIs.

Figure 3: Banks' BIS ratio under stress



Note: F indicates forecasted data
Source: BOT

Additionally, **to provide flexibility for financial institutions in dealing with non-performing assets, financial institutions can form joint ventures with asset management companies** by 2024 to ensure effective management of bad debts, and leverage on the experience and expertise of asset management companies. At the same time, maintenance of debt restructuring mechanisms would ensure that borrowers can still benefit from financial assistance without having to liquidate collateralized assets at discounted prices, thus allowing economic activities to continue.

3.1.2 Insurance companies

As economic recovery gains traction this year, the insurance industry is expected to see modest growth of approximately 0.1 to 2.1 percent. Life insurance business continues to experience a slowdown as demand for insurance products decline due to inflation and high level of household debt. On the other hand, non-life insurance business experiences rising growth along with economic recovery and relaxation of international travel restrictions in many countries.

Although some non-life insurance companies suffered severe losses from COVID-19 insurance policies ("Found, Paid, Done") during the first half of the year given significantly high infection rate in the first quarter. The situation has now been resolved because such policies have now expired with no further renewal.

In addition, the OIC has taken proactive steps to immediately restore confidence to the insurance industry, by enhancing regulatory mechanisms (proactive actions) **and cooperating with all relevant stakeholders to prevent problems similar to the case of COVID-19 insurance policies from reoccurring.** For example, the issuing of registrar order to provide clear interpretation of insurance policy terms in relation to contract termination and preparation of guidelines to ensure consumer protection in the event that a non-life insurance company enters the rehabilitation process.

Two stress tests were carried out for the insurance system in 2022. The first assessment, based on the scenario of outbreak of the Omicron variant of COVID-19, **revealed that most non-life insurance companies remain financially robust**, while some firms that would be severely impacted (with lower capital levels than legally required) are limited to those that sold a large number of COVID-19 insurance policies.

As for **the second assessment**, the OIC has coordinated with the BOT and the SEC in developing the RAM scenario, specifically in relation to insurance risk factors that could arise from the pandemic. In addition, the OIC has also engaged with the Thai Life Assurance Association, Thai General Insurance Association, and the Society of Actuaries of Thailand to conduct a reverse stress test. **The stress tests indicated that, overall, the insurance system remains resilient as most insurance companies are able to withstand the specified macro scenario in terms of both capital adequacy and liquidity.** Almost all insurance companies are financially sound, with capital adequacy ratios (CAR) greater than the minimum requirement of 100 percent and sufficient liquidity to fulfill obligations to the insured, and hence are not expected to present risks to the stability of the financial system.

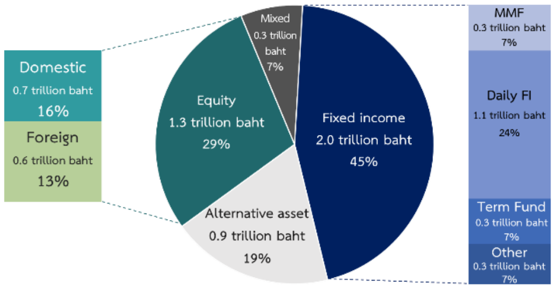
3.1.3 Mutual funds

As of September 2022, the Thai mutual fund industry has 4.5 trillion baht [7] of assets under management, accounting for 28 percent of GDP, through 1,907 mutual funds managed by 22 asset management companies. Most of these companies (80% of market share by assets under management)

[7] Excluding property funds (Funds 2 – 4), Vayupak funds and mutual funds for foreign investors.

are structurally linked to commercial banks through subsidiary relationship, so **the mutual fund industry is significantly interconnected to the economic system and capital markets**. In addition, the main channel for selling mutual fund units is through commercial bank branches, where the majority of customers are bank depositors. Hence, deposit-like fixed income funds[8] are the most popular and constitute the largest proportion compared to other types of mutual funds (Figure 4).

Figure 4: Product structure of the mutual fund industry in Thailand (as of September 2022)



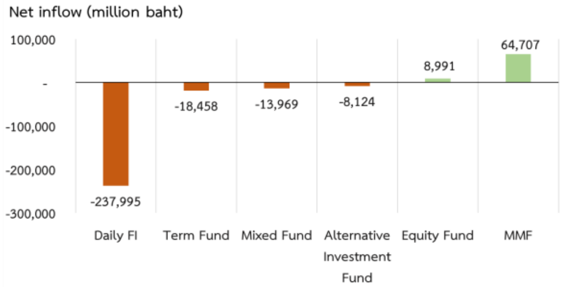
Source: SEC

Although the COVID-19 situation has improved in 2022, the global economy still faces challenges from geopolitical conflicts and inflation, prompting central banks in major economies such as the US to aggressively raise interest rates to rein in inflation over the long term. As a result, **mutual funds of all types, except for money market funds (MMF) and equity funds, experienced net investment outflows during January to September 2022** (Figure 5).

Moreover, monthly investment flows of daily fixed income (Daily FI) mutual funds, which allow for daily redemption of fund units, showed net outflows in every month. Outflows peaked in May (Figure 6) when the US Federal Open Market Committee (FOMC) signaled continuous interest rate tightening to curb inflation, which affected the valuations of government bonds and consequently the returns of Daily FI funds.

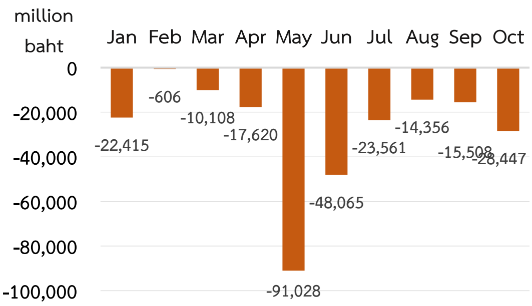
Nevertheless, the proportion of liquid assets in Daily FI funds' portfolios remain at normal levels as of September 2022 (Figure 7), with most fixed income investments consisting of government bonds and corporate bonds rated A or above.

Figure 5: Net investment inflows – outflows by mutual fund type during January – September 2022



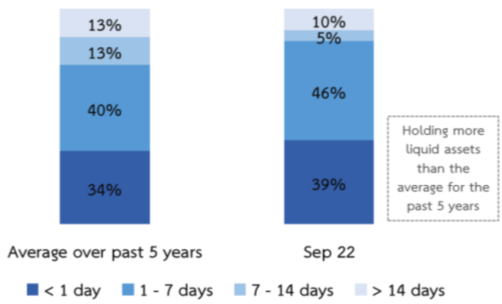
Source: SEC

Figure 6: Monthly net investment inflows – outflows of Daily FI funds during January – September 2022



Source: SEC

Figure 7: Liquid assets of Daily FI funds by cash conversion period



Source: SEC

[8] Deposit-like fixed income funds consist of (1) money market funds (MMF) and Daily fixed income funds (Daily FI), which allow for daily redemption of units similar to deposits and (2) Term funds, which hold debt instruments until maturity similar to fixed-term deposits.

