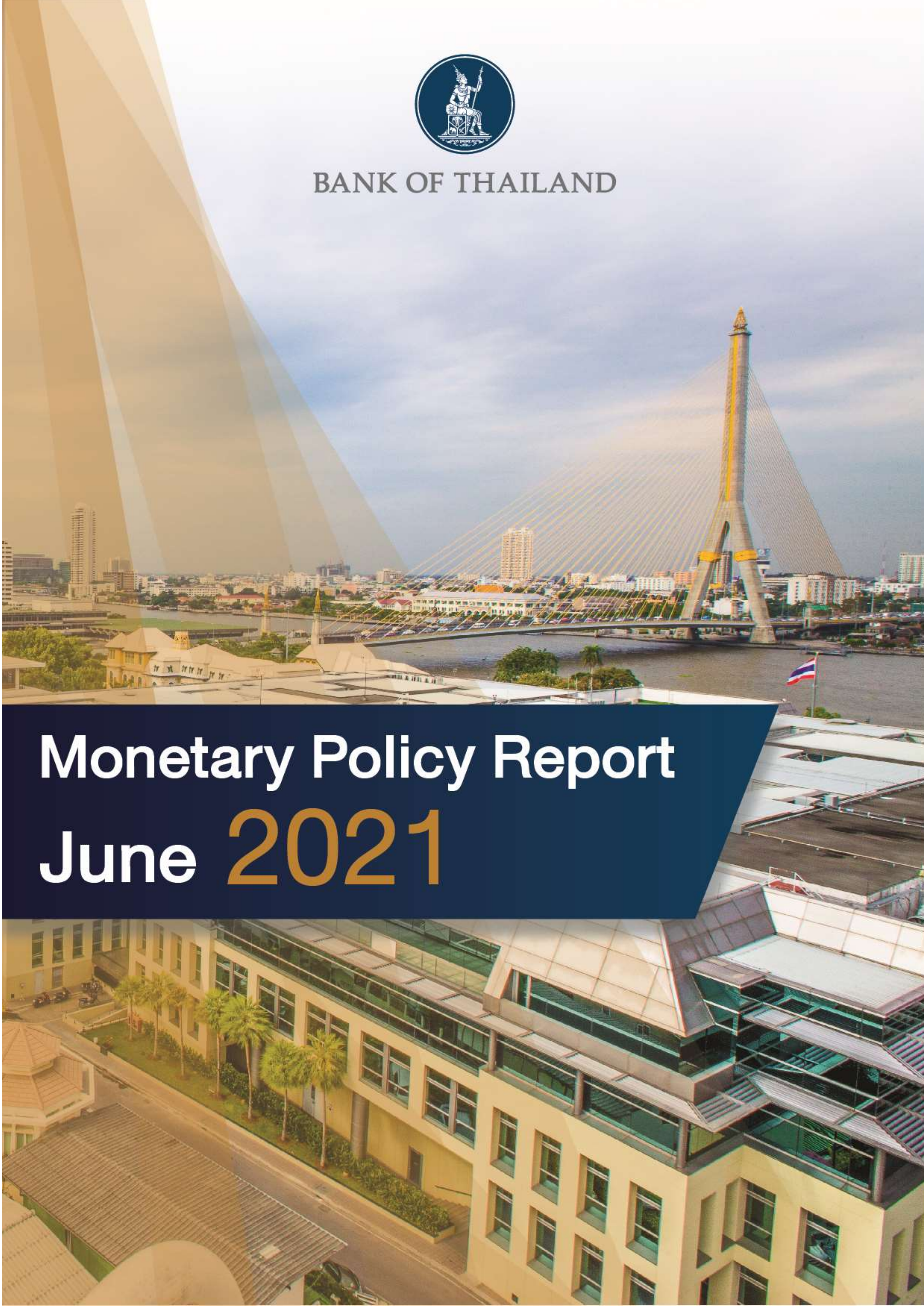
BANK OF THAILAND

Monetary Policy Report June 2021



Monetary Policy Report

The *Monetary Policy Report* is prepared quarterly by staff of the Bank of Thailand with the approval of the Monetary Policy Committee (MPC). It serves two purposes: (1) to communicate to the public the MPC's consideration and rationales for the conduct of monetary policy, and (2) to present the latest set of economic and inflation forecasts, based on which the monetary policy decisions were made.

The Monetary Policy Committee
June 2021

Mr. Sethaput Suthiwartnarueput	Chairman
Mr. Mathee Supapongse	Vice Chairman
Mr. Paiboon Kittisrikangwan	Member
Mr. Kanit Sangsubhan	Member
Mr. Rapee Sucharitakul	Member
Mr. Somchai Jitsuchon	Member
Mr. Subhak Siwaraksa	Member

Monetary Policy in Thailand

Monetary Policy Committee

Under the Bank of Thailand Act, the Monetary Policy Committee (MPC) comprises the governor and two deputy governors, as well as four distinguished external members representing various sectors of the economy, with the aim of ensuring that monetary policy decisions are effective and transparent.

Monetary Policy Objective

The MPC implements monetary policy under the flexible inflation targeting regime. While regarding medium-term price stability as its primary objective, the MPC also aims at supporting sustainable, full-potential economic growth and preserving financial stability, attributing to long-term price stability and economic sustainability

Monetary Policy Target

On December 22, 2020, the Cabinet approved the monetary policy target for 2021, which was mutually agreed between the MPC and the Minister of Finance to set the headline inflation within the range of 1–3 percent as the target for the medium-term horizon and for 2021.

In the event that average headline inflation in the past 12 months or a forecast of average headline inflation over 12 months ahead breaches the target range, the MPC shall send an open letter to the Minister of Finance to explain reasons for the breach of the target range, together with measures taken and estimated time to bring inflation back to the target. In addition, the MPC will write an additional open letter to the Minister of Finance every six months if average headline inflation based on the above criteria remains outside the target range.

Monetary Policy Instrument

The MPC utilizes the 1-day bilateral repurchase transaction rate as the policy interest rate to signal the monetary policy stance.

Evaluation of Economic Conditions and Forecasts

The Bank of Thailand takes into account information from all sources, the macroeconomic model, data from each economic sector, as well as surveys of large enterprises, together with small and medium-sized enterprises from all over the country, and various financial institutions to ensure that economic evaluations and forecasts are accurate and cover all aspects, both at the macro and micro levels.

Monetary Policy Communication

Recognizing the importance of monetary policy communication to the public, the MPC employs various channels of communication, both in Thai and English, such as (1) organizing a press statement at 14:00 on the day of the Committee meeting, (2) publishing edited minutes of the MPC meeting two weeks after the meeting, and (3) publishing the *Monetary Policy Report* every quarter

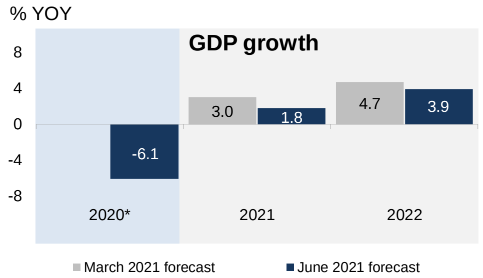
Content

Note: Data in this report is as of June 22, 2021 (one day before the Monetary Policy Committee meeting)

Key Highlights of the Monetary Policy Report, June 2021

The Thai economic recovery would be slower and more uneven. The risks of the Thai economic outlook underperforming the baseline projection would be significant due to (1) protracted outbreaks, (2) smaller-than-expected government spending on economic relief and restoration, and (3) further deterioration of business and household balance sheets. The most important issue facing the Thai economy at the present was the procurement and distribution of appropriate vaccines adequately and timely. The implementation of various measures should be swiftly pushed forward to support the economy through these difficult times.

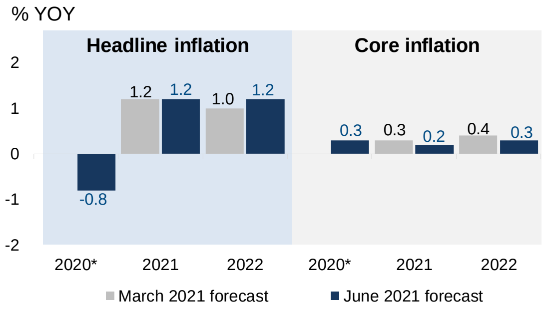
Economic growth projection



Note *Outturn
Source NESDB, estimated by Bank of Thailand

- **The economy would expand by 1.8 percent in 2021 due to the impacts of the third-wave outbreak on domestic spending and foreign tourist figures. Nonetheless, there were tailwinds from additional fiscal stimulus, the progress of vaccine procurement, and strong merchandise exports.**
- **In 2022, the economy was projected to expand by 3.9 percent thanks to continued fiscal stimulus and the relaxation of containment measures that would support economic activities and tourism.**

Inflation Projection

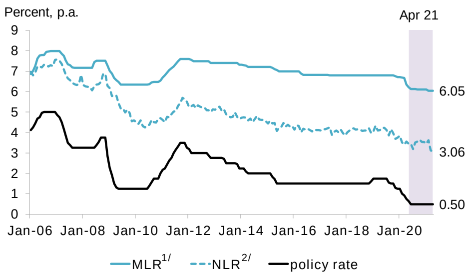


Note *Outturn
Source Ministry of Commerce, estimated by Bank of Thailand

- **Headline inflation rose temporarily in the second quarter of 2021 due to the low-base effect of crude oil prices last year. Meanwhile, reflation in advanced economies and supply constraints would have limited spillovers to domestic inflation.**
- **Headline inflation would remain within the target range throughout the forecast horizon.**

Financial conditions

Lending rates of commercial banks

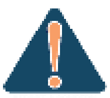


Note: [1/] Averages of 14 commercial banks' reference loan rates
[2/] New Loan Rate (NLR)
Source: Bank of Thailand (as of April 2021)

- **Benchmark lending rates of commercial banks remained low. New loan rates (NLR) declined.**
- **Financial measures including the special loan facility, asset warehousing, and additional measures by the Bank of Thailand to assist borrowers would provide liquidity and reduce debt burden in a more targeted manner.**

Financial stability

Financial institution, external, and fiscal stability remained robust.



Financial positions of businesses and households became more fragile due to recurring outbreaks.

- **Businesses and households have elevated debt level while their debt servicing capability deteriorated, warranting close monitoring.**

- **The recovery became more uneven across different economic sectors, particularly SMEs and tourism-related businesses, causing recovery in labor markets to be W-shaped and slower than in the past.**

Executive Summary

Monetary Policy Conduct in the Second Quarter of 2021

At the meetings on May 5 and June 23, 2021, the Committee voted unanimously to maintain the policy rate at 0.50 percent. The Committee assessed that Thailand's economic recovery would be slower and more uneven compared with the previous assessment. The Thai economy was projected to expand by 1.8 in 2021 and 3.9 percent in 2022. The third-wave outbreak would affect the recovery in foreign tourist figures and domestic demand. Labor markets became more fragile and might pick up more slowly than in the past, especially the services sector and among the self-employed. Additional fiscal support and strong merchandise export growth would only partially offset the impact of the third-wave outbreak. Headline inflation rose temporarily in the second quarter of 2021 due mainly to supply-side factors. Meanwhile, rising inflation in advanced economies and supply constraints-including the shortages of manufacturing inputs as well as higher costs of transportation and raw material-would have limited passthrough to domestic inflation. Medium-term inflation expectations remained well-anchored within the target range.

Key assumptions underpinning the latest economic forecasts were as follows. First, the third-wave outbreak would be well contained by the beginning the fourth quarter of 2021. Second, at least 100 million vaccine doses would be procured and distributed within 2021 as planned, leading to the attainment of herd immunity by the first half of 2022. Third, additional fiscal stimulus would be forthcoming under the new Emergency Decree that authorized 500 billion baht of government borrowing. **However, the Thai economic outlook would still face significant uncertainties and downside risks,** including (1) prolonged outbreaks and virus mutations, both the existing and new variants, (2) smaller-than-expected government spending on economic relief and restoration, (3) further deterioration in business balance sheets from the new wave, especially those in the services sector, leading to widespread business closures and lay-offs, and (4) higher-than-expected impact of supply disruptions and higher shipping costs on Thailand's manufacturing and export sectors.

The Committee viewed that the most important issue facing the Thai economy at the present was the procurement and distribution of appropriate vaccines in an adequate and timely manner. Financial measures should be expedited, particularly the special loan facility and debt restructuring. These would provide more targeted assistance to the affected businesses and households than cutting the policy rate. The policy rate was already at a low level and cutting it might not lend much support to the economic recovery. The Committee thus voted to maintain the policy rate and would stand ready to use the limited policy space at the most effective timing. The Committee also viewed that all parties should swiftly push forward the implementation of various measures to support the economy, especially over the next six months where uncertainties would remain high.

Assessment of the Economic and Financial Outlook as the Basis for Policy Formulation

1. Global Economy

The global economy continued to recover on the back of improving private consumption and services sector, especially in the U.S. after containment measures were relaxed and financial aids were granted to the low-income. Meanwhile, Asian exports exhibited strong growth. Looking ahead, Thailand's trading partner economies would continue to recover thanks to the abatement of the outbreak, the progress of vaccine distribution in many countries, as well as the additional fiscal stimulus measures and accomodative monetary policies supportive of the recovery. **The Committee expected trading partner economies to expand 6.0 percent in 2021 and 4.1 percent in 2022.** Nonetheless, downside risks to trading partners' growth increased. **New waves of infections and virus mutations could prompt governments to tighten containment measures again** and could also reduce vaccine efficacy. This would delay herd immunity attainment in each country and undermine consumer confidence. In addition, the global shortages of manufacturing inputs could be more severe and more protracted than expected.

Governments worldwide continued to implement monetary and fiscal measures to alleviate the impacts of the pandemic. The U.S. government announced measures to rebuild the U.S. economy over the longer term, namely, the 2.25 trillion U.S. dollars American Jobs Plan and the 1.8 trillion U.S. dollars American Families Plan. Central banks around the world continued to maintain accommodative monetary policy stances by keeping policy rates low and conducting quantitative easing. Nevertheless, the Federal Reserve and the Bank of England signaled potential shifts in monetary policy stances if economic growth remained robust and inflation returned to the target sustainably. Global financial conditions could therefore start tightening in the period ahead.

2. Financial Conditions and Financial Stability

Overall financial conditions in Thailand remained accommodative. Short-term interest rates in financial markets remained at low levels consistent with the policy rate. Medium- and long-term Thai government bond yields fell in tandem with the long-term U.S. treasury bond yields and higher foreign investors' demand for Thai government bonds. However, the new Emergency Decree authorizing 500 billion baht of government borrowing led to a slight increase in the long-term government bond yields due to an anticipation of greater bond supply. Benchmark lending rates of commercial banks remained low and new loan rates (NLR) declined particularly for larger-sized loans. On exchange rates, the baht against the U.S. dollar and the effective exchange rate continued to depreciate from the previous quarter due to (1) the third-wave outbreak in Thailand and (2) the stronger U.S. dollar driven by the signaling of the Federal Reserve of potential faster-than-expected policy rate hikes. Nevertheless, the Committee would continue to closely monitor developments in the foreign exchange market and capital flows, while continuously expedite the new foreign exchange ecosystem in Thailand.

The Thai financial system remained vulnerable due to the impact of the third-wave outbreak that delayed the recovery and increased uncertainties. Weak balance sheets and debt servicing capabilities of households and businesses were exacerbated by the third-wave outbreak. In the period ahead, risks posed by the highly uncertain recovery and the pandemic would remain. Households and businesses would therefore need continued support from fiscal and financial measures to alleviate the impacts. Their balance sheets and debt servicing capabilities warranted close monitoring, especially during the phase-outs of support measures.

3. Economic and Inflation Outlook

The Thai economy was projected to expand 1.8 percent in 2021 due to the more prolonged and severe third-wave outbreak that affected domestic spending and foreign tourist figures. Nevertheless, additional fiscal stimulus from the new Emergency Decree, clearer plans for vaccine procurement and distribution, as well as strong merchandise export growth on the back of trading partners' economies would help the Thai economy to avoid a sharp slowdown. **Growth would pick up and expand 3.9 percent in 2022** underpinned by continuing support from government measures. Furthermore, herd immunity in Thailand was expected to be achieved within the first half of 2022, facilitating a gradual resumption in economic activities and increasing foreign tourist admissions in 2022.

Merchandise export value was expected to post solid gain at 17.3 percent in 2021 and 4.9 percent in 2022 following much stronger-than-expected outturns in the first quarter of 2021. Looking ahead, merchandise exports would see robust expansion in tandem with trading partners' economic growth. However, global supply constraints such as the shortage of freight containers, higher costs of transportation and raw materials, and the shortage of electronic components could have some impacts on Thai merchandise exports going forward.

Exports of services would continue contracting and slowly recover. Foreign tourist figures were revised down to 0.7 million in 2021 and 10 million in 2022. This was on account of the new wave of the

COVID-19 outbreak and virus mutations abroad and in Thailand, which prompted some countries to maintain international travel restrictions. Thailand would also be unable to relax quarantine requirements for travelers arriving from abroad.

The current account balance would record a deficit of 1.5 billion U.S. dollars in 2021 due to lower foreign tourist figures, as well as higher transport costs and oil prices. **For 2022, the current account surplus would be smaller than the previous assessment,** recording 12 billion U.S. dollars due in line with a decline in tourism receipts due to lower foreign tourist figures.

Private consumption would gradually recover in the latter half of 2021. Despite being restrained in the first half of 2021 from the new outbreak and more stringent containment measures, private consumption was expected to gradually recover in the second half of the year thanks to additional government relief and stimulus measures. Progress in vaccine distribution would partly contribute to improving consumer confidence, leading to a recovery in tourism and services sector spending in 2022.

Private investment recovery would be sustained, growing 7.0 percent in 2021 and 6.0 percent in 2022 in line with the stronger export growth. The third-wave outbreak held back private investment somewhat during the first half of 2021 with investments in large infrastructure projects declining slightly. Despite that, private investment would pick up in the second half of 2021 driven by strong export growth and gradual upturn in private consumption.