In this regard, **the SEC has required asset management companies to put in place a liquidity risk management framework in line with international practices by 1 July 2022**[9], in preparation for systemic events or adverse market conditions in the future. **In addition, they are required to carry out liquidity stress tests and to prepare a contingency plan for significant events that could affect mutual funds' liquidity.**

In 2022, the SEC, together with other financial regulators and asset management companies, carried out a supervisory stress test to assess potential liquidity impact on fixed income mutual funds from possible risk events. **The test indicated that fixed income mutual funds remain robust with sufficient liquidity to meet redemptions in crisis.** The SEC also organized a **crisis simulation exercise** for asset management companies and mutual fund selling agents to walk through their contingency plans to ensure that they are operational, for example, execution of investor communication plans and liquidity management tools. **Business operators were able to execute the plans according to the test scenarios** and have taken steps to enhance their contingency plans accordingly. **Both exercises helped to enhance preparation and readiness of mutual funds' liquidity management system and tools, as well as the risk monitoring framework and coordination mechanisms between regulators and business operators.**

3.1.4 Savings Cooperatives

Overall, savings cooperatives remain financially sound with sufficient liquidity, as their equity and total assets grew by 3.3 and 5.5 percent respectively from previous year as of 2022Q3. **However, there are risks that need to be monitored in 2 dimensions, namely (1) household debt, in which cooperatives are one of major lenders and (2) search for yield behavior.**

In 2022, lending by savings cooperatives to households make up 15 percent of total household debt from all providers[10], which is stable from previous year. Many cooperatives have engaged in debt restructuring in line with borrower's debt serviceability. However, **more can be done in terms of systematic collection or reporting of credit information by cooperatives**, as only four cooperatives are presently reporting credit data to the National Credit Bureau (NCB). In addition, **the Cooperative Promotion Department (CPD) should establish responsible lending guidelines for cooperatives** to curb over-indebtedness among cooperative members.

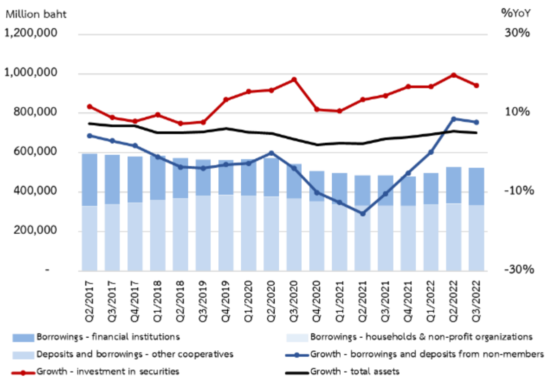
On the investment side, **savings cooperatives with excess liquidity have continued to expand investments in financial assets from previous year to seek higher yields, despite a slowdown in investment during the COVID-19 pandemic**. As a result, investment growth of the savings cooperative system has accelerated from previous year, at a higher rate than total asset growth (Figure 8). Most of this growth is attributable to investments in corporate bonds with credit risk and equity investments concentrated in a few companies, as cooperatives may only invest in shares of state-owned enterprises. In a context of rising financial market volatility, cooperatives may incur losses from market repricing of risky assets, which could

[9] Examples of liquidity management tools include swing pricing, anti-dilution levies (ADLs) and redemption gates, etc.

[10] Total household debt from all service providers means loans or investments granted to households (individuals) by the following financial institutions: commercial banks, deposit-taking SFIs, savings cooperatives, finance companies and credit foncier companies, credit card companies, leasing and personal loan companies, life and non-life insurance companies, securities companies, asset management companies and Thai Asset Management Corporation, pawnshops and other financial institutions.

impact their financial positions and members' confidence.

Figure 8: Savings cooperatives' investments, borrowings and assets



Source: CAD, calculations by the BOT.

In view of these risks, **the CPD, the Cooperative Auditing Department (CAD), the Fiscal Policy Office (FPO), and the BOT have been in continuous discussions on monitoring and enhancing the supervision of financial cooperatives**. Example of enhancements include establishing policies and risk management framework for liquidity, operational and investment risks (e.g. concentration limits), requiring the establishment of an investment sub-committee for cooperatives whose investments exceed a specified threshold, and enhancing supervision of lending activities in which cooperatives should consider all debt burdens of a borrower in granting credit and abide by responsible lending regulations. **These initiatives aim to ensure that the financial cooperative system is resilient and pose limited systemic risks to other parts of the financial system, is able to function efficiently as financial service providers, and has a role to play in solving the country's household debt problem.**

3.1.5 Non-bank retail service providers

Non-bank financial institutions are key players in providing financial services to retail borrowers in the Thai financial system. As of 2022Q3, credit card and personal loans under the BOT's supervision has grown by 18.8 percent from previous year. The number of service providers has also increased significantly, especially for non-banks that are not part of a banking group, which have increased by more than two-fold over the past 4 years from 51 companies prior to 2019 to 114 companies. **Credit quality, on the other hand, has slightly deteriorated** mainly due to the quality of personal loans under supervision. Nevertheless, **large non-banks[11] remain in good financial position** in terms of profitability, liquidity, and indebtedness.

Looking ahead, these non-banks are facing risks from inflation, which could hinder the debt serviceability of vulnerable households, and financial market volatility. Such risks may affect non-banks' financial position and spillover to creditors such as bondholders and financial institutions given **greater interconnectedness within the financial system**. In this regard, 59 percent of non-banks' sources of fund are from bonds and loans from financial institutions.

In addition, hire-purchase and leasing of cars and motorcycles businesses are also widely available to consumers. Their transaction volume becomes increasingly important to Thailand's economic and financial system, having grown at an average rate of 5.6 percent per year between 2017 to 2021. The value of transactions outstanding stood at 1.8 trillion baht in 2022Q2, or 12.3 percent of total household debt, **with a third of such transactions attributable to non-banks that are not subsidiaries of commercial banks and hence**

[11] Large non-banks include 10 non-bank financial institutions listed on the stock exchange.

are not under supervision. These service providers have also been increasingly subject to complaints from the public.

Therefore, in order to manage such risks, a working group comprised of representatives from the BOT, FPO, and the Office of the Consumer Protection Board (OCPB) has engaged in discussions and jointly drafted a Royal Decree that will regulate the hire-purchase and leasing of cars and motorcycles businesses that are currently not under supervision, focusing on two areas as follows.