The risks of the Thai economic outlook underperforming the baseline projection would be significant. First, protracted outbreaks and virus mutations from both the existing and new variants could reduce vaccine efficacy while prolonging and intensifying the pandemic. These could lead to a public health crisis, affect domestic spending and delay the re-opening plan to admit foreign tourists. Second, government spending on economic relief and restoration could be lower than expected if the projects under the new Emergency Decree faced approval delays or low disbursement rates. Third, balance sheets of businesses could be exacerbated by the new outbreak, especially those in the services sector leading to widespread business closures and lay-offs. Dismissed workers could be unemployed for extended periods and eventually give up finding jobs. Further deterioration in business and household balance sheets would thus impinge on economic activities and cause a rise in debt defaults. Fourth, supply disruption and higher shipping costs may have more impacts on Thailand's manufacturing and export sectors than expected.

Headline inflation was projected to be 1.2 percent in both 2021 and 2022. For 2021, inflationary pressure would rise on account of supply-side factors. Energy prices increased in tandem with the rise in global crude oil prices, although the government measure to reduce electricity bills temporarily eased some of the price pressures. For 2022, headline inflation would be higher than previously assessed as the effects of measures to reduce electricity bills dissipate. Headline inflation would remain within the target range throughout the forecast horizon. Core inflation was revised down to 0.2 percent in 2021 and 0.3 percent in 2022 given that demand-pull inflationary pressure would be subdued and recover more slowly following recurring outbreaks.

1. The Global Economy

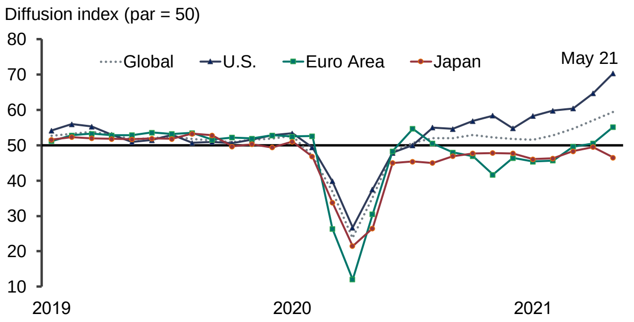
The global economy continued to recover, driven by improving private consumption and services sector, especially in the U.S. where COVID-19 containment measures were relaxed and financial aids were granted to the low-income. The global economic recovery was also driven in part by strong exports growth in Asia where the impact of the new waves of outbreak were still limited. However, the economic outlook of Thailand's trading partners faced higher risks stemming from the new outbreak and virus mutations, as well as potentially severe and prolonged supply disruption.

In the first quarter of 2021, economic recoveries among advanced economies diverged. The U.S. economy registered stronger-than-expected growth driven mainly by private consumption. This was partly due to the relaxation of containment measures after vaccination became more widespread and the 1,400 U.S. dollar stimulus checks paid to the low-income. Meanwhile, the euro area and Japan continued to contract as the resurgence of COVID-19 cases prompted the governments to tighten containment measures, affecting the recovery of domestic demand.

Looking ahead, the growth of advanced economies would improve especially for the U.S and the euro area, underpinned by strong private consumption and the resumption of services sector activities (Chart 1.1). Containment measures were gradually relaxed following declines in new COVID-19 cases and higher vaccination rates. The improved outlook was also attributed to better exports in tandem with the global economic recovery. Meanwhile, the Japanese economy faced challenges from the new severe wave of COVID-19 outbreak that prompted the extension of containment measures through to the end of the second quarter. This would continue to weigh on the already subdued private consumption despite benefits from strong export growth in line with global demand. The shortage of semiconductors would likely intensify due to production constraints with output being insufficient to meet surging demand. Semiconductor shortage would also be exacerbated by freight container shortage resulting in longer transport times. Nevertheless, it was expected that the shortage of semiconductor would mainly impact automobile production (Chart 1.2) and could possibly last until the end of 2021.

Chart 1.1 Services sector activities picked up in the U.S. and the euro area following the relaxation of containment measures.

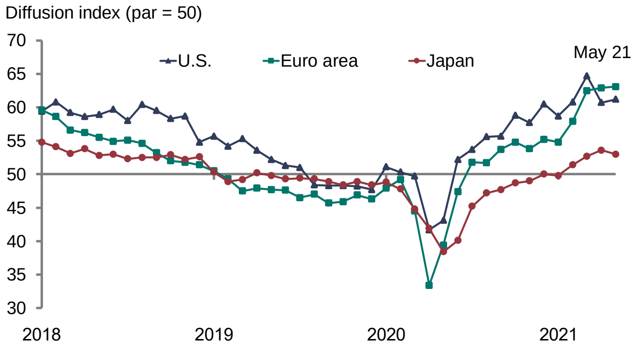
Purchasing Manager Index (PMI): Services Business Activity



Sources: CEIC, JP Morgan

Chart 1.2 The manufacturing sector in major advanced economies would be affected by prolonged input shortages.

Manufacturing Purchasing Manager Index (PMI)

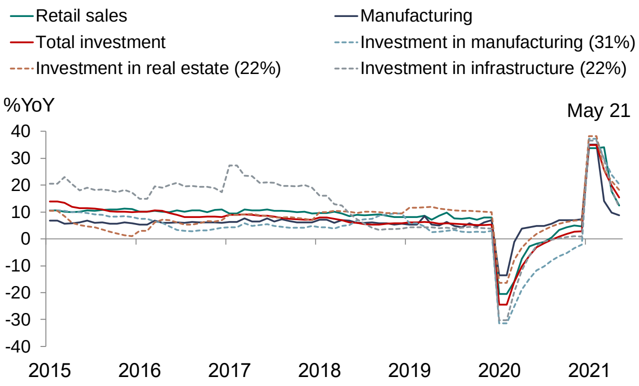


Sources: Bloomberg and Eurostat

China and other Asian economies would continue to expand on the back of strong export growth. The new wave of COVID-19 outbreak in Asia became more widespread but would primarily affect services sector activities.

The Chinese economy exhibited strong growth in the first quarter of 2021 driven by continued expansion of domestic demand in line with the improving outbreak situation, although growth had slowed down somewhat following the acceleration in manufacturing and construction activities in the earlier period (Chart 1.3). **Looking ahead, the Chinese economy would continue to expand** thanks to strong export growth in line with the global economic recovery. This would benefit the manufacturing sector and domestic demand, enabling a strong expansion exceeding pre-pandemic levels. Another supporting factor underpinning China's economic outlook was quickly rising vaccination rates as a result of government incentives to encourage residents to get vaccinated.

Chart 1.3 Chinese economic indicators continued expanding.

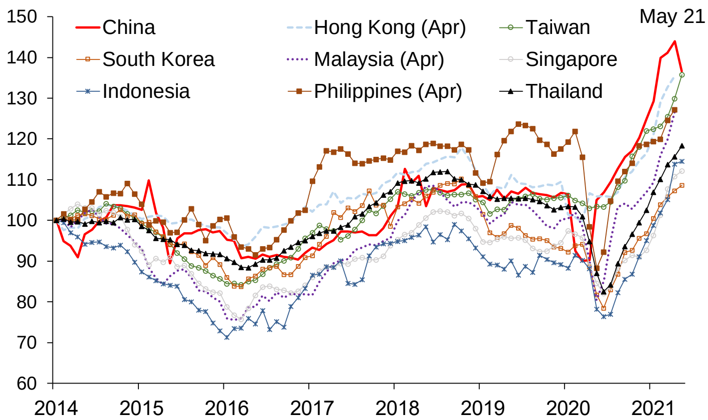


Note: ( ) denotes share to total investment
Source: CEIC

Asian economies (excluding Japan and China) continued to expand in the first quarter of 2021 driven mainly by strong exports growth especially electronic products and biomedical equipments, in line with a continued recovery in global demand (Chart 1.4). However, private consumption in many Asian countries were affected by more-prolonged-than-expected measures to contain the new outbreak. In the period ahead, Asian economies would continue expand on the back of strong export growth, especially exports to the U.S., Europe, and China. Meanwhile, consumption was expected to recover at a gradual pace given that the number of COVID-19 cases remained high in some countries such as Taiwan and Malaysia. Infections had prompted governments to tighten containment measures and led to the postponement of the Singapore-Hong Kong travel bubble which would impact the recovery of the services sectors.

Chart 1.4 Overall Asian exports continued to expand in line with the global trade recovery, despite some export slowdown in China due to previous acceleration.

Export Value Index, 3-month moving average, seasonally adjusted (Jan 2014 = 100)



Source: CEIC

Governments worldwide continued to implement fiscal measures to alleviate the impact of COVID-19 and restore economies after the abatement of the pandemic.

Governments in many countries deployed additional fiscal stimulus to alleviate the economic impact of the COVID-19 pandemic. Most of the budgets were allocated toward employment retention, assisting small and medium-sized enterprises (SMEs), and public health. These included the new economic stimulus measures rolled out in Malaysia (Pemerkasa Plus, 40 billion ringgits or about 2.8% of GDP), Italy (40 billion euros or about 2.5% of GDP), France (26 billion euros or about 1.1% of GDP), and Korea (14.9 trillion won or about 0.8% of GDP). Meanwhile, the U.S. government announced **measures to rebuild the U.S. economy over the longer term** that were focused on infrastructure investment and upgrading labor productivity. These measures were the 2.25 trillion U.S. dollar American Jobs Plan (about 10.5% of GDP) and the 1.8 trillion U.S. dollar American Families Plan (about 8.4% of GDP) currently being proposed to the U.S. Congress.

Central banks in major advanced economies continued to maintain accommodative monetary policies, including both low policy rates and quantitative easing. The Federal Reserve (Fed) maintained the purchases of government bonds and mortgage-backed securities in the amount of at least 120 billion U.S. dollars per month. However, the Fed started to signal that it would discuss the appropriate timing to taper quantitative easing if the U.S. economic data continued to indicate robust improvements. The European Central Bank (ECB) scaled up bond purchases under the Pandemic Emergency Purchase Program (PEPP) in the second quarter of 2021 to further ease financial conditions. The ECB also maintained bond purchases under the Asset Purchase Program (APP) in the amount of 20 billion euros per month while keeping its policy rate low. Similarly, the Bank of Japan (BOJ) continued to implement Quantitative and Qualitative Monetary Easing with Yield Curve Control. The Bank of England (BOE) maintained its policy rate and the asset purchase quantity at the meeting on 6 May 2021 but signaled that continued improvements in economic indicators and growing inflation concerns may necessitate monetary tightening.

Regional central banks maintained accommodative monetary policies, keeping policy rates at low levels to support recoveries in the period ahead amid high uncertainties.

The growth projections for Thailand's trading partners were revised up throughout the forecast period, but the balance of risks tilted further to the downside.

Trading partner economies were projected to register higher growth in 2021 and 2022 compared to the previous *Monetary Policy Report.* In the first half of 2021, pent-up demand turned out higher than expected, especially in the U.S. where 1,400 U.S dollar stimulus checks were granted to the low-income. In the euro area, private consumption and services sectors activities would recover better than expected in the second half of 2021 under the view that the COVID-19 situation in Europe would gradually unwind. The acceleration in vaccination progress of many countries and the stronger-than-expected growth of Asian exports would also provide additional growth momentum in 2021. For 2022, trading partner economies were projected to post stronger gains than previously assessed. This was because the effects of stimulus measures in the U.S. (Build Back Better) were greater than expected and had benefited exports of various countries, while the euro area saw improvements after containment measures were gradually relaxed in 2021. **The**

Committee thus revised up the projections of trading partners' growth to 6.0 percent in 2021 and 4.1 percent in 2022 (Table 1.1).

Table 1.1 Assumption on trading partners' growth

Annual change (%YoY)	Weight (%)	2020*	2021	2022
United States	20.4	-3.5	6.6 (5.9)	4.5 (4.0)
Euro area	9.2	-6.7	4.5 (4.3)	4.0 (3.2)
Japan	13.9	-4.7	2.5 (2.5)	2.6 (2.3)
China	18.1	2.3	8.4 (8.5)	5.2 (4.9)
Asia (excluding Japan and China)**	30.6	-4.6	6.0 (5.1)	4.0 (3.8)
Total***	100	-3.5	6.0 (5.5)	4.1 (3.8)

Note: *Outturn

**Weighted by 7 trading partners' shares in Thailand's exports in 2020, namely, Singapore (5.8%), Hong Kong (6.9%), Malaysia (5.3%), Taiwan (2.3%), Indonesia (4.7%), South Korea (2.6%), and Philippines (3.1%)

***Weighted by 13 trading partners' shares in Thailand's exports in 2020 (including the United Kingdom and Australia)

( ) as reported in Monetary Policy Report, March 2021

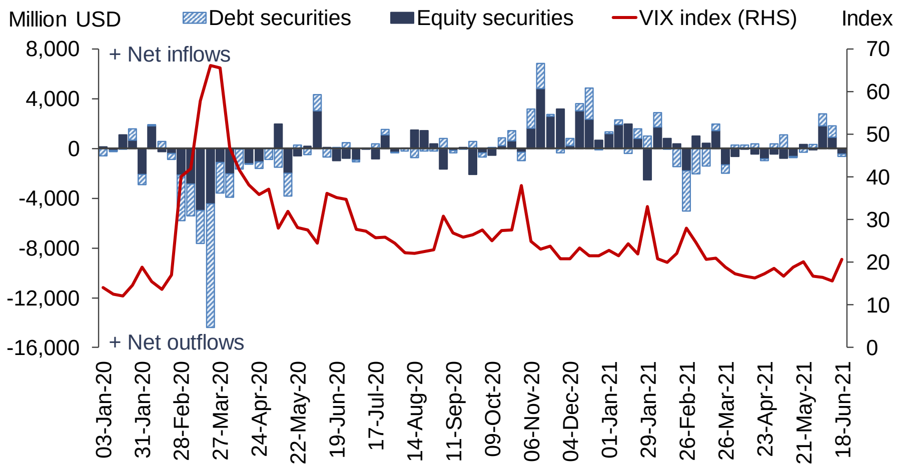
The Committee asssessed that the balance of risks to trading partners' growth tilted further to the downside due to the following. First, new waves of COVID-19 and virus mutations may prompt governments to reinstate lockdowns if the outbreak could not be contained. Mutations might also reduce vaccine efficacy, delay the attainment of herd immunity, and undermine consumer confidence. Second, the global shortages of manufacturing inputs could be more severe and protracted than expected. Third, central banks in advanced economies, especially the U.S., could tighten monetary policy sooner than expected, resulting in tighter overall financial conditions. This would exarcebate the situation in countries still grappling with the outbreak and could lead to debt defaults and credit rating downgrades. At the same time, **trading partner economies could still outperform the baseline forecasts** if (1) the COVID-19 pandemic subsided and vaccination was timelier than expected, (2) financial and fiscal stimulus measures of various countries provided larger-than-expected economic boost, (3) global trade recovered more than expected, and (4) international tourism recovered faster than expected, especially for advanced economies that were likely to attain herd immunity relatively sooner.

In the second quarter of 2021, capital flows began returning to emerging market bonds following the decline in U.S. government bond yields. There were some inflows into equities in June partly driven by the global economic recovery, vaccination progress, and accommodative monetary policies of central banks around the world.

Investors resumed investment in emerging market (EMs) bonds in the first two months of the second quarter of 2021 after a period of large outflows in the first quarter (Chart 1.5). Investor concerns subsided after U.S. government bond yields declined, reflected by the fall in the VIX[1/] index between April and May. However, there were continued outflows from equities partly due to concerns over reflation that could prompt the Fed to tighten monetary policy sooner, as well as concerns over the new waves of outbreak in many EMs. Nevertheless, the risks of severe EM asset sell-offs due to Fed tapering were lower than the Taper Tantrum period in 2013. This was because (1) the Fed would likely tighten monetary policy at a gradual pace and engage in forward-looking communications to minimize impacts on the global financial markets, and (2) the share of foreign investors in EM financial assets continued to decline over the years.

Chart 1.5 Capital inflows began returning to the emerging markets following the decline in US Treasury yields. There were some inflows into equities in June 2021.

Net capital inflows into EMs* and VIX index (weekly)



Note: * EMs include Thailand, Indonesia, India, South Africa, and Turkey
The VIX index measures market expectation of near term implied volatility based on S&P 500 index options

Source: Federal Reserve Economic Data (FRED) and Institute of International Finance (IIF)

In early June, foreign investors continued to increase investment in EM bonds and, to some extent, equities. This was due to the global economic recovery, vaccination progress in many countries, and accomodative monetary policies of central banks around the world. These factors improved investor confidence and risk appetite, reflected by the lower VIX index compared to the April-May period.

Looking ahead, capital flows in EMs would be highly volatile depending on several factors including, (1) future monetary policy directions of the U.S. and other major advanced economies, with investor concerns growing after the June 2021 Federal Open Market Committee (FOMC) meeting where sooner-than-expected monetary policy tightening was signaled, (2) the outlook of global recovery and inflation, especially developments in the U.S. labor markets, (3) the global COVID-19 vaccination progress, (4) global financial vulnerabilities from elevated levels of public and private sector debt leading to higher probabilities of defaults, and (5) re-escalating U.S.–China trade tensions.

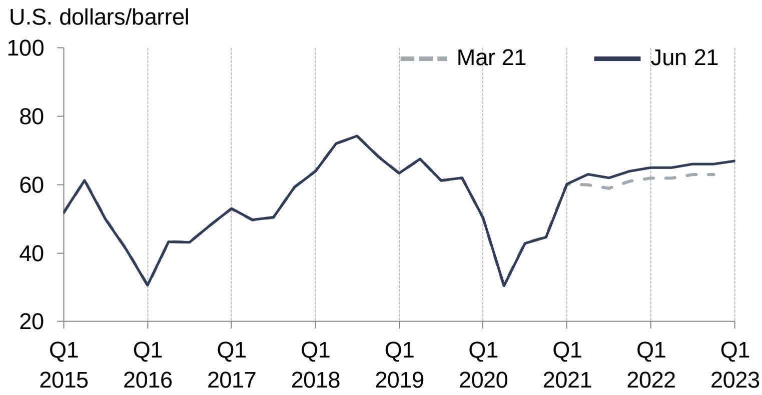
[1/] VIX Index measures stock market volatility using implied volatilities on S&P 500 options.

In the second quarter of 2021, Dubai crude oil prices rose from the previous three months due to the expected pick-up in oil demand in tandem with the global economic recovery, as well as the temporary decline in U.S. oil output after cyber-attacks on an oil pipeline.

Dubai crude oil prices rose from the previous three months in the second quarter of 2021 (Chart 1.6) due to **(1) the expected pick-up in oil demand in tandem with the global economic recovery** given better-than-expected outturns of key economic indicators in major advanced economies in the first quarter of 2021, together with the improving progress of vaccine distribution in many countries and the start of containment measures' easing, and **(2) temporary decline in U.S. oil output** after a major oil pipeline was shut down by cyber-attacks causing short-term disruptions to oil transport.

Chart 1.6 In the second quarter of 2021, Dubai crude oil prices rose from the previous three months due to an expected pick-up in oil demand in tandem with the global economic recovery, as well as the temporary decline in U.S. oil output after cyber-attacks on an oil pipeline.

Crude Oil Price Projection



The Committee revised up Dubai crude oil prices assumptions from 60.0 to 62.5 U.S. dollars per barrel in 2021 and from 62.3 to 65.5 U.S. dollars in 2022. The upward revision was mainly attributed to the prospects of a better-than-expected global economic recovery. However, in the period ahead, crude oil prices would increase at a more gradual pace due to supply side factors, namely, (1) the gradual increase in oil output from OPEC members and their allies after the end of production cut agreements, (2) higher Iranian oil output if the nuclear deal with the U.S. and related parties could be reached, and (3) the gradual increase in U.S. oil output if global oil prices continued to rise.

Risks to the outlook for Dubai crude oil prices remained balanced. Downside risks included (1) prolonged outbreak of COVID-19 and vaccination delays leading to lower oil demand, (2) re-escalating U.S.–China trade tensions, and (3) the failure of OPEC members and their allies to meet production cut agreements, while Iranian oil output might pick up sooner and more than expected. Upside risks included (1) more severe geopolitical risks in oil producing countries such as Iran, Saudi Arabia, and Libya, and (2) the U.S. president's policy of cutting fossil fuel subsidies that could raise production costs of U.S. oil producers.

2. The Thai Economy

2.1 Recent developments

The Thai economy recovered on the back of strong exports growth in the first quarter of 2021. However, the recovery was not as strong as expected due to the second-wave outbreak. Further, the severe and protracted third-wave outbreak would cause the Thai economy to slow down in the second quarter of 2021, particularly private consumption.

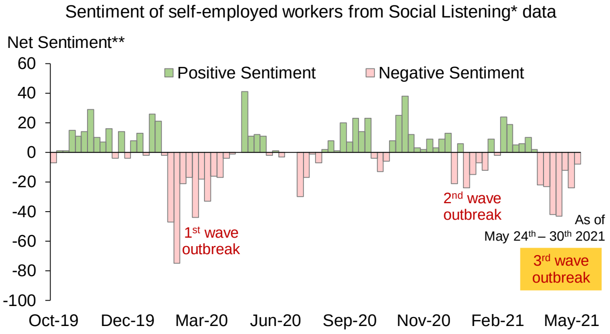
The Thai economy contracted 2.6 percent in the first quarter of 2021, an improvement from the 4.2 percent contraction in the previous quarter. Private consumption fell due to the second-wave outbreak which dampened confidence and household purchasing power. Stringent containment measures in some areas also held down economic activities, while government stimulus measures only shored up household purchasing power partially. The tourism sector continued to experience a large slump due to the current domestic tourism situation and international travel restrictions. Public consumption moderated somewhat. Nevertheless, merchandise exports registered strong growth across many goods thanks to the recovery in external demand of trading partners, especially the exports of automobile and automobile parts, electronics, processed agricultural goods, and other oil-related products such as plastics and chemicals. This resulted in improvements in the manufacturing sector and private investment. Public investment also expanded.

For the second quarter of 2021, latest economic indicators reflected that the Thai economy would expand for the first time since the COVID-19 pandemic driven by private consumption, private investment, exports, and public expenditure. **However, this was mainly due to the low-base effect from the same period last year. The Thai economy would slow down from the previous quarter due to the severe and protracted third-wave outbreak.** Private consumption contracted due to deteriorating confidence and a sharp decline in household purchasing power. Some vulnerable workers were negatively affected by reduced labor income or by being laid-off. These were despite the fact that government measures had already shored up purchasing power to some extent, and progress was being made in the government's vaccine procurement as well as the more pro-active approach to vaccine distribution. Exports of services remained low due to international travel restrictions and a more severe domestic outbreak. Meanwhile, merchandise exports continued to expand on the back of trading partners' recovery which benefited the manufacturing sector. Nonetheless, supply disruptions from the shortages of manufacturing inputs, especially semiconductors and containers, became more pronounced, albeit the impact on the manufacturing sector and exports were still limited. Private investment remained stable from the previous quarter.

Overall household income became more fragile due to the third-wave outbreak despite improvements in farm income.

Non-farm income became more fragile due to the third-wave outbreak, especially for the self-employed which accounts for one-third of the employment in non-agricultural sectors. Social listening[2/] data indicated that the self-employed were significantly affected by the third-wave outbreak (Chart 2.1). For employees in the social security system, which accounts for two-fifths of employment in non-agricultural sectors, **unemployment claims remained high** even as they were lower than during the first-wave outbreak**.** This was partly because some vulnerable workers had already been laid-off in the previous period (Chart 2.2).

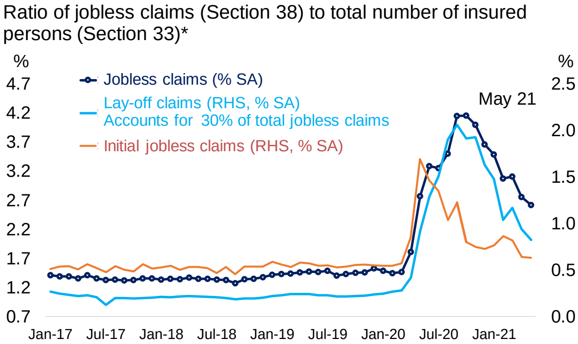
Chart 2.1 The self-employed were affected by the third-wave outbreak as reflected by the high level of negative sentiment from Social Listening data.



Note: * A process of collecting and analyzing online data posted on various social media and website based on the keywords related to being self-employed.
** Net sentiment = Number of positive posts - Number of negative posts

Source: Talkwalker Social Listening

Chart 2.2 Employees in the social security system were affected by the third-wave outbreak as reflected by high initial jobless claims.



Note: May 21: Total jobless claims of 303,984 consisted of 91,794 lay-off claims, 201,689 voluntary unemployment claims, and 10,501 contract termination claims

Source: Social Security Office and calculations by the Bank of Thailand

Farm income grew in tandem with higher agricultural prices, especially rubber, fruits, and palm oil. Rubber and durian prices increased on the back of recovering external demand, especially China. Palm oil prices rose from stock-ups by refineries to replenish their inventory of raw materials that had been low for some time. **Agricultural output increased slightly** on account of higher rice output due to heavier rainfall across all regions compared to last year.

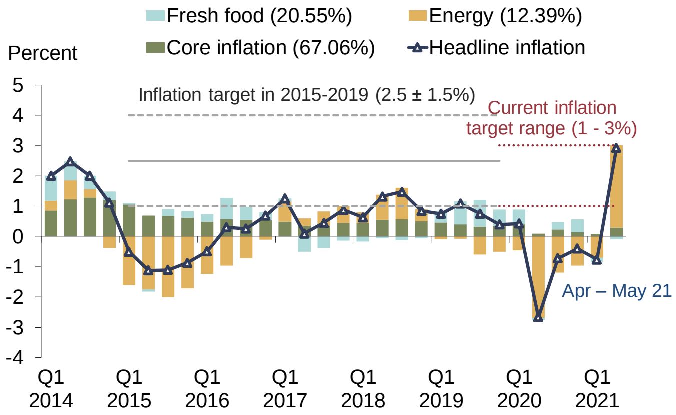
Headline and core inflation rose sharply in the second quarter of 2021. This was due to the temporary low-base effect of energy prices and water bills last year in line with crude oil prices and the government measures to lower the cost of living.

Headline inflation averaged 2.93 percent in the first two months of the second quarter of 2021, a marked increase from the -0.53 percent during the previous quarter (Chart 2.3). This was attributed to the low-base effect of energy prices last year when crude oil prices slumped and the government implemented electricity bill subsidies to lower of the cost of living in the wake of the first-wave outbreak. Meanwhile, fresh food prices registered a smaller contraction compared to the previous quarter due to higher fruit prices.

[2/] Social listening data is a leading indicator that evaluate positive or negative sentiments towards being self-employed based on information gathered from comments and opinions on various online platforms that has phrases relating to self-employment such as “Day-to-day jobs”, “Grab drivers”, and “E-commerce.”

Chart 2.3 Headline inflation increased from the previous quarter mainly due to the low-base effect of energy prices from the previous year.

Headline inflation and inflation target



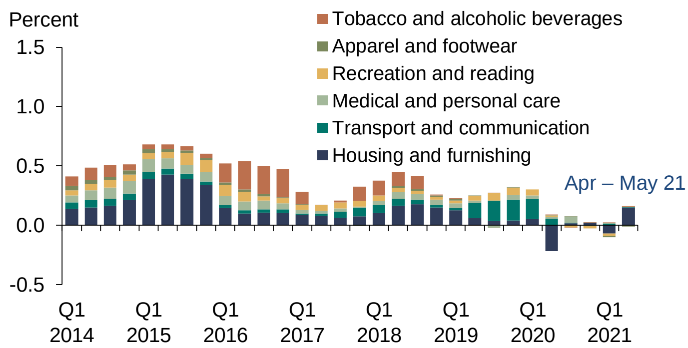
Note: ( ) denotes share in the consumer price basket

Source: Ministry of Commerce, calculated by the Bank of Thailand

Core inflation in the first two months of the second quarter of 2021 averaged 0.40 percent, an increase from 0.12 percent in the previous quarter. Core inflation in the non-food category increased from higher prices of housing and furnishing mainly due to the low-base effect of water bills last year from government subsidies to lower the cost of living in the wake of the first-wave outbreak (Chart 2.4). Meanwhile, core inflation in the food category increased from higher prices of prepared food and of seasoning and condiments (Chart 2.5). Core inflation in other categories saw small increases as demand-pull inflationary pressures remained low due to the impact of the third-wave outbreak.

Chart 2.4 Core inflation in the non-food category (70% of core inflation) increased due to the low-base effect of water bills during the same period last year in line with government subsidies to lower the cost of living.

Contribution* to core inflation in the non-food category

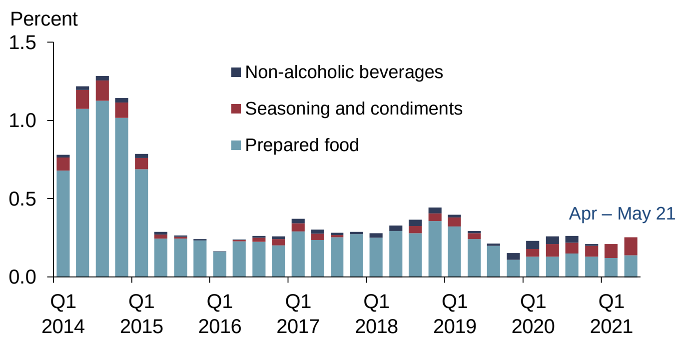


Note: *Contributions to core inflation decompose core inflation into inflation of each component within the core inflation basket, weighted by its corresponding share.

Source: Ministry of Commerce, calculated by the Bank of Thailand

Chart 2.5 Core inflation in the food category (30% of core inflation) increased from higher prices of prepared food and of seasoning and condiments.

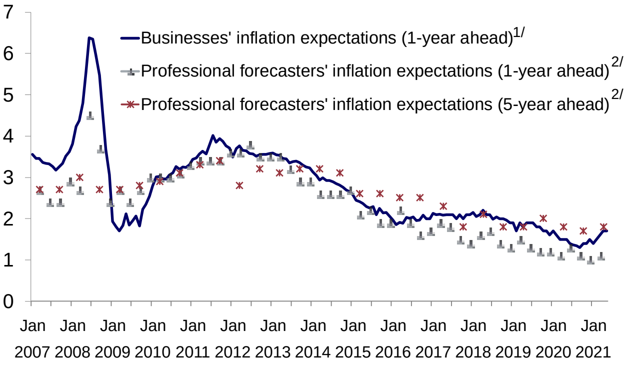
Contribution* to core inflation in the food category



Note: *Contributions to core inflation decompose core inflation into inflation of each component within the core inflation basket, weighted by its corresponding share.

Source: Ministry of Commerce, calculated by the Bank of Thailand

Chart 2.6 Short-term and long-term inflation expectation remained within the target range.



Source: [1/] Business Sentiment Survey (BSI) by the Bank of Thailand
[2/] Asia Pacific Consensus Forecast

Both the short-term and long-term inflation expectations remained within the target range. The short-term (one-year ahead) inflation expectations was 1.7 percent according to the survey of businesses in May 2021, while those based on the survey of households in April 2021 was 2.3 percent. The short-term inflation expectations according to the survey of professional forecasters in March 2021 was 1.1 percent. The long-term five-year ahead inflation expectations based on the survey of professional forecasts was 1.8 percent in April 2021 (Chart 2.6).

Table 2.1 Inflation

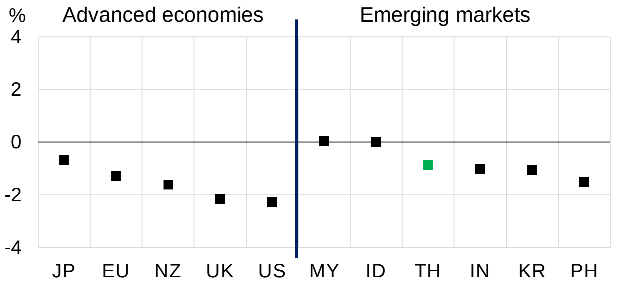
Annual percentage change	2019				2020				2021	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Apr - May
Headline Consumer Price Index (Headline CPI)	0.74	1.08	0.61	0.40	0.41	-2.67	-0.72	-0.39	-0.53	2.93
Core Consumer Price Index (Core CPI)	0.62	0.54	0.45	0.47	0.53	0.12	0.31	0.19	0.12	0.40
Fresh food	2.51	4.98	5.79	3.58	3.13	-0.34	1.55	2.65	-0.63	-0.16
Energy	-0.78	-0.67	-4.95	-4.09	-3.98	-22.86	-10.46	-8.44	-3.78	30.59

Source: Bureau of Trade and Economic Indices, Ministry of Commerce

The overall costs of financing through bank loans and bond markets remained low.

Chart 2.7 Thailand's real policy rate* remained low consistent with other emerging market (EM) economies.

Real policy rates*



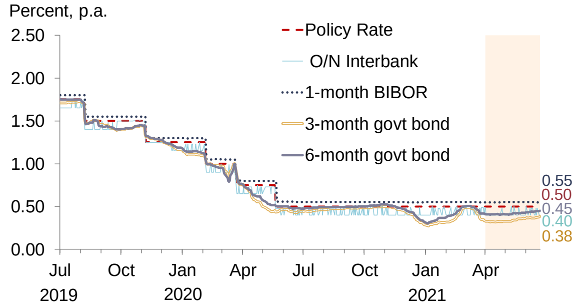
Note: *Calculated from policy rate as of Jun 22, 2021 subtracted by one-year-ahead inflation expectation according to the survey by Consensus Forecasts as of Jun 14, 2021

Sources: Bloomberg and Consensus Forecasts, calculated by the Bank of Thailand

During the second quarter of 2021, the overall costs of financing remained accommodative as indicated by the real policy rate in Thailand which remained low and consistent with other EMs (Chart 2.7). **Short-term interest rates in financial markets and short-term government bond yields remained at low levels close to the policy rate** (Chart 2.8). **Medium-term and long-term government bond yields declined** particularly in April 2021 (Chart 2.9). This was mainly due to the decline in U.S. Treasury yields after the Fed signaled that it would maintain accommodative monetary policy until the U.S. economy achieve a sustainable recovery. The decline in medium-term and long-term yields was also attributed to foreign investors returning to Thai government bonds to diversify portfolio amid low global yields. However, the new Emergency Decree led to a slight increase in the long-term Thai government bond yields in anticipation of increasing bond issuance. Nevertheless, the recent announcement by the Ministry of Finance regarding government bond issuance plans for the third quarter of 2021, which did not include bond issuance under the new Emergency Decree, saw government bond yields declined slightly, especially medium-term yields.

Chart 2.8 Short-term money market rates and short-term government bond yields remained at low levels close to the policy rate.

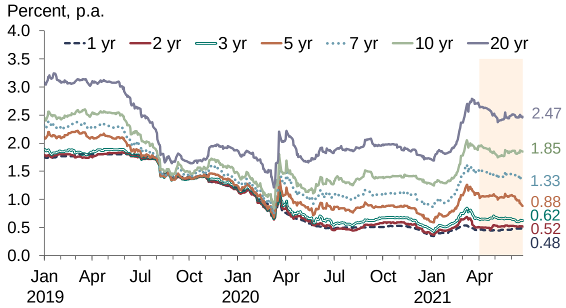
Short-term rates in financial markets



Sources: Bank of Thailand and Thai Bond Market Association (Thai BMA) (data as of June 22, 2021)

Chart 2.9 Medium-term and long-term government bond yields declined mainly due to the US Treasury yields. However, long-term yields increased somewhat after the preparation for the new Emergency Decree.

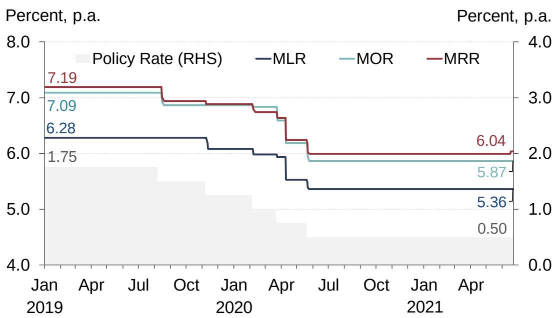
Government bond yields



Source: Thai Bond Market Association (Thai BMA) (data as of June 22, 2021)

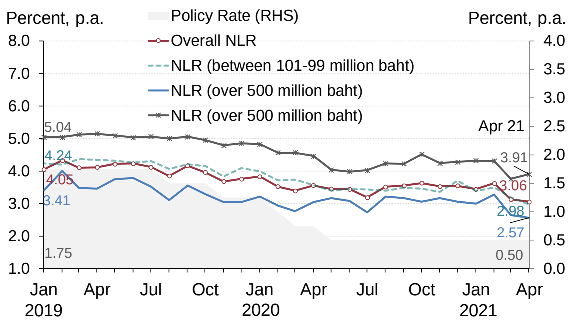
Overall private sector financing costs through commercial banks remained low as reflected by the benchmark lending rates of five largest commercial banks which were largely unchanged from the previous quarter. The MLR and MOR remained stable while the MRR edged up slightly (Chart 2.10). New loan rates (NLR)[3/] declined from the last quarter to 3.06 percent in April 2021 (Chart 2.11), especially for loan contracts larger than 100 million baht in the trade and manufacturing sectors. Meanwhile, **deposit rates** declined slightly from lower interest rates on fixed deposits offered by large commercial banks (Chart 2.12).