(1) Maintaining economic and financial stability, especially in relation to the management of household debt towards sustainable levels and curbing over-indebtedness.

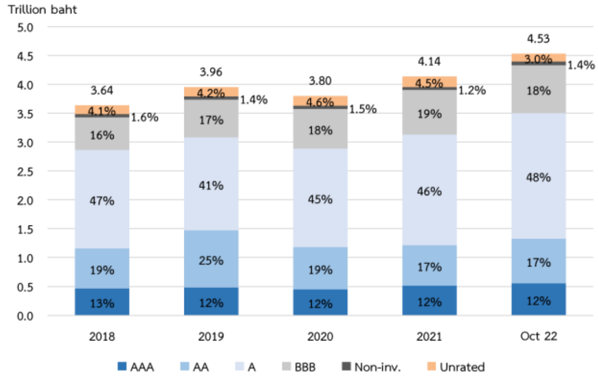
(2) Promoting consumer protection to ensure that consumers have access to financial services that are fair and reasonably priced, without being deceived, forced, disturbed or taken advantage of, and receive adequate and transparent disclosure of information for decision making.

3.2 Financial Markets

Thai financial markets have been functioning normally in 2022 despite some short-term volatility. Thai government bond yields rose sharply in April – May this year and subsequently declined as the direction of monetary policy became clearer. The heightened volatility in markets led institutional investors, especially those with lower risk appetite, to reduce investments in corporate bonds in favor of higher liquidity. Nevertheless, **the corporate sector is still able to raise funds through the bond market** through demand from retail investors. Most firms have been able to raise the required amount of funding, demonstrating that market liquidity remains sufficient to meet the needs of businesses.

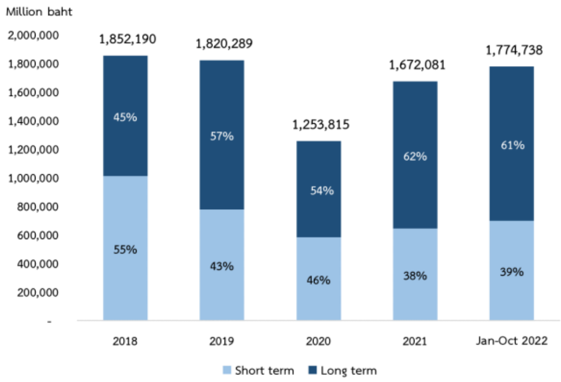
During January – October 2022, issuance of long-term bonds increased by 23 percent compared to the same period of last year. The increase was evident in all credit rating groups, bringing the total value of outstanding corporate bonds in October 2022 up 9.52 percent from the end of 2021 (Figure 9). Newly issued bonds also have longer maturity on average in order to benefit from lower funding costs before anticipated policy rate rises (Figure 10), while overall credit spread between corporate and government bonds has fallen (Figure 11).

Figure 9: Total value of outstanding corporate bonds by credit rating



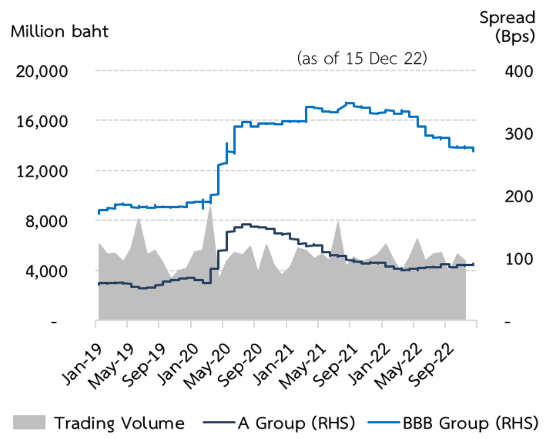
Note: include only locally-issued bonds denominated in Thai baht, excluding those issued by state-owned enterprises.
Source: SEC

Figure 10: Total value of corporate bond issuance



Note: include only locally-issued bonds denominated in Thai baht, excluding those issued by state-owned enterprises.
Source: SEC

Figure 11: Credit spreads and corporate bond trading volume



Source: ThaiBMA

Corporate bond issuers are concentrated in the financial sector (24 percent), with the top two being commercial banks that issue bonds to raise capital and non-banks that raise funds for working capital and debt repayment.

In terms of **use of proceeds**, investment grade issuers primarily issue bonds to raise working capital and to rollover existing debts, while non-investment grade issuers would issue high-yield bonds that are secured to attain investors' confidence and use proceeds for repayment of existing debt. Over 52 percent of high-yield bond issuers are in the real estate sector that is relatively more fragile, but their bondholders mostly consist of high-net-worth investors. Following the pandemic, high-yield bonds issuers have had to extend their bond maturity date by 1 – 2 years, with many extending their due date by more than once, as they are unable to rollover the maturing debt which are often unrated.

As of the end of October 2022, 16 issuers have sought to extend the tenor of their bonds (40 issues) with total outstanding value of 14,538 million baht (0.32 percent of total bonds outstanding). Over 62 percent of these issuers are property development firms. The value of bonds with extended maturity has declined slightly from 2021 (17,827 million baht) as some of these bonds were redeemed.

Nevertheless, **default risk has declined**, as reflected by a fall in the number of credit rating downgrades from 28 companies in 2021 to 15 companies in January – October 2022, most of which are in the telecommunications sector. In addition, the SEC had set out to monitor the debt repayment prospects of issuers rated BBB+ and below 3 months in advance of the maturity date in order to prepare for any potential default. Bond representatives have also been instructed to perform their duties in protecting the interests of bondholders in the event of a breach or default, as well as to act as central contact point for bondholders in such an event.

As economic recovery gains traction and most business sectors are able to manage liquidity and raise funds as per usual, **the risk of default in the corporate bond market has subsided and so has the need for assistance from the Corporate Bond Stabilization Fund (BSF) to maintain corporate bond market stability**. Therefore, the BSF Steering Committee has decided to close off applications for assistance from 31 December 2022 onwards (details via QR code – TH version only)

The closing of applications for assistance from the BSF

Global financial market conditions are likely to be volatile and tighter going forward due to rapid, decisive, and synchronized rate hikes by major central banks to combat inflation. **The reduction in liquidity could raise the risk of a market dysfunction that might spillover to the Thai financial market. The BOT, the SEC and the OIC have been jointly monitoring and assessing risks and to prepare preventive measures to maintain confidence and market functioning.** For example, exploring measures to curb systemic risk and enhancing the assessment of key risk scenarios to assess risk to the Thai financial market.

Chapter 4: Measures to safeguard financial stability going forward

To safeguard financial stability going forward will not only require targeted financial measures to help vulnerable borrowers and preparation of both preventive and corrective measures to address risks from large corporates (SiCorps) or risk events resulted in market dysfunction, but also measures to address two important sustainability issues as follows.