Chart 2.10 Commercial bank reference lending rates were largely unchanged from the previous quarter despite a slight increase in the MRR.



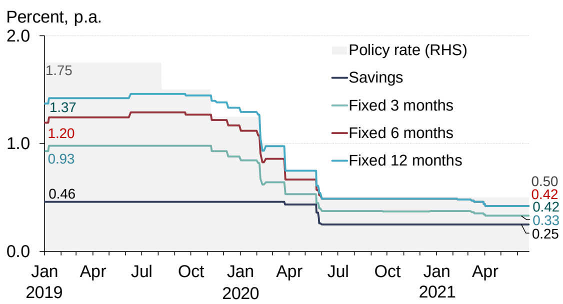
Note: Averages of 5 largest commercial banks' reference lending rates
Source: Bank of Thailand (data as of June 22, 2021)

Chart 2.11 Overall new loan rates (NLR) of commercial banks declined from the first quarter of 2021, especially large contract sizes.



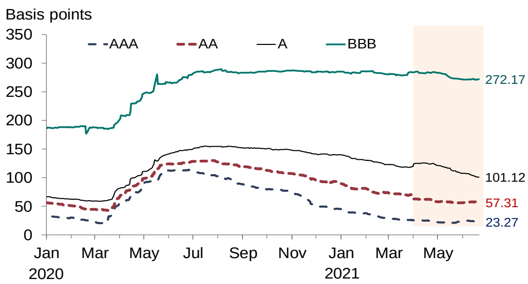
Source: Bank of Thailand (data as of June 22, 2021)

Chart 2.12 Commercial bank deposit rates declined slightly.



Note: Averages of 5 largest commercial banks' deposit rates
Source: Bank of Thailand (data as of June 22, 2021)

Chart 2.13 Corporate credit spreads with maturity of 3 years or less narrowed from the previous quarter across all credit ratings.



Sources: Bank of Thailand and Thai Bond Market Association (Thai BMA) (data as of June 22, 2021)

The credit spreads between corporate and government bonds with maturity of 3 years or less narrowed from the previous quarter across all credit ratings. In particular, the spread for AAA-rated bonds fell below the pre-pandemic level (Chart 2.13). However, the spread for BBB-rated bonds remained elevated. Overall, the private sector was still able to obtain financing through the bond market as normal.

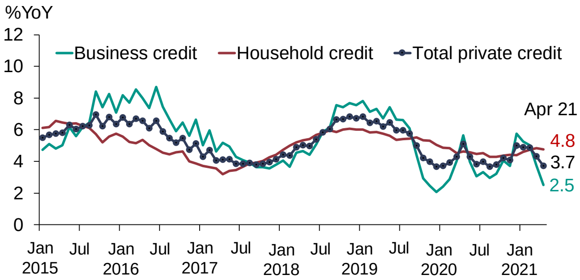
[3/] as well as loans to financial intermediaries, the public sector, and non-residents. Interest rates used in the calculation are the mid-rates between the lowest and highest rates in each contract.

Private sector financing slowed down mainly on account of business credit, while household credit continued to expand.

In April 2021, private sector loans and bond issuances (private credit)[4/] grew 3.7 percent from the same period last year (Chart 2.14). This was a continuous slow-down from the first quarter of 2021 due to **business loans and corporate bond issuances** which decelerated to 2.5 percent from the same period last year (Chart 2.15). Business loans slowed down across many sectors including chemical products, construction, textile and apparel, real estate, and trade. However, lending to export-related manufacturing businesses such as petroleum and electrical appliances saw a slight expansion in line with strong exports growth. Corporate bond issuances in April 2021 registered a small expansion of 1.4 percent from the same period last year. Bond issuance by businesses in the hotel and restaurant industry as well as other services sector continued to contract since the second quarter of 2020 in tandem with sluggish activities in the services sector. Nevertheless, corporate bond issuance in the real estate sector picked up as most property developers needed additional financing for debt repayment and working capital purposes. Bond issuance by logistics and warehousing businesses increased slightly.

Chart 2.14 Private credit slowed down mainly on account of business credit, while household credit continued to expand.

Growth of private credit

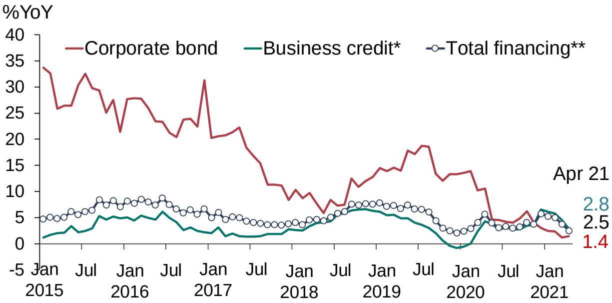


Notes: 1) Private sector loans include credit extended by (1) Other Depository Corporations (ODCs) namely commercial banks, specialized financial institutions, finance companies, saving cooperatives, and money market mutual funds, (2) Other Financial Corporations (OFCs), and (3) non-residents
2) The definition of private credit was redefined to cover broader types of lenders and financial instruments. The data was first published in the MPR in 2019Q4, where the data was available from January 2012.

Source: Thai Bond Market Association and the Bank of Thailand

Chart 2.15 Business loans decelerated slightly while corporate bond issuances expanded slightly.

Growth of business credit and corporate bond outstanding



Notes: 1) Private sector loans include credit extended by (1) Other Depository Corporations (ODCs) namely commercial banks, specialized financial institutions, finance companies, saving cooperatives, and money market mutual funds, (2) Other Financial Corporations (OFCs), and (3) non-residents
2) The definition of private credit was redefined to cover broader types of lenders and financial instruments. The data was first published in the MPR in 2019Q4, where the data was available from January 2012.

Source: Thai Bond Market Association and the Bank of Thailand

Household credit grew 4.8 percent in April 2021 due to a continued expansion in mortgage loans driven mainly by sales promotion offered by developers.

For the second quarter of 2021[5/], businesses and households would continue to require liquidity due the prolonged and highly uncertain outbreak. However, commercial banks would likely be more cautious in extending loans to vulnerable SMEs and households. It was expected that both large corporates and SMEs would seek financing mainly through commercial banks for the respective purposes of project financing

[4/] Loans extended to the private sector consist of loans extended by (1) other depository corporations (ODCs) namely commercial banks, specialized financial institutions, finance companies, saving cooperatives and market mutual funds, (2) other financial institutions (OFCs), and (3) non-residents.

[5/] Based on commercial banks' survey responses for the Report on Credit Conditions Q1/2021 and Outlook for Q2/2021 and working capital. **Bond issuance** would likely continue as normal because corporate credit spreads declined in all credit rating groups. However, it would still be necessary to monitor financing activities of businesses that are vulnerable and affected by the outbreak given that a prolonged outbreak could impact how much financing businesses can obtain as well as their ability to rollover bonds. Meanwhile, **household credit demand was expected to pick up**, especially auto leasing, credit cards, and other personal loans, to be used for general consumption and liquidity management purposes given low household savings.

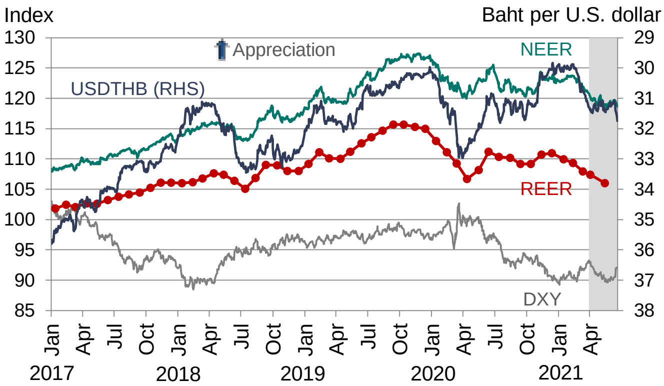
Additional measures to provide financial assistance for those affected by the new wave in the second quarter of 2021 would help some businesses and households obtain more credit. These measures include the special loan facility, the third phase of debt restructuring programs to help retail borrowers, and debt mediation fairs. The efficacy of these measures warranted monitoring going forward.

The baht against the U.S. dollar and the nominal effective exchange rate depreciated from the previous quarter in tandem with the third-wave outbreak in Thailand.

In the second quarter of 2021, the **baht against the U.S. dollar** depreciated from the previous quarter (Chart 2.16). This was due to the third-wave outbreak in Thailand and the high number of new COVID-19 cases which continued to rise despite the vaccination progress. Towards the end of the second quarter, the baht quickly depreciated against the U.S. dollar on account of the stronger dollar after the Fed signaled the possibility of hiking the policy rate sooner than previous market expectations. Between June 1–22, 2021, the exchange rate averaged 31.30 baht to the U.S. dollar, a 1.7 percent depreciation from the March 2021 average.

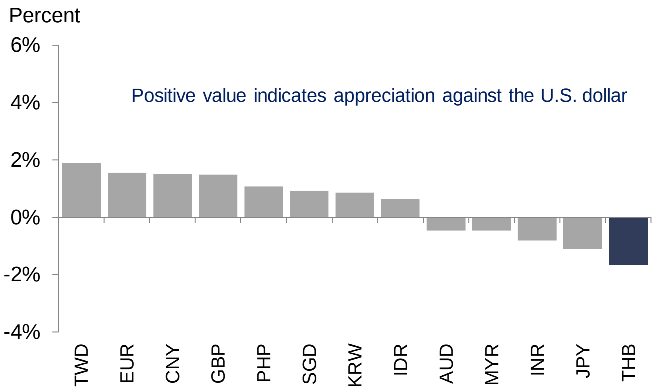
Between June 1 – 22, 2021, the **nominal effective exchange rate (NEER)** averaged 118.62 and depreciated by 2.1 percent from the March 2021 due to the underperformed baht relative to most trading partner currencies (Chart 2.17). The preliminary **real effective exchange rate (REER)** in May 2021 depreciated by 1.8 percent from the March 2021 average.

Chart 2.16 The baht depreciated against the U.S. dollar due to the third-wave outbreak in Thailand and the stronger U.S. dollar following the Fed's hawkish tone.



Source: Bank of Thailand, Bloomberg and Reuters (data as of 22 June 2021)

Chart 2.17 The baht against the U.S. dollar underperformed all other regional currencies (June 2021 average relative to March 2021 average).



Source: Bank of Thailand and Reuters (data as of 18 June 2021)

The financial system remained vulnerable due to the impact of the third-wave outbreak which exacerbated fragile financial positions of some households and businesses. Debt servicing capabilities of the private sector must therefore be closely monitored, especially after various support measures gradually phase out.

The overall financial system remained vulnerable due to the impact of the third-wave outbreak that delayed the recovery and increased uncertainties. On the one hand, financial institution stability remained robust, as reflected by the high level of capital buffers and reserves held by commercial banks as well as the ample liquidity in the banking system. This should allow financial institutions to withstand shocks from economic uncertainties in the period ahead. However, the balance sheets and debt servicing capabilities of households and businesses remained fragile. For some households and businesses, these fragilities were also exacerbated by the third-wave outbreak. The details were as follows:

1. Fragile household balance sheets remained a key financial stability risk. Household debt as a share of GDP rose from 89.4 percent at the end of 2021 to 90.5 percent in the first quarter of 2021. This was mainly due to contractions in GDP growth in the first quarter in 2021 as well as the slight increase in household debt from the previous quarter. It would therefore be necessary to monitor the economic recovery that became more uncertain due to the third-wave outbreak, which could raise future household debt as a share of GDP. **Debt servicing capabilities of households must also be monitored closely.** Nonetheless, the share of non-performing consumer loans remained largely stable at 2.9 percent in the first quarter of 2021 due to (1) the relaxation of loan classification that slowed the deterioration in credit quality and (2) debt restructuring measures such as debt mediation fairs.

Looking ahead, households would still face risks stemming from the uncertain economic recovery due to the outbreak, especially those working in the services sector and the self-employed. This could hold down their income and exacerbate debt servicing capabilities. Moreover, these households would still rely on continued financial and fiscal measures to alleviate the impacts. As such, the credit quality of consumer loans must be monitored closely, especially the impact of the new wave and during the phase-outs of government measures.

2. Financial positions of businesses, especially tourism-related businesses, remained fragile and were aggravated by the third-wave outbreak. Overall balance sheets of businesses improved slightly in the first quarter of 2021, both the operating profit margin (OPM) and interest coverage ratio (ICR), especially for the manufacturing and petroleum-related businesses which partly benefited from improved exports growth. However, the financial positions of SMEs and tourism-related businesses, especially hotels, remained fragile. These businesses continued to incur losses, their debt servicing capabilities weakened, and the third-wave outbreak would delay tourism recovery. The share of non-performing business loans remained stable at 3.2 percent in the first quarter 2021, and that of SMEs was still elevated at 7.3 percent in the first quarter of 2021.

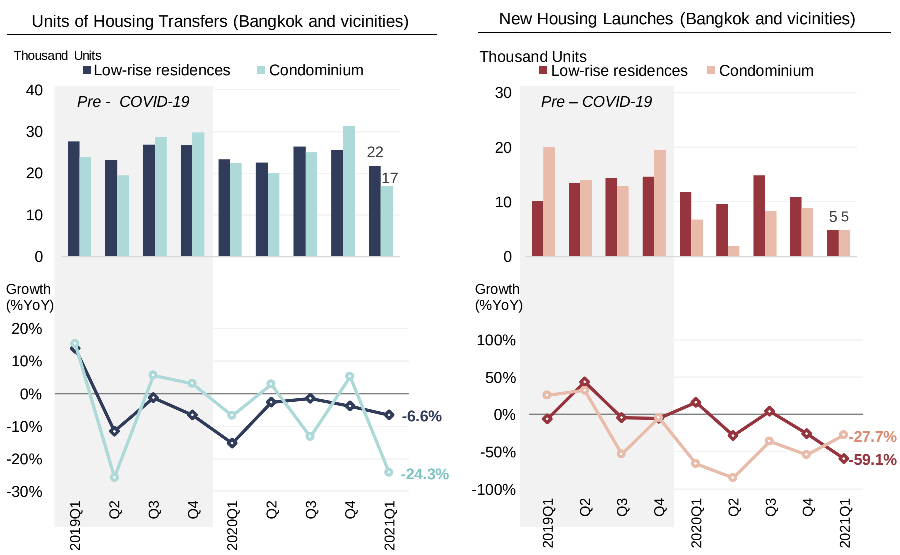
While continued support from government measures partially alleviated the impact of the outbreak, in the period ahead the third-wave outbreak remained highly uncertain and could result in a slower and more uneven economic recovery. Therefore, it was deemed necessary to closely monitor the more fragile financial positions and debt servicing capabilities of businesses, especially SMEs and tourism-related businesses.

3. The real estate market remained fragile given the weak housing demand due to the impact of the new outbreak and declining number of new projects from developers. In the first quarter of 2021, both demand and supply in the real estate market declined after having gradually improved during the second half of 2020 when the outbreak situation was subsiding. The number of ownership transfers for low-rise housing and condominiums in Bangkok and the vicinities saw a sharp contraction of 6.6 percent and 24.3 percent from the same period last year, respectively, when the outbreak was not as severe. The number of ownership transfers would likely decline in the period ahead from growing concerns over the outbreak and the uncertain economic outlook.

Property developers continued to cut down new projects which resulted in a significantly lower number of new projects in the first quarter of 2021 compared to the pre-pandemic period. New low-rise housing and condominium projects in Bangkok and the vicinities fell by 59.1 and 27.7 percent, respectively, from the same period last year. Going forward, it would be necessary to monitor the behavior of property developers. In particular, competition among property developers could intensify amid the protracted outbreak of COVID-19. Such competition could prompt many developers to require additional liquidity, especially SMEs.

Future risks pertaining to the oversupply of commercial properties warranted close monitoring, especially office spaces. This was because office space supplies would increase markedly over the next 1 – 2 years. CBRE Thailand[6/] assessed that there would be approximately 300,000 square meters of new office space emerging in 2021, higher than the average of 200,000 square meters over the past 5 years. At the same time, there remained risks relating to the changes in renters' behavior that could result in lower rent, such as work from home arrangements and businesses opting to rent smaller office spaces to reduce costs.

Chart 2.18 Real estate markets remained fragile given the weak housing demand due to the impact of the new outbreak and declining number of new projects from developers.



Source: REIC

Source: AREA, calculated by the Bank of Thailand

[6/] Coldwell Banker Richard Ellis (Thailand) Limited is a company that offer real estate advisory services.

2.2 Outlook for the Thai Economy

Thailand's economic growth was projected to slow down from the previous *Monetary Policy Report* due to the prolonged third-wave outbreak which could become more severe due to virus mutations. Risks that the economic growth would underperform the baseline projection were significant. Headline inflation outlook was largely unchanged and was expected to remain within the target range throughout the forecast period.

The Committee assessed that the Thai economy would grow 1.8 percent in 2021 and 3.9 percent in 2022, lower than the projected growth of 3.0 percent in 2021 and 4. 7 percent in 2022 in the previous *Monetary Policy Report* (Table 2.2).

Table 2.2 Forecast summary

Percent	2020*	2021	2022
GDP growth	-6.1	1.8 (3.0)	3.9 (4.7)
Headline inflation	-0.8	1.2 (1.2)	1.2 (1.0)
Core inflation	0.3	0.2 (0.3)	0.3 (0.4)

Note: * Outturn

( ) Monetary Policy Report March 2021

Sources: NESDC, Ministry of Commerce, Bank of Thailand's estimates

The third-wave outbreak that began in April 2021 had a severe and drawn-out impact on the Thai economy from virus mutations that led to more widespread infections. The implementation of more stringent containment measures negatively affected domestic spending. In addition, the assumption of foreign tourist arrivals was revised down significantly given the more severe outbreak situation in Thailand and abroad most recently.