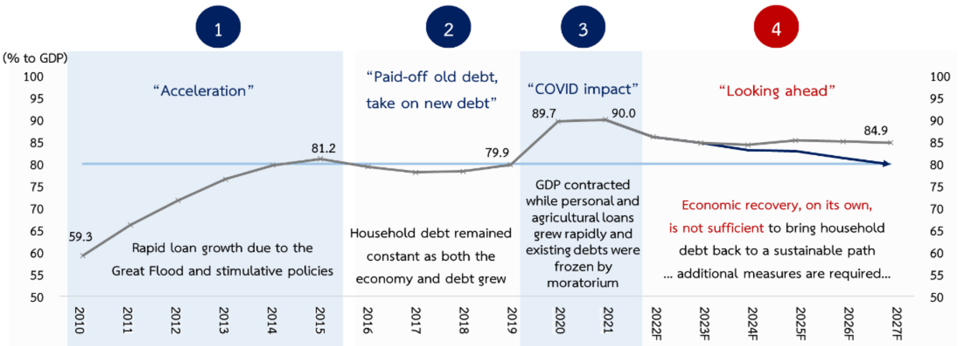
4.1 Policy direction for sustainably addressing the structural issue of household debt

Household debt has been a structural problem of the Thai economy for a long time and was further exacerbated by the COVID-19 pandemic. Back in 2010, household debt to GDP stood at 60 percent. 12 years later the ratio has risen to 90 percent in 2022Q1, among the highest in the world. According to a study by Lombardi, Mohanty and Shim (2017) [12], the negative effect of household debt on long-term economic growth intensifies as the level of household debt exceeds 80 percent of GDP. (Figure 12)

However, not all household debt is worrying. Debts of concern primarily consist of loans for consumption that do not generate income and have relatively high monthly installments because they are short-term debt with high interest rates[13]. The cause for concern is from **(1) the behavior of households** that take on debt and unable to pay them due to overspending and low savings, **(2) stimulus from the public and private sectors** that encourage households spending, and **(3) the role of financial institutions** in encouraging access to financial products and credit that result in households being stuck in debt traps.

Therefore, the problem of household debt, if allowed to persist, would hinder economic recovery, and pose risks to the financial stability in the future. **Addressing the problem will not only require incomes to increase as the economy recovers, but also need additional measures in accordance with the principle "comprehensive – appropriate and balanced – with cooperation from al lstakeholders"** to sustainably address the structural problem of household debt in all stages i.e. before debt creation, while being in debt, and when encountering a problem with debt. Currently, the BOT is putting together a directional paper on household debt to facilitate public understanding of the problem in order to correctly address the root cause, and to reduce risk to financial stability going forward.

Figure 12: Target for household debt reduction in the long-term



Source: BOT

[12] Lombardi, Marco, Mohanty, Madhusudan and Shim, Ilhyock (2017): "The real effects of household debt in the short and long run", BIS Working Paper, no 607.

[13] Financial Stability Report 2021: Chapter 2: Financial vulnerabilities of the household and corporate sectors

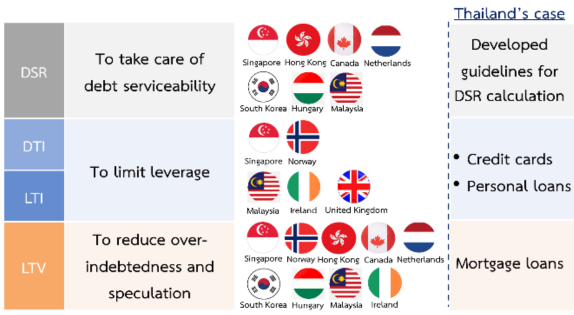
To raise the quality of new debt creation, lenders, borrowers and regulators must work together to reach a solution. Lenders should lend responsibly while borrowers must also borrow responsibly, taking into account the ability to service debt and the availability of buffers to cushion shocks that may occur in the future.

Many international regulators have applied macroprudential policies (MaPP) to the issuance of new debt through various measures depending on their specific purpose. For example, (1) measures on debt repayment burden, such as the debt service ratio (DSR) which assesses the amount of debt to be paid in installments in relation to the borrower's monthly income, (2) measures on overall debt burden, namely, the debt-to-income (DTI) measure which assesses the borrower's total amount of outstanding debt against their annual income or the loan-to-income (LTI) measure which assesses the borrower's credit line against income, and (3) measures to address speculative behaviors e.g. the loan-to-value (LTV) measure.

In Thailand's case, the BOT has previously introduced macroprudential measures to (1) reduce household over-indebtedness by setting credit limits on credit cards and personal loans under supervision in accordance with the borrower's level of income, and (2) prevent excessive speculation in the real estate market through the LTV measure. Additionally, in 2019, banks, SFIs and non-banks had jointly developed a standard for DSR calculation for new loans. (Figure 13)

To address the issue of household debt more sustainably going forward, the BOT is preparing additional macroprudential measures in relation to new debt creation, including the DSR and responsible lending guidelines. In this regard, the timing of implementation must be considered along with the borrowers' situation in the context of a gradual economic recovery to ensure that measures are effective and do not trigger unintended consequences, such as reducing credit access or pushing borrowers towards informal debt. In 2023, the BOT will be releasing a consultation paper to provide details of such policies and seek comments from all stakeholders, which will ensure that the measures will be appropriate for curbing new debt.

Figure 13: International examples of MaPP in relation to household debt



Source: BOT

4.2 Transitioning towards environmental sustainability under the new Financial Landscape

Thailand is facing sustainability challenges in all dimensions: governance, social and environmental. In particular, effects of climate change have been more rapid and severe than expected which, if left untended, could pose risks to the financial system in two ways. (1) Physical risk – direct impact from environmental changes, such as effects of natural disasters and droughts on business sectors, tourism and agricultural produce, which on a large scale could cause widespread disruption to economic activities like the Great Flood in 2011. (2) Transition risk – indirect impact from businesses being unable to adapt to regulatory changes and consumer demand in relation to environmental sustainability, which could affect costs and competitiveness, and hence overall stability.

In this regard, the BOT strives to support the financial sector in adapting to changes and serving the needs of businesses in their transition towards environmental sustainability, in accordance with goals of carbon neutrality and net zero greenhouse gas emission, while taking into consideration readiness of different sectors. In August 2022, the BOT released a directional paper on transitioning towards environmental sustainability under the new Thai Financial Landscape, which outlines 5 building blocks for driving changes in such a way ensuring that the timing and speed of implementation enables a smooth transition (details in Figure 14). As a starting point, the BOT and the Ministry of Finance have introduced SME transformation loans under the Emergency Decree on the Provision of Assistance and Rehabilitation of Business Operators Impacted by the Spread of the COVID-19 Pandemic B.E. 2564 (2021), to provide low-interest loans to SMEs to enhance their business potential and support transition toward digital technology, innovation, and environmental sustainability.

Moreover, many central banks have begun to apply climate stress testing exercise to assess impact on debtors. Although, this is challenging and will require development of appropriate analytical tools and data infrastructure, in which the BOT is currently exploring high-impact climate scenarios for undertaking climate stress tests in the future.

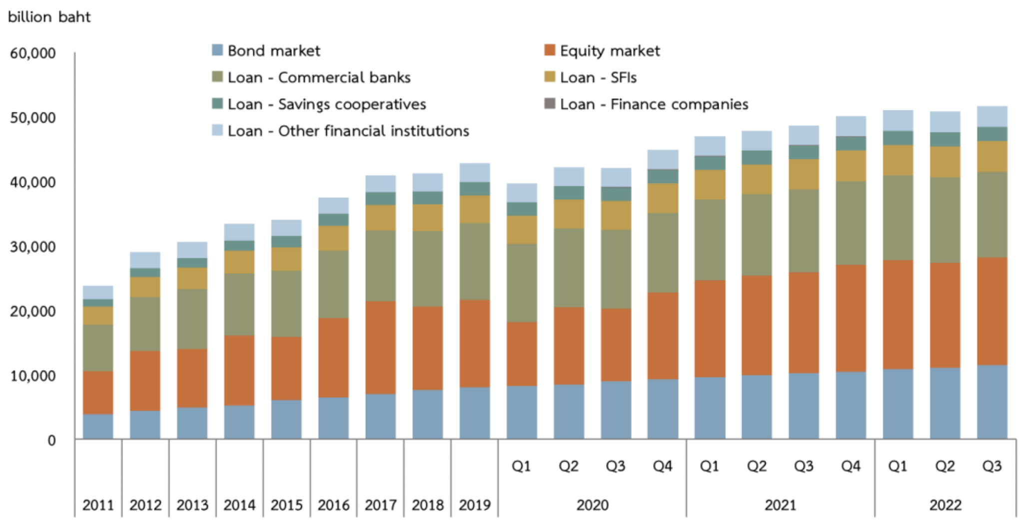
Importantly, collective effort from the public sector, the corporate sector and the financial sector will be required to steer the economy towards a smooth and timely transition with limited negative impacts. The BOT is ready to cooperate closely with all sectors to ensure that Thailand achieves its environmental, social and economic goals.

Figure 14: The BOT's 5 building blocks for promoting environmental sustainability

Products and services: Adjusting financial institutions' business operations to promote green financial products and services	Issue policy guidelines for financial institutions to internalize environmental considerations into their business operations. • **Corporate sector** can access products and services to support transition. • **Financial institutions** gain trust from customers and investors.
Taxonomy: classification of economic activities based on their environmental impact	Create a common standard for classifying activities in conjunction with public agencies, private sector and financial institutions. • **Corporate sector** can make transition plan in accordance with sustainability goals. • **Financial sector** can allocate resources appropriately.
Data and Disclosure: accessible data platforms and disclosure standards for financial institutions	Collaborate with public agencies, private sector and financial institutions to integrate and develop a green data platform from 2022 Q4 onwards. • **All sectors** have access to data for decision making.
Incentives: supporting and incentivizing environmental actions	Encourage financial institutions, businesses and consumers to recognize the urgent need for transition and help to reduce associated cost burdens. • **Corporate sector** (especially SMEs) have access to capital at reasonable costs and can promptly make the transition.
Capacity building: enhancing the skills of personnel in the financial sector	Develop courses with both local and international experts. • **Corporate sector** receives useful and relevant advice.

Annex: Thailand's financial system

1. The Thai financial system: Types of funding



2. Financial institutions system: Number and asset size of major financial institutions

Type of financial institutions	2022 Q3[P]	
	Number	% of total assets of financial institutions
Depository corporations		
Commercial banks	29	48.5
Specialized financial institutions (SFIs)	6	15.5
Savings cooperatives [1/]	1,403	6.7
Finance companies	4	0.0
Money market mutual funds (MMFs)	48	0.7
Other financial corporations		
Mutual funds (excluding MMFs)	1,874	8.2
Insurance companies	74	8.5
Leasing companies	739	1.9
Credit card, personal loan and nano finance companies under regulation [2/3/]	91	2.7
Provident funds	364	2.6
Government pension fund	1	2.3
Asset management companies	65	0.8
Securities companies	49	1.1
Other non-depository financial institutions	763	0.4

Notes: [P] Preliminary data

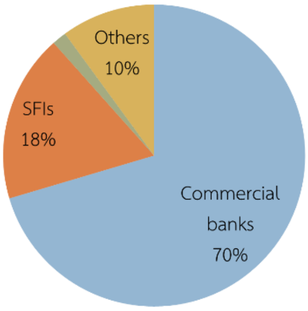
[1] Savings cooperatives data do not include credit unions.

[2] Credit cards and personal loans under supervision include financial institutions that operate with licenses issued by the BOT and satisfy the definition of financial institutions in accordance with the IMF Monetary and Financial Statistics Manual (2000).

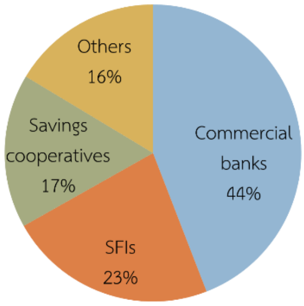
[3] There were 38 nano-finance operators as of 2022Q3.