Nevertheless, greater clarity pertaining to the plan to procure and distribute COVID-19 vaccines helped to offset some of the economic impacts from the third-wave outbreak. It was expected that Thailand would attain herd immunity in the first half of 2022, supporting the resumption in economic activities and the further opening of Thailand's borders to foreign tourists by 2022. Meanwhile, vaccine distribution among advanced economies were timely and began to produce results. Economic activities among trading partner economies thus recovered better than expected which benefited Thai merchandise exports.

The government played a critical role in supporting economic growth through the accelerated disbursement of funds under the 1 trillion baht Emergency Decree during the first half of 2021 as well as the new Emergency Decree[7/] *(**Box**: Fiscal measures in response to the new wave of COVID-19)*. These would provide additional economic boost through cash transfers and government spending. Progress in COVID-19 vaccine procurement and distribution as well as the global economic recovery would also support the Thai economic recovery despite significant impacts from the third-wave outbreak. **Overall, the Thai economy would slightly moderate and was expected to gradually recover in the latter half of 2021 before picking up further in 2022.**

[7/] Emergency Decree Authorizing the Ministry of Finance to Raise Additional Loans to Solve Economic and Social Problems as Affected by the Coronavirus Disease Pandemic, B.E. 2564 (2021).

Additional assumptions underpinning the latest growth forecasts were as follows. First, the third-wave outbreak Thailand would be well contained by the beginning of the fourth quarter of 2021. Second, at least 100 million vaccine doses would be procured and distributed within 2021 as planned, leading to the attainment of herd immunity by the first half of 2022. Third, additional fiscal stimulus would be forthcoming under the new Emergency Decree that authorized 500 billion baht of government borrowing.

Headline inflation projection for 2021 was unchanged from the previous forecast at 1.2 percent given subdued domestic demand and government subsidies to lower the cost of living, despite higher crude oil price assumption throughout the forecast period. **Headline inflation projection for 2022 was revised up to 1.2 percent** from 1.0 percent in the previous *Monetary Policy Report.* This was attributed to the low-base effect from government subsidies to lower the cost of living in 2021. Headline inflation was expected to remain within the target range throughout the forecast period.

Merchandise exports was expected to register higher growth thanks to strong outturns and expanding global demand.

The value of Thai merchandise exports was projected to expand by 17.3 percent, significantly higher than the previous *Monetary Policy Report* at 9.0 percent. This upward revision was thanks to the much-higher-than-expected outturns in the first quarter of 2021 across all product categories and markets. Looking ahead, merchandise exports was expected to maintain a strong expansion in tandem with trading partners' economic growth and a continued recovery in global trade. Supply-side constraints such as migrant worker shortage, factory outbreaks, container shortage, higher costs of transport and raw materials, and electronic component shortage may have some impacts on Thai merchandise exports going forward. However, it was expected that the impacts would be limited (Chart 2.19) and thus the value of merchandise exports in 2021 would exhibit a strong expansion. **The value of merchandise exports was expected to grow by 4.9 percent in 2022**, a slight slowdown from the acceleration in 2021.

Chart 2.19 The manufacturing sector was somewhat affected by supply disruption, but most shortages were expected to alleviate by the first half of 2022.

Sector	Domestic factors		Foreign and domestic factors		
	Migrant labor shortages	COVID-19 outbreak in factories	Container shortages and higher transportation costs	Higher steel and input prices	Chipset shortages
Auto & auto parts		✓	✓	✓	✓✓
Electrical appliances		✓	✓	✓	✓✓
Food	✓	✓	✓✓	✓	
Electronics (IC & HDD)		✓	✓	✓	
Rubber & plastics		✓	✓		
Construction materials			✓	✓	
Petroleum & chemicals			✓	✓	
Textiles & apparel	✓		✓	✓	
Beverages				✓	
Expected period of shortage alleviation	Q2/22 Many foreign workers returned to their home countries since the first wave and did not return yet.	Q3/21 There could be potentially recurring outbreaks until the new wave abates.	Q1/22 Production of containers in China could not meet global demand. Recent closures of China's major ports from the outbreak exacerbated container shortages.	Q1/22 Prices would remain high due to low supply from India despite some re-opening of steel factories in Europe.	Q2/22 The expansion in chipset production would not meet the surge in demand this year.

Note: ✓ = Impact on either production costs or quantities ✓✓ = Impact on both production costs and quantities

Exports of services would continuously contract and recover more slowly than previously assessed.

The tourism sector was expected to recover more slowly than previously assessed due to the third-wave outbreak as well as more easily transmissible and severe mutants. Thailand could thus not start reducing quarantine requirements to 7 days for travelers arriving from abroad from the second quarter of 2021. While the Phuket Sandbox would commence in the third quarter of 2021 as planned, the third-wave outbreak would likely be a concern for foreign tourists and deter trips to Thailand. For 2022, vaccine distribution plans around the world, including Thailand, would become clearer but the highly contagious and more severe variants could reduce vaccine efficacy. As such, tourism would unlikely make a swift recovery and the re-opening of Thailand's borders to foreign tourists must proceed with caution. **The Committee revised down foreign tourist figures from 3 million to 0.7 million in 2021, and from 21.5 million to 10 million in 2022**.

The current account balance was projected to register a deficit of 1.5 billion U.S. dollars in 2021 instead of a surplus of 1.2 billion U.S. dollars from the previous forecast. The service balance would record a larger deficit due to lower tourism receipts as well as higher transportation costs and oil prices**.** The trade balance was expected to record a larger surplus due to stronger merchandise export growth**. For 2022, the current account surplus was projected to record 12 billion U.S. dollars, down from 25 billion U.S. dollars in the previous *Monetary Policy Report*** owing to lower tourism receipts in line with foreign tourist figures**.**

Private consumption was expected to gradually recover in the second half of 2022.

Private consumption would likely decelerate throughout the first half of 2022 due to the more severe third-wave outbreak and stricter containment measures. **Nevertheless, private consumption would gradually recover in the second half of 2021** supported by cash handouts and additional stimulus, both under the 1 trillion baht Emergency Decree that was effective from 2020 and the new 500 billion baht Emergency Decree that came into effect on May 25, 2021. In addition, the distribution of COVID-19 vaccines had been improving and was expected to meet the government's target. This would be a key factor supporting private consumption recovery, especially during the first half of 2022 when Thailand was expected to attain herd immunity. This would improve consumer confidence and expedite the recovery in tourism and services spending in 2022.

Recovery of private investment would continue despite a slight slowdown after the third wave.

Private investment was projected to expand more than the previous forecast in line with significantly improving merchandise exports. However, the new wave of COVID-19 delayed investment somewhat during the first half of this year. These were reflected by the private investment outturns in the first quarter of 2021 which decelerated but still higher than the previous assessment. Private investment in large infrastructure fell slightly due to delays in the MRT Orange Line project, while investment for the third phase of Laem Chabang Port would commence sooner. From the second half of 2021 onward, private investment would continue to expand in line with strong merchandise export growth and the gradually improving private consumption. **The Committee thus revised up private investment from the previous *Monetary Policy Report* to 7.0 percent in 2021 and 6.0 percent in 2022*.***

Summary of key forecast assumptions

- Trading partner economies would improve given better-than-expected outturns in the first quarter of 2021, especially the U.S. and Asian exports. Trading partner economies were projected to continue expanding throughout the forecast period supported by the timely implementation of vaccine distribution plans that would enable the re-opening of borders in 2022. Meanwhile, the new waves of outbreak in many Asian countries and the shortage of electronic parts would have some short-term impacts on trading partner economies.
- The Federal Funds Rate assumption was unchanged at 0.00 – 0.25 percent. While the dot plot from the latest FOMC meeting indicated an earlier rate hike, most FOMC members did not expect a rate hike during 2021 – 2022.
- Regional currencies (excluding the Chinese yuan) weakened slightly in the short run due to the recent waves of COVID-19 in many countries and improved investor sentiment regarding the U.S. economic recovery. Looking ahead, regional currencies would see some appreciation in tandem with the regional economic recovery thanks to the U.S economy and further vaccination progress.
- Dubai crude oil prices were revised up throughout the forecast period on account of recent price outturns and the expected pick-up of oil demand in line with the global recovery.
- Farm income (excluding government support measures) was revised up for 2021 on account of higher prices and output of key crops driven by higher global demand, namely, rubber, palm oil, sugar cane, and off-season rice. In the period ahead, farm income was expected to benefit from more favorable weather conditions given higher-than-usual average rainfall in 2021. Farm income growth would slow down in 2022 due to the high-base effect of agricultural prices in 2021.
- Public spending at current prices was revised down slightly owing to (1) lower-than-expected budget disbursement during the first quarter of 2021 and (2) the change in planned expenditures under the 1 trillion baht Emergency Decree that were converted into more cash transfers to alleviate the impact of the outbreak. The new Emergency Decree that authorized 500 billion baht of government borrowing would also bring about additional stimulus in the form of cash transfers to alleviate the impact of COVID-19. Expenditure under the new Emergency Decree would commence in 2021 and continually provide economic stimulus through to 2022.

Table: Summary of forecast assumptions

Annual percentage change	2020*	2021	2022
Trading partners' GDP growth (% YoY)[1/]	-3.5	6.0 (5.5)	4.1 (3.8)
Fed funds rate (% at year end)	0.00 - 0.25	0.00 - 0.25 (0.00 - 0.25)	0.00 - 0.25 (0.00 - 0.25)
Regional currencies (excl. China) vis-à-vis the U.S. dollar (index)[2/]	157.1	152.9 (150.6)	153.1 (149.6)
Dubai crude oil price (U.S. dollar per barrel)	42.1	62.3 (60.0)	65.5 (62.5)
Farm income (% YoY)	0.0	6.9 (1.6)	0.6 (2.7)
Government consumption at current price (billion baht)[3/]	2,779	2,948 (2,982)	2,980 (2,948)
Public investment at current price (billion baht)[3/]	1,011	1,120 (1,142)	1,199 (1,166)

Notes: [1/] Weighted by each trading partner's share in Thailand's total exports
[2/] Increasing index represents depreciation, decreasing index represents appreciation
[3/] Assumption includes spending on infrastructure investment plans
* Outturns
( ) *Monetary Policy Report* March 2021

Headline inflation projection was largely unchanged. Core inflation project was revised down given subdued demand-pull inflationary pressures.

Headline inflation faced upward pressures mainly from supply-side factors. Costs of energy and fuel rose in tandem with global crude oil prices which resulted in higher inflation in the energy category. This was despite the government's electricity bill subsidies from May to June 2021 which helped to reduce energy costs somewhat. It was expected that rising global commodity prices such as metal and rubber would have limited impact on headline inflation. So far, the increase in price of those commodities had yet to spill over to domestic consumer good prices due to difficulties of producer price passthrough during the economic downturn. Thus, the likelihood of headline inflation continually rising was quite low (**Box**: *Reflation in Thailand is coming?).* Meanwhile, core inflation projection was revised down given that demand-pull inflationary pressures remained subdued and would recover more slowly due to the third-wave outbreak. **The Committee projected that headline inflation would be 1.2 percent in both 2021 and 2022, and revised down core inflation projection to 0.2 percent in 2021 and 0.3 percent in 2022.**

Table 2.3 Forecasts of GDP and components

Annual percentage change	2020*	2021	2022
GDP growth	-6.1	1.8 (3.0)	3.9 (4.7)
Domestic demand	-1.6	4.1 (4.6)	3.2 (2.0)
Private consumption	-1.0	2.5 (3.0)	3.4 (2.7)
Private investment	-8.4	7.0 (6.0)	6.0 (5.5)
Government consumption	0.8	4.1 (5.2)	-1.0 (-3.1)
Public investment	5.7	9.5 (11.6)	5.7 (0.8)
Exports of goods and services	-19.4	8.8 (5.2)	7.8 (13.9)
imports of goods and services	-13.3	15.0 (9.2)	5.5 (7.5)
Current account (billion, U.S. dollars)	17.6	-1.5 (1.2)	12.0 (25.0)
Value of merchandise exports	-6.5	17.1 (10.0)	4.9 (6.3)
Value of merchandise imports	-13.8	22.7 (15.2)	6.6 (6.8)
Number of foreign tourists (million person)	6.7	0.7 (3.0)	10.0 (21.5)

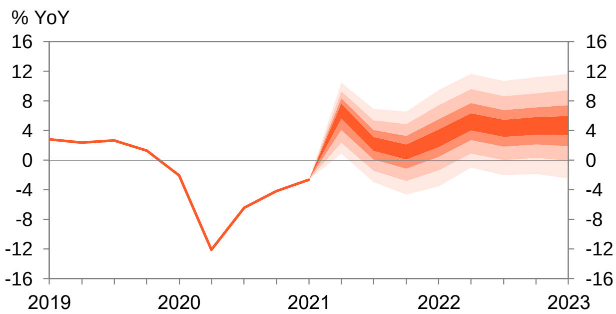
Note: *Outturns
( ) *Monetary Policy Report March* 2020

The Thai economic outlook faced significant risks of underperforming the baseline due to virus mutations that could intensify the outbreak and reduce vaccine efficacy.

The Committee assessed that Thailand's economic outlook was subject to significant risks that could see growth underperforming the baseline. This is reflected by the risk fan chart based on Vine Copula models (Chart 2.20) which is skewed to the downside, especially in 2021 (**Box**: *Assessing risks to economic forecasts using Vine Copula models*). Nevertheless, there were several supporting factors counteracting those risks, namely, (1) positive developments in vaccine distribution plans, (2) accelerated approvals of economic restoration projects under the previous Emergency Decree, and (3) the new Emergency decree authorizing 500 billion baht of government borrowing. Nonetheless, these tailwinds could not fully offset **significant downside risks that could see the Thai economy underperforming the baseline**. First, protracted outbreaks and virus mutations from both existing and new variants could lead to a public health crisis, affect domestic spending, and delay the re-opening plan to admit foreign tourists. Second, government spending on economic relief and restoration could be lower than expected if projects under the new Emergency Decree faced approval delays or low disbursement rates. Third, balance sheets of businesses could be exacerbated by the new outbreak, especially the services sector, leading to widespread business closures and lay-offs. Dismissed workers could be unemployed for extended periods and eventually give up finding jobs. Further deterioration in business and household balance sheets would thus impinge on economic activities and cause a rise in debt defaults. Fourth, supply disruption and higher shipping costs may have more impact on Thailand's manufacturing and export sectors than expected.

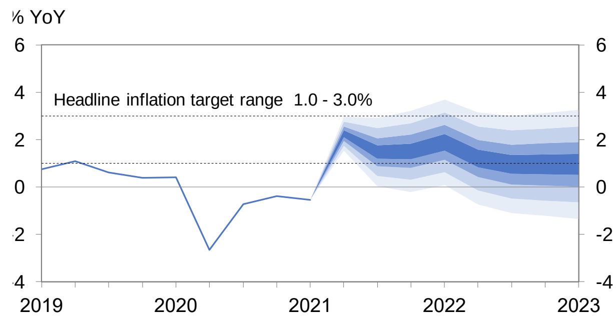
Risks to headline inflation and core inflation outlook were balanced. Upside risks that could see headline and core inflation edge up higher than the baseline stemmed from inflation abroad and greater-than-expected passthrough of rising global commodity prices to domestic inflation. Meanwhile, downside risks to the headline inflation and core inflation outlook were the same as those for the economy (Chart 2.21 and 2.22).

Chart 2.20 Growth forecast



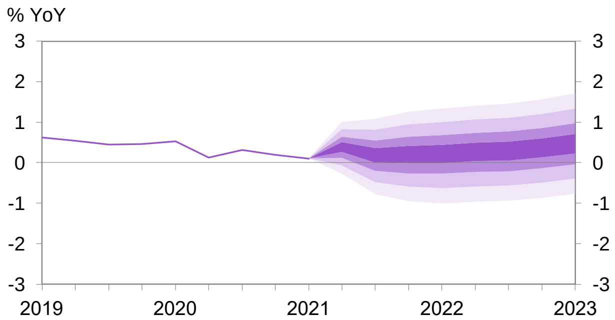
Note: Fan chart covers 90% of the probability distribution and the Bank of Thailand improved the risk assessment for the economic projections (Box: *Assessing risks to economic forecasts using Vine Copula models*)

Chart 2.21 Headline inflation forecast



Note: Fan chart covers 90% of the probability distribution

Chart 2.22 Core inflation forecast



Note: Fan chart covers 90% of the probability distribution

Fiscal measures in response to the new wave of COVID-19

Fiscal measures in response to the new wave of COVID-19 (since May 2021)

1. Direct transfers to assist those affected by COVID-19 and boost domestic consumption

Measure	Target (mio. ppl)	Details	Amount (bn baht)	2021 Q1	2021 Q2	2021 Q3	2021 Q4
Expansion of "We Win" program	34	Increase subsidies by 1000 baht per week for two weeks	67		● Disbursed in May, spend within June		
Expansion of "Section 33 We Love Each Other" program	8		12		●		
"Half-half" co-payment scheme (Phase 3)	31	Government pays 50% of the expense up to 150 baht per person per day up to 1,500 baht per person per round and up to 3,000 per person throughout the third phase	93			1st round	2nd round
"Ying Chai Ying Dai" e-voucher scheme	4	Participants receives e-voucher as cashback on their cumulative spending during a set period. The spending amount used in calculating the cashback cannot exceed 5,000 baht per person per day. Participants can receive e-voucher up to a cumulative maximum of 7,000 baht per person throughout the program period. Actual spending (baht) – E-voucher received (% of actual spending) 1-40,000 – 10 40,0001-60,000 – 15	28				
Cash handouts for Social Welfare Card holders (Phase 3)	14	Cash handout of 200 baht per person per month for 6 months	16				
Cash handouts for special groups	3		3				

*Data as of 1 June 2021

2. Emergency Decree Authorizing the Ministry of Finance to Raise Additional Loans to Solve Economic and Social Problems as Affected by the Coronavirus Disease Pandemic, B.E. 2564 (2021) (500 billion baht Emergency Decree)

Recently, the government approved projects to help alleviate the impact of COVID-19 and resolve the outbreak in Thailand. These projects were funded by the Emergency Decree Authorizing the Ministry of Finance to Raise Additional Loans to Solve Economic and Social Problems as Affected by the Coronavirus Disease Pandemic, B.E. 2564 (1 trillion baht Emergency Decree). **So far, the government has used up almost all of the permitted borrowing amount and was facing a deadline to finalize its borrowing and bond issuance plans by 30 September 2021**. In this regard, it was necessary for the government to issue a new Emergency Decree authorizing up to 500 billion baht of government borrowing which would come into effect on May 25, 2021. This new Emergency Decree would provide additional funding to respond to the uncertainties pertaining to the COVID-19 outbreak as well as to alleviate its impact and restore economic growth once the pandemic subsides.