3. Loan: corporate and consumer loan (as of 2022Q3)

Share of corporate loan market

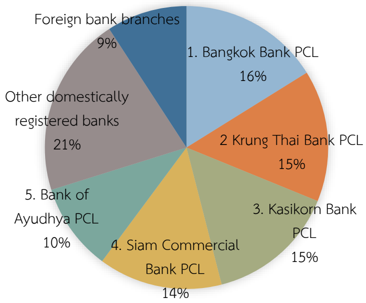


Share of consumer loan market

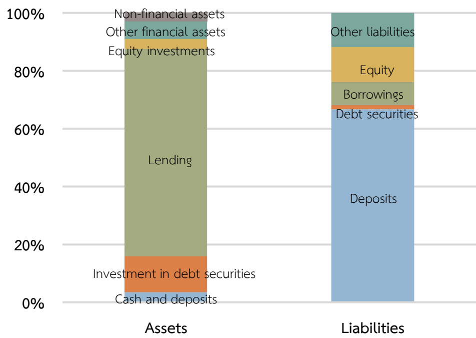


4. Structure of the commercial banking system (as of 2022Q3)

Share of commercial banks
by asset size

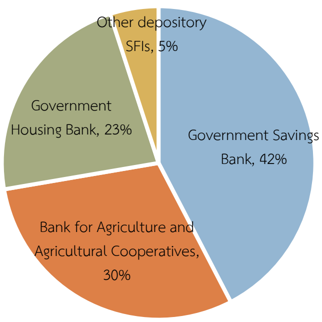


Asset and liability structure
of commercial banks

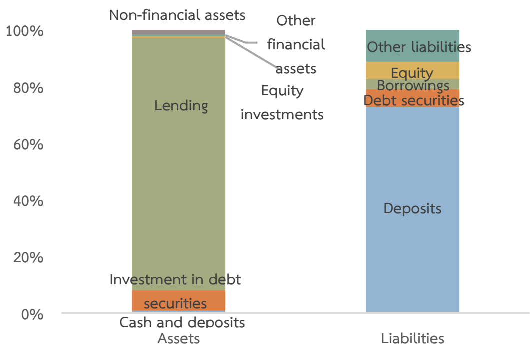


5. Structure of deposit-taking specialized financial institutions (as of 2022Q3)

Share of depository SFIs
by asset size



Asset and liability structure
of SFIs



6. Indicators of external stability

Indicator	Thailand	Malaysia	South Korea	Argentina	Turkey
1. International reserves in months of imports (months)	6.1	6.3	6.7	4.2	1.9
2. External debt (percent of GDP)	37.9	70.0	38.0	56.6	54.2

Source: CEIC latest data during 2021 to 2022Q3

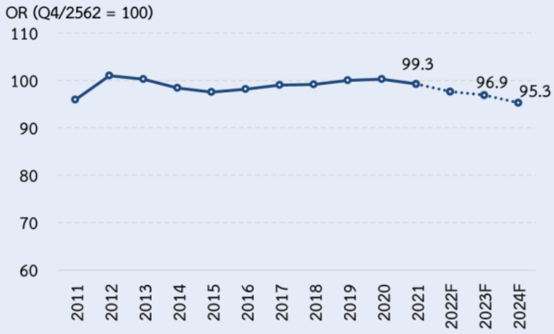
Box 1: Assessment of risks in the commercial real estate sector

The commercial real estate (CRE) sector, particularly office buildings and retail space, was among the sectors affected by the COVID-19 pandemic as the trends of work from anywhere (WFA) and online shopping reduced rental demand. The occupancy rate (OR) at the end of 2022 is expected to decrease from 2019 levels by 10 percent and 2 percent for office and retail space respectively. Meanwhile, **the supply of office and retail space is likely to increase going forward**. During 2023 – 2024, rental space is expected to increase by over 6.5 percent, **raising concerns about oversupply in the CRE sector**. Nevertheless, the BOT assessed that **risks to financial stability from oversupply remain low under conditions of continued economic recovery and no additional large-scale projects**.

The BOT estimated that retail properties should be able to maintain OR above 90% over the next 1 – 2 years, since tenants and landlords are able to adapt to new lifestyles, for example, by increasing rental space for restaurants, turning shops into exhibition spaces, and delaying new projects during the pandemic (Figure 1). On the other hand, **office buildings are at higher risk of oversupply** given that office space is expected to increase by more than 420,000 and 390,000 square meters in 2023 and 2024 respectively. As a result, **OR could be expected to fall substantially** by 7 and 10 percent at the end of those years in comparison to the end of 2021 (Figure 2). **However, the fallen OR is still much higher than the breakeven point[14] of 60 percent and therefore should not have a broad impact on debt serviceability of property developers, as long as the Thai economy continues to recover.**

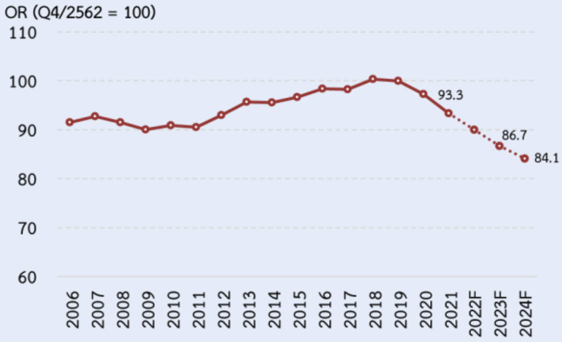
Given higher risk of oversupply in the office building segment, the BOT has further analyzed the competitiveness and linkages to the financial system of (1) operators of newly opened office buildings and (2) operators of old office buildings, which have different funding channels and competitiveness.

Figure 1: Occupancy index for retail space in Bangkok, at end of year



Note: F indicates forecasted data
Source: CBRE, calculations by the BOT

Figure 2: Occupancy index for office space in Bangkok, at end of year



Note: F indicates forecasted data
Source: CBRE, calculations by the BOT

1) Office buildings that are new or about to be open in 1 – 2 years are highly competitive, because they can better serve the needs of clients, especially large and multinational companies. Of 21 such buildings, almost all are located within the central business district (CBD) near sky train or subway stations, are certified in terms of environmental issues and hygiene (LEED WELL and TREES) and have additional facilities such as retail space. Although the rental rate per square meter is higher than older buildings, but nowadays businesses can reduce rental space based on the WFA concept and can better control rental expenses. Hence, there are already reservations for buildings to be opened in the next 1 – 2

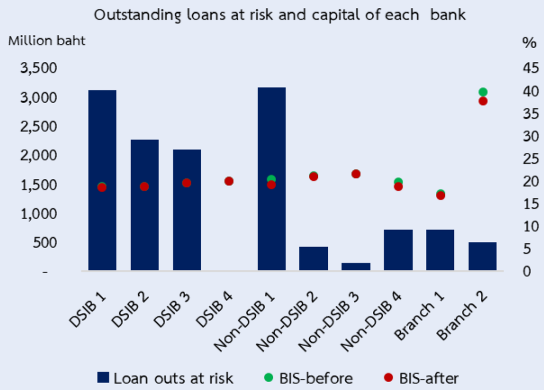
[14] The average breakeven occupancy rate for office buildings, as assessed by real estate experts, is 60 percent for new buildings (taking into account financing costs) and 30 – 40 percent for old buildings without debt burdens.

Box 1: Assessment of risks in the commercial real estate sector (continued)

years. Furthermore, large projects can gradually open in phases, with a degree of flexibility in making adjustments to reflex changing conditions. **Most property firms that develop large-scale mega-projects rely on financing from own funds and/or foreign borrowings, and therefore are less interconnected to the financial system.** In an adverse event where the OR of a significant office building[15] falls to 60 percent, 2 out of 6 companies would be at risk of default. However, these companies have small amount of loans from financial institutions and do not participate in corporate bond and equity markets.

2) 30 old office buildings are at risk of losing tenants to new buildings because most of them are not Grade A buildings[16] and do not have environmental certifications based on an assessment of the competitiveness of 43 old buildings with significant linkage to the financial system[17] in 5 areas, namely (1) the cost of remaining debt, (2) probability of tenants switching to newer buildings, (3) location, (4) building grade and (5) environmental certifications. Of these buildings, 9 are owned by juristic bodies while the rest are managed by property funds and real estate investment trusts (REITs). **However, they present limited risk to the financial system, both to financial institutions and investors in property funds and REITs.** In the adverse scenario that OR falls to 40 percent, 3 companies that are owners of privately-owned buildings could have problems servicing debt, although banks should have sufficient capital to absorb such losses (Figure 3), while buildings owned by property funds and REITs are still able to pay dividends, but at lower rates (Figure 4).

Figure 3: Adverse impact on banks in case of default by owners of old office buildings



Source: BOT

Figure 4: Adverse impact on dividend payments by property funds and REITs

Name	Market Cap (ลบ.)	OR	Dividend Yield		
			Current	OR 60%	OR 40%
REITPF1	7,611	90	8.1%	5.5%	3.3%
REITPF2	7,156	99	8.1%	3.9%	3.0%
REITPF3	5,903	92	4.0%	6.1%	5.1%
REITPF4	5,539	88	8.9%	6.1%	2.3%
REITPF5	4,949	89	8.0%	6.7%	3.6%
REITPF6	3,762	100	7.4%	2.3%	-0.6%
REITPF7	3,172	84	8.5%	2.8%	0.4%
REITPF8	2,641	71	4.4%	4.0%	0.9%
REITPF9	1,778	79	7.6%	4.3%	1.6%
REITPF10	1,040	74	5.8%	4.0%	1.4%
	43,550	(78% of all property funds and REITs)			

Note : Red indicates dividend returns lower than the average return of SET

Source: BOT

In conclusion, the prospect of oversupply is likely to have little impact on new office buildings with higher competitiveness and low interconnectedness to the financial system. Old buildings will see higher impact, but most have paid off their debts so impact on the financial system is limited. Nevertheless, changing of financing strategies for new properties still need to be monitored as domestic borrowings could become more attractive due to lower cost of funds compared to borrowings from abroad, which could increase interconnectedness to the financial system in the future.

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[15] Significant office buildings are projects with > 30,000 square meters and total exposure to loans, bonds, mutual funds and REITs > 2 billion baht.

[16] Grade A buildings have the following properties: (1) located in CBD area, (2) < 500 meters from BTS/MRT stations, (3) room height > 2.7 meters, (4) at least 1,000 square meters of free space without columns/walls, and other properties such as air conditioning systems, building management, common area, building age, parking, etc.

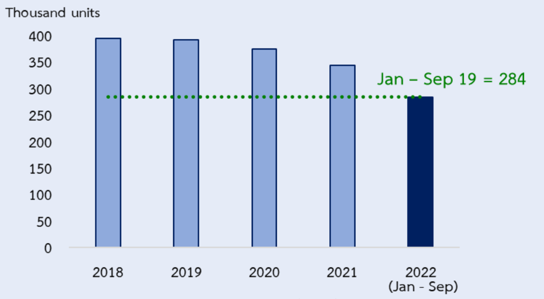
[17] Old buildings with significant linkage to the financial system are those whose owners have > 2 billion baht in outstanding bank loans or managed under property funds or REITs. The total rental area of all 43 buildings is 1.4 million square meters or 14.5 percent of all available office space at the end of 2022.

Box 2: Expiration of the easing of loan-to-value (LTV) measure for housing and housing-related loans

The BOT has temporarily eased the LTV measure from 20 October 2021 to 31 December 2022 to support economic activities and employment through the property sector, which has lots of related businesses and large amount of employment. The relaxation encouraged people with purchasing power to take on housing loans, especially the upper-middle income group less impacted by COVID-19 that can take on additional debt.

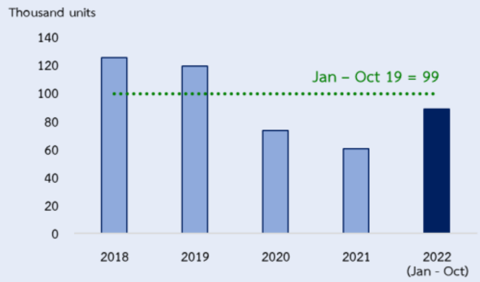
This year, the Thai economy has been recovering steadily with property and property-related sectors benefitting in terms of both demand and supply. During the first 9 months of 2022, transfers of residential property has risen to 282,648 units, close to the pre-COVID-19 level of 284,334 units (Figure 1). During the first 10 months of 2022, the number of new residential properties for sale totaled 88,332 units, close to the pre-COVID-19 level of 99,210 units (Figure 2). **In the context of such recovery, the easing of the LTV measure should be allowed to expire in accordance with the overall direction to gradually normalize financial policies as the economy recovers.**

Figure 1: Number of registered transfers of residential property across the country



Source: Real Estate Information Center (REIC), calculations by the BOT

Figure 2: Number of new residential properties for sale (Bangkok and vicinity)



Source: Agency for Real Estate Affairs (AREA), calculations by the BOT

The BOT has assessed that the measure's expiration would not hinder home ownership, as the relaxation only affect those who took on mortgages worth more than 10 million baht or has two or more contracts, which constitute a small portion of the market. While the majority (82 percent of accounts and 71 percent of mortgage value) **consists of first mortgage contracts under 10 million baht, for which the measure is already quite accommodative** (Figure 3), with LTV of 100 percent and additional loans for housing expenses of no more than 10 percent.