Objectives of the new Emergency Decree

To resolve the outbreak of COVID-19 in Thailand (30 billion baht)
e.g. the procurement of medical equipments, improving medical facilities to accommodate COVID-19 patients, and developing and distributing vaccines.

To alleviate the impact of COVID-19 and provide compensation for citizens and businesses (300 billion baht)
e.g. remedial measures for citizens and businesses across all sectors that were affected by the outbreak

To restore the economy and social well-being (170 billion baht)
e.g. employment retention, boosting consumption and investment

The government can reallocate the amount between the 3 objectives as appropriate. This would allow more flexibility in the implementation of new measures to better suit the highly fluid situation. Each project must be screened by the Screening Committee for expenditures under the 1 trillion baht Emergency Decree before being tabled to the Cabinet for further approval.

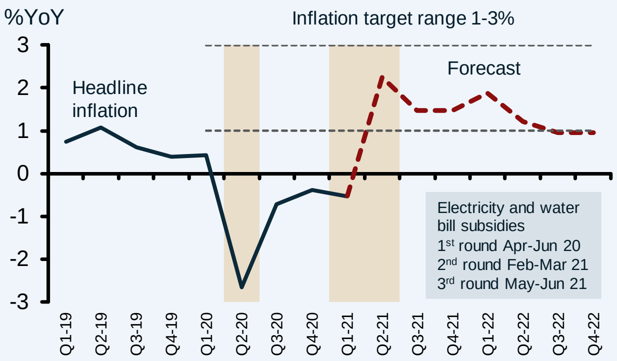
Source: (1) Cabinet resolutions (2) Royal Thai Government Gazette (3) Fiscal Policy Office, Ministry of Finance. Information compiled by the Bank of Thailand.

Reflation in Thailand is coming?

In the recent period, some countries had been experiencing reflation, global commodity prices saw large increases, and headline inflation in Thailand accelerated in the second quarter of 2021. This raised the question of whether domestic inflation would rise further and what its outlook would be. Considering Thailand's inflation dynamics in recent times and the current inflation outlook, it was assessed that the **reflation abroad, rising global commodity prices, and the sharp rise in domestic inflation all stemmed from temporary factors that would not lead to significantly rising domestic inflation. This is in line with the outlook of subdued medium-term inflation in Thailand.** Key considerations were as follows:

Consideration 1: Inflation rose sharply in the second quarter of 2021, but this was only a temporary increase on account of low-base effect from the previous year and thus cannot be characterized as stagflation. Inflation picked up to 2.3 percent in the second quarter of 2021. The increase was temporary and mainly attributed to the low-base effect of crude oil prices and the government measures to reduce electricity and water bills to lower the cost of living in 2020. It was expected that **inflation would gradually decline in the third quarter of 2021 and would be moving around the lower bound of the target range from mid-2022 onward due to several factors. First, demand-pull inflationary pressures remained soft.** While demand would gradually recover thanks to government stimulus measures and the relaxation of containment measures, there would be several factors holding down demand-pull inflationary pressures going forward, namely, elevated household debt, fragile labor markets, and consumer confidence that could be hampered by prolonged outbreak.

Chart 1 Inflation would gradually decline and move around the lower bound of the target range from mid-2022.

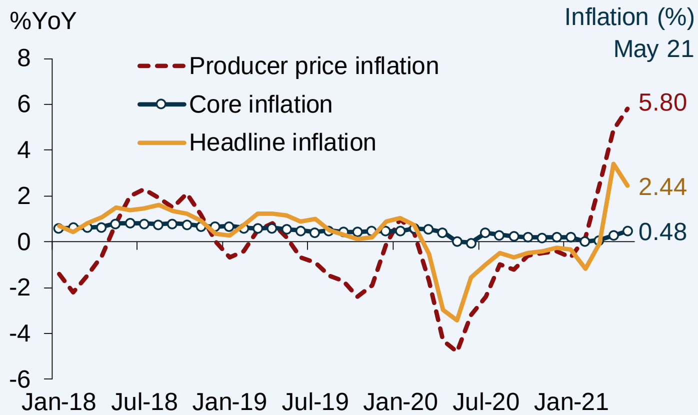


Source: Ministry of Commerce, forecasts by the Bank of Thailand

Second, supply-side inflationary pressures would be limited given that global energy prices were expected to rise at a gradual pace. This was in line with the pick-up in oil demand on the back of the global economic recovery and higher oil output from both the U.S and OPEC+ countries. Fresh food prices would remain low given limited risk of drought at the present (Chart 1).

Consideration 2: Reflation in advanced economies and the rise of global commodity prices due to supply shortages would have limited spillovers to domestic inflation due to several factors. First, Thailand's CPI basket has low import content at about 16 percent. Rising global commodity prices would be transmitted mainly through oil prices. It was expected that inflationary pressures from oil prices would moderate in the period ahead given gradual pace of crude oil price increases. Moreover, Thailand has an Oil Fund as a mechanism to stabilize domestic oil prices, limiting the first-round effect on domestic oil prices. The second-round effect on core inflation and fresh food prices would also be limited, since historical data indicated that oil prices would have significant impact on food prices and production costs only given sustained and sharp increases in oil prices. **Second, reflation in advanced economies and supply shortages are temporary and would likely resolve in early 2022** when pent-up demand is normalized and the manufacturing sectors gradually recover from the pandemic. Production costs would be slightly higher but would have limited impact on domestic inflation (Chart 2) because rising production costs would be limited to some goods such as automobiles and electrical appliances that make up a small share of Thailand's CPI basket. Most businesses would also be able to cope with higher production costs in the short-term for about 3-6 months

Chart 2 Higher production costs would have limited spillovers to domestic inflation.



Source: Ministry of Commerce

<u>Consideration 3:</u> Medium-term inflation in Thailand would remain low due to the following structural factors that were aggravated by the pandemic. First, the long-term unemployment and the number of people who exited the labor force rose. This was owing to the slow and uneven economic recovery as well as the increasing use of automation in the manufacturing process to lower infection risks and reduce costs in the long run. **Second, the rapid growth of e-commerce usage** by both businesses and consumers since the COVID-19 pandemic intensified price competition. **Third, other structural factors continued to pose impacts,** namely, aging population and the advancing shale oil technology.

Nevertheless, inflation in Thailand could face some upward pressures from factors such as (1) pent-up demand during the pandemic being released, triggering a pick-up in inflation, **(2) reduced reliance on global supply chains (de-globalization)** from strained global trade might result in higher costs of production and services, and **(3) lower market competition in Thailand post-COVID** due to businesses being either permanently closed or acquired by a few large players. **Overall, it was assessed that upward inflationary pressures would not be as prevalent as downward pressures. As such, inflation would remain low over the medium-term and move within the target range.**

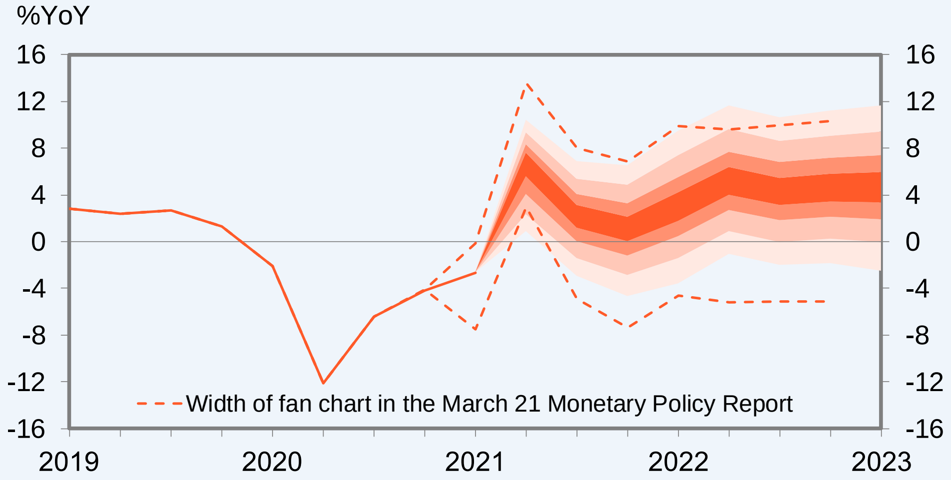
Various factors that led to the recent rise in inflation were transitory. Reflation in advanced economies and supply shortages would have limited spillovers to domestic inflation. Inflation would thus be unlikely to increase significantly and remain within the target range. Medium-term inflation would be subdued mainly owing to structural factors.

Assessing risks to economic forecasts using Vine Copula models

The Monetary Policy Committee (MPC) had been using fan charts as the main tool to communicate about risks to its economic and inflation forecasts. Risk assessment was based on the standard deviation of historical forecast errors together with expert judgement to ensure that uncertainties surrounding the forecasts account for all relevant risks and factors outside the model such as uncertainties of COVID-19.

Nevertheless, the previous risk assessment methodology for the fan charts had two limitations. First, it relied heavily on expert judgement. An analysis of past data found that fan charts constructed using the old methodology were much wider than those constructed using Vine Copula models, which reflected that experts who provided their judgement might have overstated the risks (Chart 1). **Second, the old methodology did not sufficiently account for financial risks.** The old fan charts primarily captured risks pertaining to the real sector.

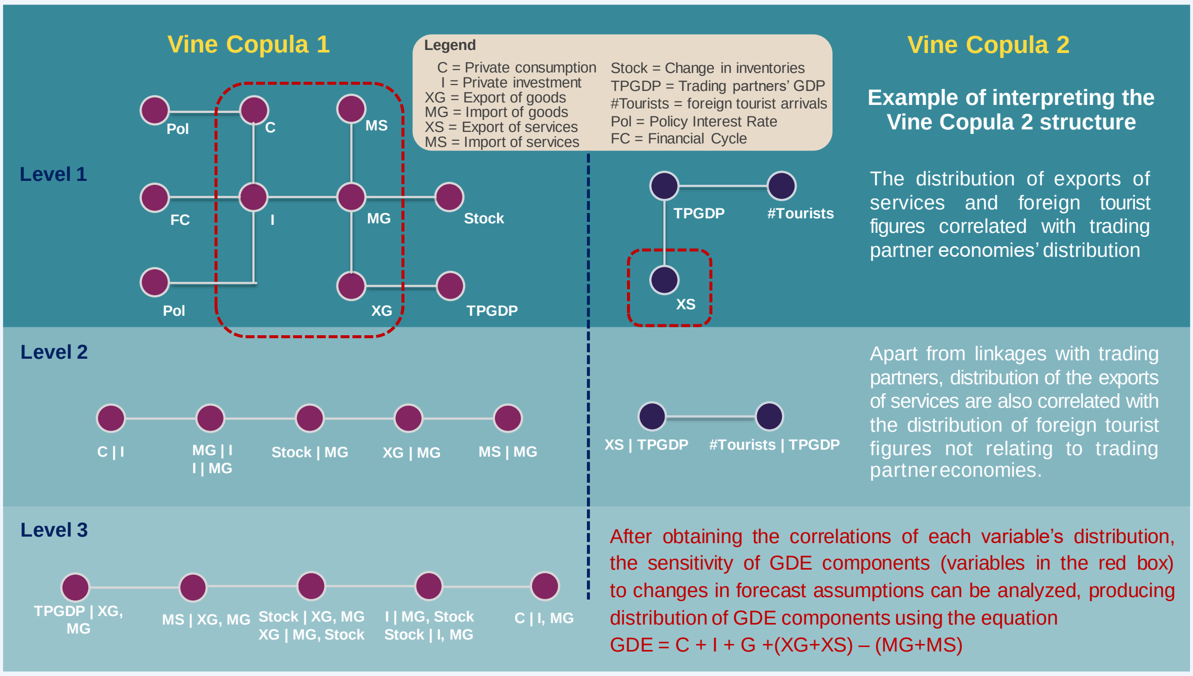
Chart 1 Example fan chart from the Vine Copula model compared with fan chart width from the previous forecast based on the original methodology



Against this backdrop, the Bank of Thailand (BOT) developed a new risk assessment methodology using Vine Copula models[8/]. Vine Copula models use the distribution of different variables to analyze their pairwise correlation and connecting them together until a system-wide correlation is found. Analyzing different economic variables such as consumption, investment, exports and imports, policy rate, and financial cycle together under a single model with this methodology can explain how the distribution of these variables and economic growth would be affected by distribution of other variables like trading partner economies' growth or foreign tourist figures. Vine Copula models are therefore suitable for risk assessment to construct a fan chart. The structure of Vine Copula models is illustrated in Chart 2.

[8/] For more details on Vine Copula Models, see Czado (2019), "Analyzing Dependent Data with Vine Copulas". The BOT is also publishing a new research paper – Woramongkhon (2021), "Analyzing Economic Tailed Risk in Thailand Through Vine Copula Simulations."

Chart 2 Structure of the Vine Copula model used in the new risk assessment



Benefits of using Vine Copula models for risk assessment:

(1) Transparent and less expert judgement. Vine Copula models cover a broad range of variables and analyze them in a systematic manner. Changes to the fan chart are thus determined largely by model correlation results, preventing it from being too wide or too skewed.

(2) More accurately identify the sources and impacts of risks. Using models in risk assessment makes visible the transmission channel and size of the risks within the system. It can also assess the net impact of the risks affecting each of the variable. For instance, it will be able to illustrate how the overall risk to the growth outlook would change if trading partner economies' growth turned out much stronger than expected but the severe COVID-19 outbreak also caused delays in public investment.

In addition, Vine Copula models can **assess how monetary policy affects economic risks.** In some cases, policy rate cuts could have a small effect on the baseline economic growth but greatly reduce the risk that the economy would undergo a severe contraction. In such circumstances, the BOT's main forecasting model, which focuses heavily on the baseline, might not be able to reflect all the relevant information. As such, the new Vine Copula-based model has a role in assessing growth at risk[9/] which would allow the MPC to have a more comprehensive set of information to assist their policy decision.

(3) Provide insights on macro-financial linkages through correlation between the financial cycle and risks to economic growth[10/]. Empirical evidence showed that if an economic crisis and a financial crisis happened at the same time, the contraction in economic growth

[9/] See Box "The concept of growth at risk and the linkage to Thailand's financial stability" from the September 2019 *Monetary Policy Report*

[10/] See Box "Financial cycle and its policy implications" from the September 2019 *Monetary Policy Report* would be exacerbated by tighter financial conditions which affected growth severely and took a long time to recover.

(4) More complexity in risk impact assessment. Vine Copula models can handle non-linear relationships without the need for additional assumptions. Thus, it could model highly complex relationships between economic variables without requiring expert judgement. Examples include the asymmetric relationship between the financial cycle and private investment where private investment would not start picking up until later stages of the upturn in the financial cycle.

The new methodology would help improve and sharpen the BOT's communication and assessment of risks to the economic forecasts, **while also capturing financial sector risks.** This new tool would be one of the tools that the MPC uses to assess risks to the economic outlook and deliberate the appropriate forward path of monetary policy which must carefully balance the intertemporal trade-off between supporting economic growth and safeguarding macro-financial stability. The BOT will publish fan charts that are constructed using the new methodology starting from the June 2021 *Monetary Policy Report* onward.

3. Monetary Policy Decision

The MPC maintained the policy rate at 0.50 percent. The Committee viewed that the procurement and distribution of vaccines together with expedited financial measures were the most important priorities for the Thai economy at present. These would provide support to the economic recovery more than cutting the policy rate from an already low level.

At the meetings on May 5 and June 23, 2021, the Committee voted unanimously to maintain the policy rate at 0.50 percent. The Committee assessed that **Thailand's economic recovery would be slower and more uneven compared to the previous assessment.** The third-wave outbreak would affect the recovery in foreign tourist figures and domestic demand. Labor markets also became more fragile and might recover more slowly, especially the services sector and the self-employed. Nevertheless, the Thai economy would gain additional momentum from the increase in government spending from the new Emergency Decree and strong merchandise export growth in line with the global recovery. Headline inflation rose temporarily in the second quarter of 2021 due to the low-base effect of crude oil prices in the same period last year. Meanwhile, reflation in advanced economies and supply constraints would have limited spillovers to domestic inflation. Medium-term inflation expectations remained well-anchored within the target range. Looking ahead, **Thailand's economic outlook would still be subject to significant downside risks,** namely (1) the COVID-19 outbreak both in Thailand and abroad that could become more severe owing to virus mutations, (2) the distribution and efficacy of vaccines which would affect the re-opening of Thailand's borders to foreign tourists and domestic activities, and (3) more fragile balance sheets of businesses and households.

The Committee viewed that the most important priority facing the Thai economy was the procurement and distribution of appropriate vaccines adequately and timely, together with expediting **financial measures** especially the special loan facility and debt restructuring. These would provide more targeted assistance to the affected businesses and households than policy rate cut. The policy rate was already at a low level and cutting it might provide limited support to the economic recovery. The Committee thus voted to maintain the policy rate and would stand ready to use the limited policy space at the most effective timing. In determining the appropriate course of monetary policy, key considerations were as follows.

Thailand's economic outlook was subject to significant downside risks that could exacerbate the uneven economic recovery and the fragile labor markets.

The Committee assessed that there were significant risks that could result in the Thai economy underperforming the baseline projection. The protracted and more severe outbreak would further squeeze business liquidity and labor income in the services sector, resulting in an uneven economic recovery that is more severe and prolonged. The Committee assessed different outbreak scenarios including the size and speed of vaccine distribution (Chart 3.1). Under the scenario that a new outbreak emerged due to a more easily transmissible and deadly mutant, herd immunity attainment would be delayed from the first half of 2022 to the end of 2022, affecting foreign tourist figures and domestic demand. The Thai economy would slow down significantly from the baseline projection and the timing in which it would return to the pre-COVID level would be pushed back from the end of 2022 to early 2023. **Therefore, the Committee viewed that the most important priority for the Thai economy at the present was the procurement and distribution of appropriate vaccines to tackle virus mutations adequately and timely, which would prevent the outbreak from being prolonged. Meanwhile, all parties should swiftly push forward the implementation of various measures, both financial and fiscal, to produce results and support the economy especially during the next six months where uncertainties would remain high.**

Chart 3.1 The Thai economy would slow down from the previous projection due to more severe and prolonged outbreak.

Real GDP

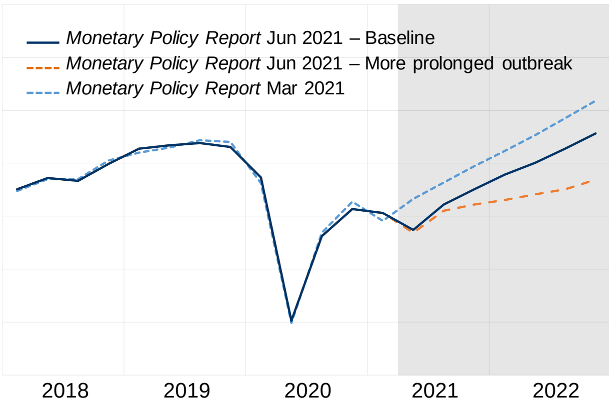
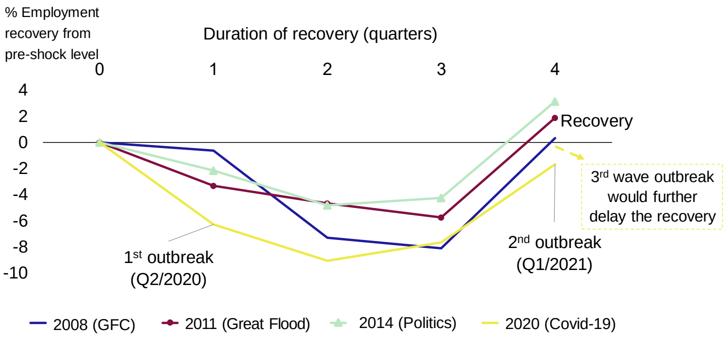


Chart 3.2 Recovery in labor markets would be W-shaped and slower than in the past.

Recovery of private non-farm employment* from the level before shock

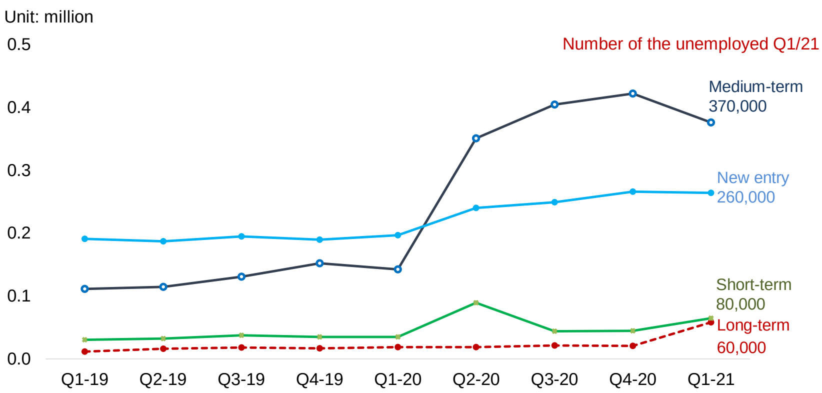


Note: * Calculated from a sample of 11.4 million private sector employees outside the agricultura and construction sectors

The Committee viewed that the recurring outbreaks increased labor market fragility. Recovery in labor markets would be W-shaped and slower than the past (Charts 3.2 and 3.3). It was expected that the number of people who transition from medium-term unemployment into long-term unemployment or exit the labor force would increase, most being from the services sector. This group of labor were dismissed but were unable to reallocate to the manufacturing sector where a recovery is underway due to skill mismatch. Meanwhile, the newly-graduated unemployed would continue to rise. **Against this backdrop, the government should address vulnerabilities in the labor markets in an adequate and continuous manner to reduce long- term scarring effects after the COVID-19 outbreak subsided.**

Chart 3.3 The labor markets became more fragile due to higher number of the long-term unemployed and those exiting the labor force.

Number of unemployed persons (seasonally-adjusted) classified by duration of unemployment



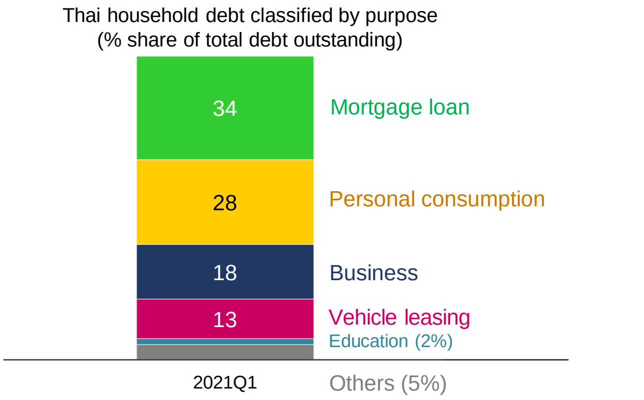
Note: The definitions for the duration of unemployment are as follows. Short-term: less than 1 month, medium-term: 1 month – 1 year, long-term: more than 1 year

Source: Labor Force Survey, National Statistical Office of Thailand, calculations by the Bank of Thailand

The balance sheets of businesses and households became more vulnerable after recurring waves of outbreak. The continuity of government measures and policy coordination among agencies would be needed given the highly uncertain recovery.

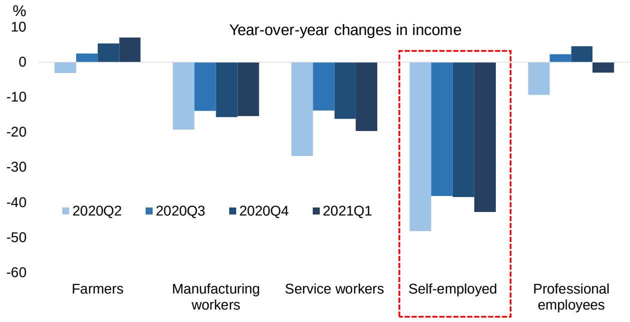
Multiple waves of COVID-19 outbreak exacerbated the fragile balance sheets of businesses and households. Businesses, especially SMEs and tourism-related services whose financial positions had been already fragile, were further affected by stricter containment measures. Credit risks also increased as a result of greater business uncertainties, making it harder for some businesses to access credit. Vulnerabilities in household balance sheets had been accumulating before the pandemic due to elevated debt levels. Most household debt are consumer loans which are short-term and carry high interest rates, resulting in a high monthly debt burden (Chart 3.4). Meanwhile, household savings had been low in recent periods and would likely decline further. In this regard, the fragilities in household financial positions stemmed from both high debt burden and low savings. This was then exacerbated by the income shock from recurring outbreaks, especially for employees in the services sector and the self-employed (Chart 3.5). As a result, private consumption would be negatively affected and default risks would increase.

Chart 3.4 Most Thai household debt are for consumption purposes, which are short-term and carry high interest rates, leading to a high monthly debt burden



Note: Other household debt comprises loans for purchasing securities and loans for unclassified purposes
Source: Bank of Thailand

Chart 3.5 Household vulnerabilities increased most for the self-employed workers as reflected by a significant income fall, partly due to the containment measures.



Note: (1) Income of the self-employed are estimates from their economic activities
(2) Income of employees are calculated from income of those working more than 24 hours per week.
Source: SES and LFS (National Statistical Office), OAE, calculations by the Bank of Thailand

The Committee viewed that the continuity of government measures and policy coordination among agencies would be critical given the highly uncertain economic recovery (**Box:** *Risks to Thailand's economic recovery in the period ahead*). Measures should be designed so that they are well-targeted, adequate, and timely to provide a swift relief from the impact of the new wave outbreak. Fiscal measures must continue to provide adequate and continuous economic stimulus. Monetary policy must remain accommodative. The implementation of targeted financial and credit measures should be expedited. These include the special loan facility, the asset warehousing program, and other financial measures from specialized financial institutions (SFIs) to distribute liquidity to businesses and households affected by the new wave, reduce debt burden, restore the economy, and encourage financial institutions to continuously expedite debt restructuring for its borrowers. The Bank of Thailand (BOT) would continue to monitor and assess the progress of these measures closely going forward.

The Committee viewed that the BOT should assist financial institutions to expedite additional assistance to help borrowers. In the short term, measures to reduce debt burden, generate income, and reduce expenses to enhance liquidity for affected households should be expedited**.** For example, the measures should expand the options for debt restructuring tailored to debt servicing ability of the borrowers and increase the channels for credit assistance through SFIs and key non-banks in the retail loan market**.** The Committee also viewed that the extension of debt assistance programs for retail borrowers and the amendments in supervisory regulations would help financial institutions further assist the affected borrowers and address fragile household balance sheets (**Box:** *BOT's latest debt relief measures*). **In the long run** all parties must cooperate to push forward measures to sustainably solve Thailand's household debt problem and strengthen households' financial resilience against future uncertainties**.** The measures should emphasize the prevention of excessive debt formation, promote financial literacy, and expand options for reducing debt burden such as the refinancing market for retail borrowers**.** In addition, measures to generate sustainable income and promote long-term savings would also be necessary**.**

Thailand's economic structure and long-term growth potential will change after the pandemic subsides. Structural reforms will be critical to uplift Thailand's long-term growth potential.

The Committee reiterated the need for structural reform policies to raise the long-term potential growth of the Thai economy which had been affected by recurring waves of COVID-19 outbreak. This was reflected by the uneven recovery across different sectors, especially the severely affected tourism sector, as well as the more fragile financial positions of businesses and households. **Moreover, multiple waves of COVID-19 outbreak also aggravated existing structural problems** namely aging population, rising income inequality with parts of the labor force facing longer unemployment and the self-employed earning less income, and excess capacity in some businesses. As a result of these structural problems, Thailand's long-term growth potential would likely decline going forward. **The Committee viewed that all related parties should jointly support structural transformation of the Thai economy by identifying key objectives and establish policy guidelines for both the short and long term as well as push forward their implementation.** Upskilling and reskilling workers for the post-COVID environment and developing digital infrastructures would foster a sustainable economic recovery and bolster the resilience of the Thai economy against future negative economic shocks.

The Committee continued to put emphasis on supporting the economic recovery and stood ready to use additional appropriate monetary policy tools if necessary.

Under the monetary policy framework with the objectives of maintaining price stability, supporting sustainable and full-potential economic growth, and preserving financial stability, the Committee continued to put emphasis on supporting the economic recovery. In addition, the Committee would monitor key factors affecting the economic outlook, namely the distribution and efficacy of vaccines, the possibility of the outbreak situation in Thailand and abroad becoming more severe owing to virus mutations, as well as the adequacy of fiscal, financial, and credit measures. The Committee would stand ready to use additional appropriate monetary policy tools if necessary.

Risks to Thailand's economic recovery in the period ahead

The Thai economy would likely experience a slower and more uneven economic recovery as a result of the third-wave outbreak. This most recent wave had been severe and protracted to the point of impacting domestic demand and exacerbating the fragile balance sheets of businesses and households. In the period ahead, economic growth would be supported by fiscal measures namely the recent Emergency Decree authorizing 500 billion baht of government borrowing and from the progress of vaccine procurement. Nevertheless, there are significant downsides from the new wave of outbreak in Thailand and abroad that would likely become more severe due to virus mutations and possible declines in vaccine efficacy. This would have significant impact on Thailand's economic recovery particularly for the tourism sector. In this regard, the most important priorities for the Thai economy at the present are procuring and distributing the appropriate vaccines in an adequate and timely manner to reduce downside risks to growth over the next six months. Meanwhile, all parties must help expedite the implementation of various measures, both financial and fiscal, to produce swift results and support the economy through these difficult times.

Chart 1. The Thai economy received additional tailwinds from financial and fiscal measures, but faced risks stemming from virus mutations.

Note: Changes in the assessment from the previous *Monetary Policy Report (March 2021) are in* ***bold****.*

	H2 - 2021	H1 - 2022	H2 - 2022
Tailwinds	- Expedited budget disbursement before the end of fiscal year - Widespread vaccination in Thailand and abroad - Progress of the special loan facility and the asset warehousing program **- Expenditure under the new 500 billion baht Emergency Decree** **- Additional government measures ("Half-Half" co-payment scheme, "Ying Chai Ying Dai" scheme)** **- Foreign tourists are admitted into Thailand under tourism sandbox programs.**	- Foreign tourists are able to travel to Thailand without being subject to quarantine requirements, but vaccination and COVID-19 test certificates are still required. - Thailand achieves herd immunity due to sufficient vaccine distribution.	- Other countries achieve herd immunity due to sufficient vaccine distribution. - Thailand re-opens for commercial flights and foreign tourists are able to enter the country without the need to present vaccination and COVID-19 test certificates.
	- Good progress in infrastructure investment and public-private partnership (PPP) projects, especially in the EEC, helps to improve the investment climate in Thailand.		

<table>
<tr><th></th><th>H2 - 2021</th><th>H1 - 2022</th><th>H2 - 2022</th></tr>
<tr><td rowspan="2">Headwinds</td><td rowspan="2">- Credit relief and other financial measures expire at the end of 2021.
- Fiscal stimulus under the 1 trillion baht Emergency Decree gradually phases out.
- The outbreak becomes more protracted than expected and affects domestic spending.
- The government is unable to reduce quarantine requirements from 14 days to 7 days.
- Supply disruptions have significant impact and last longer than expected.</td><td></td><td>- The 500 billion baht Emergency Decree expires in September 2022.</td></tr>
<tr><td colspan="2">Government spending is lower than expected due to a smaller FY2022 budget.</td></tr>
<tr><td>Risks</td><td>- The efficacy and coverage of vaccine distribution remain uncertain.
- Virus mutations reduce vaccine efficacy.
- The re-opening of Thailand’s borders is delayed due to concerns over the virus mutations and vaccination delays in Thailand and abroad.
- Supply disruptions could become more severe.</td><td>- Tourism could change in the post-COVID world, resulting in lower-than-expected foreign tourist figures.
- Infrastructure investment and public-private partnership investment projects are delayed.</td><td></td></tr>
</table>

Tailwinds to growth in addition to those already stated in the previous *Monetary Policy Report* come from the more broad-based distribution of vaccines, additional fiscal measures, and the re-opening of Thailand’s borders to foreign tourists under the sandbox programs.

In the second half of 2021, tailwinds to economic growth would come from the ramping up of vaccines distribution across the country and the additional fiscal measures in response to the third-wave outbreak. The latter include the “Half-Half” co-payment scheme and the “Ying Chai Ying Dai” scheme to provide income support for those affected by the outbreak and boost domestic spending. Other fiscal measures are expedited FY2021 budget disbursement and the commencement of government spending under the new 500 billion baht Emergency Decree. Financial measures such as the special loan facility and the asset warehousing program would continue to provide liquidity support for businesses and help alleviate debt burden. In addition, the re-opening of Thailand’s borders to foreign tourists under the sandbox programs in certain tourist destinations would also foster a gradual resumption of economic activities. **For the first half of 2022, the re-opening of Thailand’s borders to foreign tourists without quarantine requirements if travelers possess vaccination and**

COVID-19 test certificates would help support the recovery in foreign tourist arrivals and in tourism-related services.

Risks to growth in addition to those assessed in the previous *Monetary Policy Report* are delays in the re-opening of Thailand's borders due to concerns over the mutations of COVID-19 and delays in COVID-19 vaccine distribution in Thailand and abroad.

Risks to growth increased due to potential delays in the re-opening of Thailand's borders due to concerns over the virus mutations and delays in COVID-19 vaccines distribution in Thailand and abroad. **If the mutations of COVID-19 result in deadlier variants of the virus and reduce vaccine efficacy to the extent that new vaccines must be developed, plans to admit foreign tourists into Thailand might have to be pushed back.** Toward the end of 2021, credit relief and other financial measures would expire and fiscal stimulus under the 1 trillion baht Emergency Decree would phase out. It would be necessary to monitor the situation closely and assess whether support is still needed. Supply disruptions such as the shortage of migrant workers and containers could become more severe and prolonged, impacting the manufacturing sector. However, this situation was expected to be resolved within the first half of 2022.

Government measures would play a key role in driving Thailand's economic recovery which remained highly uncertain. Economic growth requires adequate and sustained financial and fiscal measures.

Thailand's economic outlook remained highly uncertain and thus financial and fiscal measures would need to be adequate and sustained to alleviate the economic impact and restore economic growth. Monetary policy should remain accommodative. **Financial measures and credit reliefs** should channel liquidity to those affected in a well-targeted and timely manner and help support the economic restoration efforts going forward. Debt restructuring should also be expedited to reduce vulnerabilities among businesses and households. The BOT must monitor and assess the effectiveness of the various measures closely, especially the asset warehousing program so that it could be adjusted to better suit the evolving circumstances.

Fiscal measures must continue to support the economy by sustaining an expansionary fiscal impulse. The government should also prepare additional fiscal measures as contingency for the worst-case scenario. Meanwhile, **supply-side policies** should be implemented to transform business models and upgrade labor skills so as to support a strong and sustainable economic recovery.

BOT's latest debt relief measures

The highly uncertain COVID-19 outbreak had a broader and more severe impact on the economy. Many workers were affected by the sharp decline in income and their debt repayment capabilities deteriorated. Individual borrowers that received assistance from the recent measures still required continued support. New debtors whose fragile balance sheets were exacerbated by the new wave of COVID-19 outbreak also required assistance.

In response, the BOT announced the third phase of its debt relief measures for retail borrowers on May 14, 2021. In this third phase, existing measures were upgraded to respond to the more severe situation and the focus shifted toward reducing the debt burden in the long-term so that debtors have more options and flexibility, and were clearly aware of the various procedures. The BOT collaborated with eight financial service provider groups[11/] to ensure that the credit relief measures could appropriately support affected borrowers. The measure covered four types of loans (details in Chart 1 and 2). Debtors could apply for debt relief until December 31, 2021. Financial service providers could also provide additional assistance on top of the BOT's measures.