Figure 3: the LTV measure

LTV measure vs relaxation

	value < 10 THBmn	value ≥ 10 THBmn
First housing loan contract	≤ 100% +top-up ≤ 10%	≤ 90% (relaxed ≤ 100%)
Second housing loan contract	≤ 80 – 90% (relaxed ≤ 100%)	≤ 80% (relaxed ≤ 100%)
Third and subsequent housing loan contracts	≤ 70% (relaxed ≤ 100%)	

Moreover, the LTV measure helps to alleviate concerns of credit rating agencies on the quality of financial institutions' residential mortgage portfolios (borrowers with at least 2 contracts are more likely to default), **promote financial discipline** (requires down payment for a purchase of high-value or second properties), **prevent over-indebtedness** (cannot borrow more than property value), **and reduce risk of speculation in the property sector that may affect financial stability**. Although there is currently no sign of speculation, the number of new accounts and value of new mortgage loans has now exceeded pre-COVID-19 levels for residential properties worth more than 5 million baht, and especially those greater than 10 million baht. **Therefore, normalizing the measure should curb potential systemic risks going forward, as originally intended in 2019.**

Box 3: Evaluation of commercial banks' debt restructuring measures for small and medium enterprises (SMEs) during the COVID-19 pandemic

Since 2020, household and corporate borrowers have experienced a deterioration in their ability to service debt and have become more financially fragile due to the broad impact of the COVID-19 pandemic on the Thai economy. To alleviate the impact, the BOT has encouraged financial institutions to provide assistance to affected debtors, especially through debt restructuring in accordance with stage of recovery and debt serviceability of each borrower. Hence, over the past 2 years, banks have continuously restructured debt, particularly for vulnerable SMEs and retail borrowers.

Assessment of SME[18] debt restructuring by banks over the course of the pandemic found that **assistance focused on debt restructuring for SMEs affected by the COVID-19 pandemic, such as those in accommodations and real estate sectors, in which 95 percent had good repayment history prior to the outbreak[19], and not to prop up the classification of previously fragile debtors**. On the other hand, for SMEs with poor repayment history prior to the pandemic, whose debts have been restructured, 85 percent of their credit classifications indicated significant increase in credit risk (stage 2) or non-performing loans (stage 3) (Figure 1).

Figure 1: Banks' classification of SME debtors as of June 2022

Debtors with restructured debt (% of number of debtors)	Stage 1	Stage 2 & Stage 3	Total
Good repayment history prior to COVID-19	60% (63%)	35% (37%)	95% (100%)
Poor repayment history prior to COVID-19	0.8% (15%)	4.2% (85%)	5% (100%)
Total	61% (61%)	39% (39%)	100% (100%)

In terms of effectiveness, **most SMEs that received assistance from banks through debt restructuring were able to resume normal debt repayment**. Only 4 – 7 percent of SMEs with restructured debt became non-performing within 6 months in each period (Figure 2), which is relatively low considering the severe impact of COVID-19 on the Thai economy. The default rate is lowest during the first half of 2020 due to implementation of a broad-based debt moratorium. In addition, the default rate after the 12th month increased but at a lower rate.

Figure 2: Effectiveness of SME debt restructuring by Thai banks during March 2020 – June 2022

Restructuring period	Proportion of restructured SME accounts to total number of SME accounts	% Ever Default within 6 months (by number of accounts)
First half of 2020	9%	4%
Second half of 2020	5%	7%
First half of 2021	3%	7%
Second half of 2021	5%	6%

[18] Corporates with credit lines of ≤ 500 million baht with each commercial bank, as of June 2022.

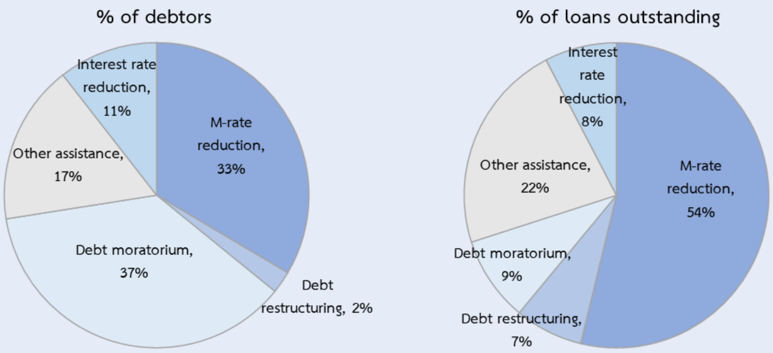
[19] Debtors with good repayment history prior to the COVID-19 outbreak are debtors whose loans were classified as performing (stage 1) for at least half of the time (19 months) during January 2017 – February 2020.

Box 4: Reduction of the rate of contribution to the Financial Institutions Development Fund (FIDF) during the COVID-19 pandemic

The reduction in the FIDF fee is one of the financial measures implemented to reduce costs to financial institutions so that they can in turn support debtors during the COVID-19 pandemic. The BOT and the FIDF reduced the fee from 0.46 percent of deposits per year to 0.23 percent for 2 years (2020 – 2021), and then extended the reduction for another year until the end of 2022.

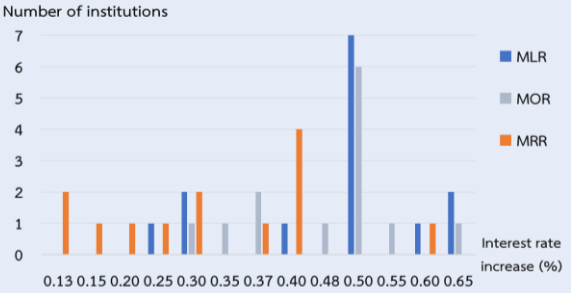
As a result of the measure, financial institutions' financial costs were reduced by approximately 105 billion baht (35 billion baht per year on average), allowing them to pass on assistance to more than 9 million people and businesses through the adjustment of interest rates referencing M-rates (MLR MOR and MRR). The reduced M-rates by 0.4 percent per year immediately lowered the interest burden borne by borrowers, helping more than half of total outstanding loans in the banking system (10.7 trillion baht) [20], which included other forms of assistance, such as debt moratorium, debt restructuring, cuts in fixed interest rates and fees, etc. (Figure 1)

Figure 1: Summary of assistance by type[21]



Under clear signs of broad-based recovery, financial institutions remain sound and can support fragile debtors going forward without need of the FIDF fee reduction. The BOT is therefore adjusting the FIDF fee back to 0.46 percent per year from 2023 onwards, which will help to reduce the FIDF's debt according to target and reduce unnecessary burdens on the economic and financial system in the long term. The decision is in line with other financial measures that will gradually be allowed to expire or normalized, along with a gradual increase in the policy rate. While this could lead to an increase in M-rates, most banks have been cautious in passing on higher costs to mitigate impact on households and businesses, as reflected by adjustments in M-rates following the first rate hike on 10 August 2022. Banks have mainly increased the MLR for large corporate loans but were more cautious in adjusting the MRR (Figure 2) to reduce impact on SMEs and retail borrowers. Furthermore, targeted measures are still in place to help fragile debtors in accordance with their situation and debt serviceability.

Figure 2: Number of financial institutions adjusting M-rates



[20] Number of assisted debtors may be double counted if a debtor receives more than 1 type of assistance or the same assistance more than once.

[21] Actual data on assistance provided during 2020 – 2022Q3 and planned projections during 2022Q4.

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