Chart 1 An overview of the third phase of the BOT's debt relief measure for individual borrowers

[11/] These 8 groups include (1) The Thai Bankers' Association, (2) The Association of International Banks, (3) The Government Financial Institutions Association, (4) Thai Hire-Purchase Association, (5) Vehicle Title Loan Trade Association, (6) Thai Motorcycle Hire-Purchase Association, (7) Credit Card Club of the Thai Bankers' Association, and (8) Personal Loan Club

Chart 2 Details of assistance measures for retail borrowers

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BANK OF THAILAND

Measures to help retail borrowers - Phase 3

Credit card and personal loans

1. **Convert to long-term debt or reduce loan repayment**
2. **In case of extension beyond 48 installments,** the financial service provider will revise down the interest rate to be lower than the designated rate
3. **Consolidate debt,** combining mortgage loans and other retail credits

Car and motorcycle registration loans

Car registration loans

1. **Reduced installments**
2. **For heavily affected debtors** there are two options to choose from
   - Installment holiday
   - Return the vehicle for debtors unable to repay. If the actual auction price of the vehicle is lower than debt obligation in the contract, the provider can lower debt burden in line with the debtor's potential.
3. **Consolidate debt,** combining mortgage loans and other retail credit

Motorcycle registration loans

1. **Reduced installments** 2. **Consolidate debt,** combining mortgage loans and other retail credit

Car and motorcycle hire purchase

Car hire purchase

1. **Reduced installment or extended contract period**
2. **For heavily affected debtors,** there are two options to choose from
   - Installment holiday no interest or interest calculated from the installment base during holiday
   - Return the vehicle for debtors unable to repay. If the actual auction price of the vehicle is lower than debt obligation in the contract, the provider can lower debt burden in line with the debtor's potential.

However, the effective interest rate (EIR) calculated throughout the contract period in options 1 and 2 must be lower than the original EIR

3. **Consolidate debt,** combining mortgage loans and other retail credit
4. **If debtors fully repay the loan all at once to close the account,** the calculation on interest not yet due would be reduced by at least 50 percent according to the requirements of the OCPB

Motorcycle hire purchase

1. **Reduced installment or extended contract period. New contract's EIR must be lower than original.**
2. **Consolidate debt,** combining mortgage loans and other retail credit
3. **If debtors fully repay the loan all at once to close the account,** the calculation on interest not yet due would be reduced by at least 50 percent according to the requirements of the OCPB

Mortgage loans
or loans using residence as collateral

1. **Alleviate debt burden** by reducing installment or suspending the principal and partially service interest or suspending the principal and consider reducing interest or suspending installment
2. **Gradually repay in a step-up manner** in line with debtor's debt servicing capability after the reduction in installments or loan payment holiday
3. **Consolidate debt,** combining mortgage loans and other retail credit

- Financial service providers can provide additional assistance on top of BOT measures, according to each provider's announced policies.
- For debtors with potential, please continue to make loan repayments so as to not increase interest burden in the long term.

Bank of Thailand

Aside from the third phase of debt relief measures, **the BOT announced on June 10, 2021, a review of its banking regulations so that financial institutions could provide additional assistance** for debtors affected by the most recent wave of COVID-19 outbreak**. Further, the BOT implemented mechanisms to incentivize financial institutions to expedite the debt restructuring efforts taking into account the debtor's potential and ability to adjust in the future** while maintaining the stability and sound risk management of the financial institution system by extending debt moratorium to December 31, 2021 as detailed in Chart 3.

Chart 3 Additional financial institution supervision policies

Financial institution supervision policies to channel assistance to debtors affected by the COVID-19 outbreak

1 Extend debt moratorium for affected SMEs until the end of 2021

- Heavily affected debtors that cannot assess future cash flows
- Include SMEs according to the current definition of each financial institution
- Financial institutions can maintain the original debt classification until Dec 31, 2021

2 Incentivize financial institutions (FIs) to expedite debt restructuring in line with debtor potential

- Restructure debt by considering:
  1) Debtor's ability to repay
  2) Repayment period in line with expected future income
- The BOT maintains flexibility in enforcing guidelines regarding loan classification and reserves, if FIs assist debtors in addition to extending the repayment period

3 Allow financial institutions (FIs) to pay interim dividends at specified rates, maintaining proactive measures in safeguarding financial institution system stability.

1. **FIs can pay interim dividend under the condition that dividends are:**
   - **Lower than dividends paid in 2021 and**
   - **Do not exceed 50% of H1-2021 net profit**
2. **Refrain from share buybacks and the redemption or buybacks of debt before maturity** except for replacing old debt.

1. FIs still maintain adequate capital buffers and reserves to tackle the severe COVID-19 outbreak
2. FIs have gradually increased reserves and capital buffers continuously. Total Capital Ratio and NPL Coverage Ratio of financial institutions remained high at 20 and 150 percent respectively, as of Q1 2021
3. Help preserve financial institution system stability to cushion against high uncertainties in the period ahead, benefiting stakeholders, depositors, and borrowers of financial institutions in the long term
4. Consistent with financial institution regulations of other countries

The BOT will assess the situation and monitor FIs' assistance measures for debtors to determine the policy guidelines for interim dividends in the fourth quarter of 2021

4. Appendix

Thai Economy Dashboard

Percent	2019	2020	2019	2020				2021
			Q4	Q1	Q2	Q3	Q4	Q1
GDP growth	2.3	-6.1	1.3	-2.1	-12.1	-6.4	-4.2	-2.6
Production								
Agriculture	-0.6	-3.4	-3.1	-9.9	-3.1	-1.1	0.4	1.9
Non-agriculture	2.5	-6.3	1.8	-1.3	-12.9	-6.7	-4.7	-3.0
Manufacturing	-0.7	-5.7	-2.2	-2.4	-14.7	-5.3	-0.7	0.7
Construction	1.6	2.3	-3.1	-9.3	7.5	10.8	-0.3	12.7
Wholesales and retail trade	4.5	-3.7	3.9	3.6	-10.9	-6.1	-3.1	-2.1
Transport and storage	3.0	-21.0	3.4	-5.5	-36.6	-22.2	-21.1	-17.7
Accommodation and Food Service	7.8	-36.6	9.3	-23.3	-49.9	-39.3	-35.2	-35.0
Information and Communication	12.3	4.7	14.2	4.4	4.1	4.5	5.4	4.6
Financial intermediation	2.2	2.7	2.5	4.3	1.7	1.6	3.3	3.4
Real estate and renting	3.8	1.4	3.3	1.7	0.9	1.5	1.3	2.2
Expenditure								
Domestic demand	3.0	-1.6	2.0	-0.6	-5.6	-0.5	0.3	1.9
Private consumption	4.0	-1.0	3.6	2.7	-6.7	-0.6	0.9	-0.5
Private investment	2.7	-8.4	2.5	-5.3	-14.9	-10.6	-3.3	3.0
Government consumption	1.7	0.9	-0.8	-2.5	1.0	2.5	2.2	2.1
Public investment	0.1	5.7	-5.7	-9.1	12.6	17.6	0.6	19.6
Imports of goods and services	-5.2	-13.3	-9.5	-3.0	-23.6	-19.3	-7.0	1.7
imports of goods	-5.8	-11.2	-9.1	-2.2	-21.2	-18.1	-3.1	6.4
imports of services	-2.7	-21.1	-11.0	-6.2	-32.4	-23.9	-22.1	-15.4
Exports of goods and services	-3.0	-19.4	-3.0	-5.8	-27.5	-23.3	-21.5	-10.5
exports of goods	-3.7	-5.8	-5.5	1.7	-15.8	-7.5	-1.5	3.2
exports of services	-0.5	-60.1	4.9	-26.8	-67.7	-73.1	-75.2	-63.5
Trade balance (billion, U.S. dollars)	26.7	40.9	6.0	9.2	8.8	14.1	8.7	7.4
Current account (billion, U.S. dollars)	38.2	17.6	11.6	9.9	1.2	7.2	-0.8	-3.4
Financial account (billion, U.S. dollars)	-15.7	-5.5	-5.5	-8.4	9.8	-4.1	-2.8	-5.7
International reserves (billion, U.S. dollars)	224.3	258.1	224.3	226.5	241.6	251.1	258.1	245.5
Unemployment rate (%)	1.0	n.a.	1.0	1.0	2.0	1.9	1.9.	2.0
Unemployment rate, seasonally-adjusted (%)	n.a.	n.a.	1.1	1.1	1.8	1.8	1.9.	1.9

Source: Office of the National Economic and Social Development Board National Statistical Office and Bank of Thailand

Financial Stability Dashboard

Indicators	2019	2020	2019	2020				2021		
			Q4	Q1	Q2	Q3	Q4	Q1	Apr	May
1. Financial market sector										
Bond market										
Bond spread (10 years - 2 years)	0.3	0.9	0.3	0.6	0.8	0.8	0.9	1.5	1.3	1.3
Equity market										
SET index (end of period)	1,590.6	1,449.4	1,579.8	1,125.9	1,339.0	1,237.0	1,449.4	1,587.2	1,583.1	1,593.6
Actual volatility of SET index[1/]	10.0	30.4	10.1	47.4	25.2	13.7	23.0	13.6	14.1	14.7
Price to Earnings ratio (P/E ratio) (times)	19.4	28.8	19.4	13.1	18.9	21.2	28.8	41.4	41.0	30.6
Exchange rate market										
Actual volatility of Thai baht (%annualized)[2/]	4.1	5.4	2.7	5.5	5.5	5.3	5.2	4.4	4.6	4.5
Nominal Effective Exchange Rate (NEER)	123.2	122.6	126.8	123.3	122.5	122.0	122.5	122.8	119.8	119.2
Real Effective Exchange Rate (REER)	112.8	110.2	115.3	114.4	113.0	111.1	110.4	109.1	107.4	106.0
2. Financial institution sector[3/]										
Minimum Lending Rate (MLR)[4/]	6.08		6.08	5.93	5.36	5.36	5.36	5.36	5.36	5.36
12-month fixed deposit rate[4/]	1.33		1.33	0.75	0.49	0.49	0.49	0.44	0.42	0.42
Capital adequacy										
Capital funds / Risk-weighted asset (%)	19.6	20.1	19.6	18.7	19.2	19.8	20.1	20.0	n.a.	n.a.
Earning and profitability										
Net profit (billion, Thai baht)	270.8	145.2	56.4	67.5	32.4	28.0	17.1	43.8	n.a.	n.a.
Return on assets (ROA) (times)	1.4	0.7	1.4	1.0	0.6	0.5	0.3	0.8	n.a.	n.a.
Liquidity										
Loan to Deposit and B/E (%)	96.2	92.3	96.2	92.5	92.8	93.0	92.3	92.2	n.a.	n.a.
3. Household sector										
Household debt to GDP (%)	79.8	89.3	79.8	80.2	83.8	86.6	89.4	90.5	n.a.	n.a.
Financial assets to debt (times)	3.0	2.9	3.0	2.8	2.9	2.9	2.9	n.a.	n.a.	n.a.
Non-Performing Loans (NPLs) of commercial banks (%)										
Consumer loans	2.9	2.8	2.9	3.2	3.1	2.9	2.9	2.9	n.a.	n.a.
Housing loans	3.7	3.8	3.7	4.0	4.0	3.9	3.8	3.7	n.a.	n.a.
Auto leasing	1.9	1.4	1.9	2.1	1.9	1.6	1.4	1.6	n.a.	n.a.
Credit cards	2.4	2.4	2.4	3.5	3.0	2.4	2.4	3.0	n.a.	n.a.
Other personal loans	2.3	2.4	2.3	2.6	2.5	2.3	2.4	2.5	n.a.	n.a.
4. Non-financial corporate sector[5/]										
Operating profit margin (OPM) (%)	6.9	6.5	6.6	6.3	4.6	7.4	7.6	9.3	n.a.	n.a.
Debt to Equity ratio (D/E ratio) (times)	0.7	0.8	0.7	0.9	0.8	0.8	0.8	0.8	n.a.	n.a.
Interest coverage ratio (ICR) (times)	5.2	4.0	3.9	3.8	2.7	4.3	5.7	6.6	n.a.	n.a.
Current ratio (times)	1.6	1.6	1.6	1.5	1.5	1.5	1.6	1.6	n.a.	n.a.
Non-Performing Loans (NPLs) of commercial banks (%)										
Large businesses	2.6	3.1	2.6	2.6	3.0	3.1	3.1	3.1	n.a.	n.a.
SMEs	6.3	6.9	6.3	6.7	6.3	6.6	6.9	7.3	n.a.	n.a.

Note:

[1/] Calculated by 'annualized standard deviation of return' method

[2/] Daily volatility (using exponentially weighted moving average method)

[3/] Based on data of all commercial banks

[4/] Average value of 5 largest Thai commercial banks

[5/] Only listed companies on Stock Exchange of Thailand (median value); with data revisions

Financial Stability Dashboard (continue)

Indicators	2019	2020	2019	2020				2021		
			Q4	Q1	Q2	Q3	Q4	Q1	Apr	May
5. Real estate sector										
Number of approved mortgages from commercial banks (Bangkok and Vicinity) (units)										
Total	70,876	70,950	18,042	14,882	17,531	18,977	19,560	15,958	4,484	5,195
Single-detached and semi-detached houses	16,167	17,367	4,125	3,553	4,408	4,790	4,616	4,445	1,217	1,509
Townhouses and commercial buildings	24,763	23,062	5,625	5,314	5,559	6,128	6,061	5,709	1,587	1,877
Condominiums	29,946	30,521	8,292	6,015	7,564	8,059	8,883	5,804	1,680	1,809
Number of new housing units launched for sale (Bangkok and Vicinity) (units)										
Total	116,933	73,022	34,254	18,591	11,535	23,122	19,774	9,732	3,283	4,597
Single-detached and semi-detached houses	19,423	17,746	5,738	3,682	3,495	5,483	5,086	2,183	786	1,427
Townhouses and commercial buildings	31,423	29,370	8,925	8,132	6,046	9,396	5,796	2,652	1,537	2,668
Condominiums	66,087	25,906	19,591	6,777	1,994	8,243	8,892	4,897	960	502
Housing price index (2009 = 100)										
Single-detached houses (including land)	144.0	150.3	146.3	149.1	151.3	150.51	150.38	152.19	152.2	152.4
Townhouses (including land)	156.4	163.6	159.8	164.0	164.7	162.40	163.17	165.31	166.0	166.5
Condominiums	182.3	184.8	191.6	190.0	190.2	179.24	179.86	192.67	191.8	191.9
Land	172.8	186.5	180.6	181.6	185.1	188.52	190.79	195.25	196.7	197.4
6. Fiscal sector										
Public debt to GDP (%)	41.2	51.8	41.2	41.7	45.8	49.4	51.8	54.3	54.9	n.a.
7. External sector										
Current account balance to GDP (%)[6/]	7.0	3.5	8.1	7.4	1.1	5.8	-0.5	-2.5	n.a.	n.a.
External debt to GDP (%)[7/]	34.2	36.7	34.2	32.4	33.6	33.4	36.7	35.9	n.a.	n.a.
External debt (billion, U.S. dollars)	171.9	190.2	171.9	165.3	171.7	171.6	190.2	186.4	n.a.	n.a.
Short-term (%)	34.8	39.1	34.8	35.9	36.0	36.1	39.1	38.7	n.a.	n.a.
Long-term (%)	65.2	60.9	65.2	64.1	64.0	63.9	60.9	61.3	n.a.	n.a.
International reserves / Short-term external debt (times)	3.8	3.5	3.8	3.8	3.9	4.0	3.5	3.4	3.5	3.5

Note:

[6/] Current account / Nominal GDP at the same quarter

[7/] External debt / 3-year average nominal GDP

Table: Probability distribution of GDP growth forecast

Percent	2021			2022				2023
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
> 18	0	0	0	0	0	0	0	0
16.0-18.0	0	0	0	0	0	0	0	1
14.0-16.0	0	0	0	0	1	1	1	1
12.0-14.0	1	0	0	1	3	2	2	3
10.0-12.0	7	0	0	3	6	4	5	6
8.0-10.0	23	2	2	6	12	9	10	11
6.0-8.0	28	6	5	12	19	16	17	16
4.0-6.0	16	17	12	18	21	21	21	19
2.0-4.0	14	28	20	21	18	21	19	18
0.0-2.0	9	22	24	18	11	14	13	13
(-2.0)-0.0	2	15	19	12	5	8	6	7
(-4.0)-(-2.0)	0	7	11	6	2	3	3	3
(-6.0)-(-4.0)	0	2	5	2	1	1	1	2
< -6	0	0	3	2	0	1	1	1

Table: Probability distribution of headline inflation forecast

Percent	2021			2022				2023
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
> 4	0	0	1	3	1	1	1	1
3.5-4.0	0	1	2	4	2	1	2	2
3.0-3.5	4	3	5	8	4	3	3	4
2.5-3.0	24	8	9	13	7	6	6	6
2.0-2.5	43	15	15	17	11	9	9	9
1.5-2.0	24	21	18	18	15	13	13	12
1.0-1.5	4	22	18	15	17	15	15	14
0.5-1.0	0	16	15	11	16	16	15	14
0.0-0.5	0	9	9	6	12	14	13	12
(-0.5)-0.0	0	3	5	3	8	10	10	10
(-1.0)-(-0.5)	0	1	2	1	4	6	7	7
(-1.5)-(-1.0)	0	0	1	0	2	3	4	4
(-2.0)-(-1.5)	0	0	0	0	1	2	2	2
< -2	0	0	0	0	0	1	1	2

Table: Probability distribution of core inflation forecast

Percent	2021			2022				2023
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
> 2.1	0	0	0	0	0	1	1	1
1.8-2.1	0	0	0	1	1	1	2	2
1.5-1.8	0	1	2	2	2	3	4	5
1.2-1.5	1	2	4	5	5	6	7	8
0.9-1.2	7	6	8	9	9	10	11	12
0.6-0.9	20	13	13	13	14	14	14	15
0.3-0.6	30	19	17	16	16	16	16	16
0.0-0.3	25	21	18	16	16	16	15	14
(-0.3)-0.0	12	17	15	14	14	13	13	11
(-0.6)-(-0.3)	3	11	11	11	10	10	9	8
(-0.9)-(-0.6)	1	6	7	7	6	6	5	4
(-1.2)-(-0.9)	0	2	3	4	3	3	3	2
(-1.5)-(-1.2)	0	1	1	2	2	1	1	1
< -1.5	0	0	1	1	1	1	1	0

Pursuing Sustainable Economic Well-Being

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