ธนาคารแห่งประเทศไทย
BANK OF THAILAND

Monetary Policy Report
Q4/2023

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

Mr. Sethaput Suthiwartnarueput	Chairman
Mrs. Alisara Mahasandana	Vice Chairman
Mrs. Roong Mallikamas	Member
Mr. Paiboon Kittisrikangwan	Member
Mr. Rapee Sucharitakul	Member
Mr. Roongrote Rangsiyopash	Member
Mr. Santitarn Sathirathai	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 27, 2022, the Cabinet approved the monetary policy target for 2023, 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 2023. 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. Furthermore, 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.

The MPC has adopted the managed float exchange rate regime to stabilize and limit the volatilities in the exchange rate, as to let the baht reflect economic fundamentals

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) publishing a press statement at 14:00 and holding a press conference regarding the results of the meeting at 14:30 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.

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Data in this report is as of 28 November 2023 (1 day prior to the monetary policy decision)

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Assessment of the macroeconomic outlook

Global economy

Trading partners' economies are projected to expand by 2.8% in 2023, 2.6% in 2024, and 2.7% in 2025. The US economy would be driven by private consumption. Meanwhile, China and Japan are expected to see stronger growth in 2024 due to new stimulus measures from their governments. Overall, the global economic recovery is underway with more balanced growth across the manufacturing and services sectors. In particular, the manufacturing sector is expected to recover in line with the upturn in the global electronic cycle in 2024. **Nonetheless, there remain risks to the global economic outlook** namely the cumulative impact of monetary tightening by major central banks, a sharper-than-expected downturn in global trade due to weak demand from China, and protracted geopolitical tensions.

The Thai economy

The Thai economy continues to recover with growth projected to be 2.4% in 2023, 3.2% in 2024, and 3.1% in 2025. For 2023, the economic recovery has been driven by a strong expansion in private consumption especially services spending, as well as improvements in employment and labor income. Meanwhile, the tourism sector recovery has been slower than expected due to a slow recovery in foreign tourist arrivals from China (Box 1: The slow recovery of foreign tourist arrivals from China and implications for the tourism sector). Merchandise exports recovery in 2023 has been slower than expected partly due to the economic slowdown in China and a nascent recovery in the global electronic cycle. Looking ahead, the Thai economy is expected to see more balanced growth given continued recovery in the tourism sector alongside the turnaround in merchandise exports as external demand picks up with trading partners' growth and an upturn in the global electronic cycle (Box 2: Spillover effects from the global economy to Thai merchandise exports). However, there is a risk that Thai exports would not fully benefit from the global economic recovery in part due to structural impediments and lower competitiveness of Thailand's exports sector. In addition, there remains the need to monitor the implementation of government measures, especially the digital wallet scheme which remains unclear in detail. Taking into account the impact of the digital wallet scheme, Thailand's GDP growth would instead be 3.8% in 2024 and 2.8% in 2025 (Box 3: Macroeconomic forecast under the impact of the digital wallet scheme).

Inflation

Headline inflation is expected to be within the target range, averaging 1.3% in 2023, 2.0% in 2024, and 1.9% in 2025. If the impact of the digital wallet scheme is taken into account, headline inflation would instead be 2.2% in 2024 and 2.0% in 2025. The lower headline inflation in 2023 owes to a high base in the previous year and temporary factors such as government energy price subsidies and lower-than-expected raw food prices. **Meanwhile, core inflation is expected to be largely stable, averaging 1.3% in 2023, 1.2% in 2024, and 1.3% in 2025.** There remains the need to monitor the risks of potentially higher food prices due to El Niño and the increase in global energy prices from the Middle East conflicts.

Financial conditions and financial stability

Overall financial conditions have tightened somewhat. Private sector funding costs have increased as commercial banks' interest rates rose in tandem with the policy rate hike on 27 September 2023. Long-term government bond yields fell in line with the decline in US Treasury yields due to market expectations that the Fed might not be able to keep its policy rate high for as long as previously anticipated. Credit spreads remained largely unchanged from the previous quarter. In terms of financing volume, overall private credit growth slowed down in Q3/2023 due to debt repayments after having accelerated during the COVID-19 pandemic, and the expiry of various financial assistance measures. However, business loan growth is expected to pick up together with the recovery in economic activities going forward. **On exchange rates, the baht against the U.S. dollar depreciated on average from the previous quarter** driven mainly by market expectations regarding the Fed's monetary policy outlook.

The overall financial system remains resilient with commercial banks maintaining high levels of capital and loan loss provision. There is a need to continue monitoring credit quality for some SMEs and households with impaired debt serviceability, higher debt burden, and slower income recovery (Box 4: Thailand's household debt situation and financial vulnerability). The MPC supports the continuation of debt restructuring measures as well as targeted measures and sustainable debt resolution for vulnerable groups, particularly responsible lending measures.

Monetary Policy Decisions in the Fourth Quarter of 2023

At the meeting on 29 November 2023, the MPC voted unanimously to maintain the policy rate at 2.50%

The MPC deemed **the overall economic recovery to be intact** despite the absence of a broad-based recovery in 2023 from the slow recovery of merchandise exports and exports-related manufacturing sectors. However, the economy is expected to see more balanced growth in 2024 and 2025 driven by domestic demand, tourism, and the recovery in exports. Nonetheless, there remains the need to monitor the risk that Thai exports might not fully benefit from the global economic recovery and the upturn in the global electronic cycle due to Thailand's various structural impediments. **Inflation is expected to stabilize within the target range.** Headline inflation in 2023 declined due to a high base in the previous year and temporary factors, but should increase in 2024 and 2025 due to the economic recovery and supply-side pressures from El Niño.

The MPC deems the current policy rate to be appropriate given the current contexts where the economy is gradually recovering towards its potential. The current policy rate would also help sustain inflation within the target range, strengthen macroeconomic and financial stability over the long term, guard against the buildup of financial imbalances, and preserve policy space as an insurance against uncertain outlook. However, the macroeconomic outlook remains highly uncertain with both upside and downside risks stemming from (1) the global economic recovery; (2) the impact of conflicts in the Middle East; (3) the severity of El Niño; and (4) the impact of government measures such as the digital wallet scheme and living costs subsidies. **The MPC would take into account growth and inflation outlook as well as associated risks in deliberating monetary policy going forward.**

Global Economy: Key Issues

The global economic recovery remains underway

with signs of a more balanced recovery across the services and manufacturing sectors, as well as an expected upturn in global electronic cycle in 2024

Inflation in many countries has continued to decline

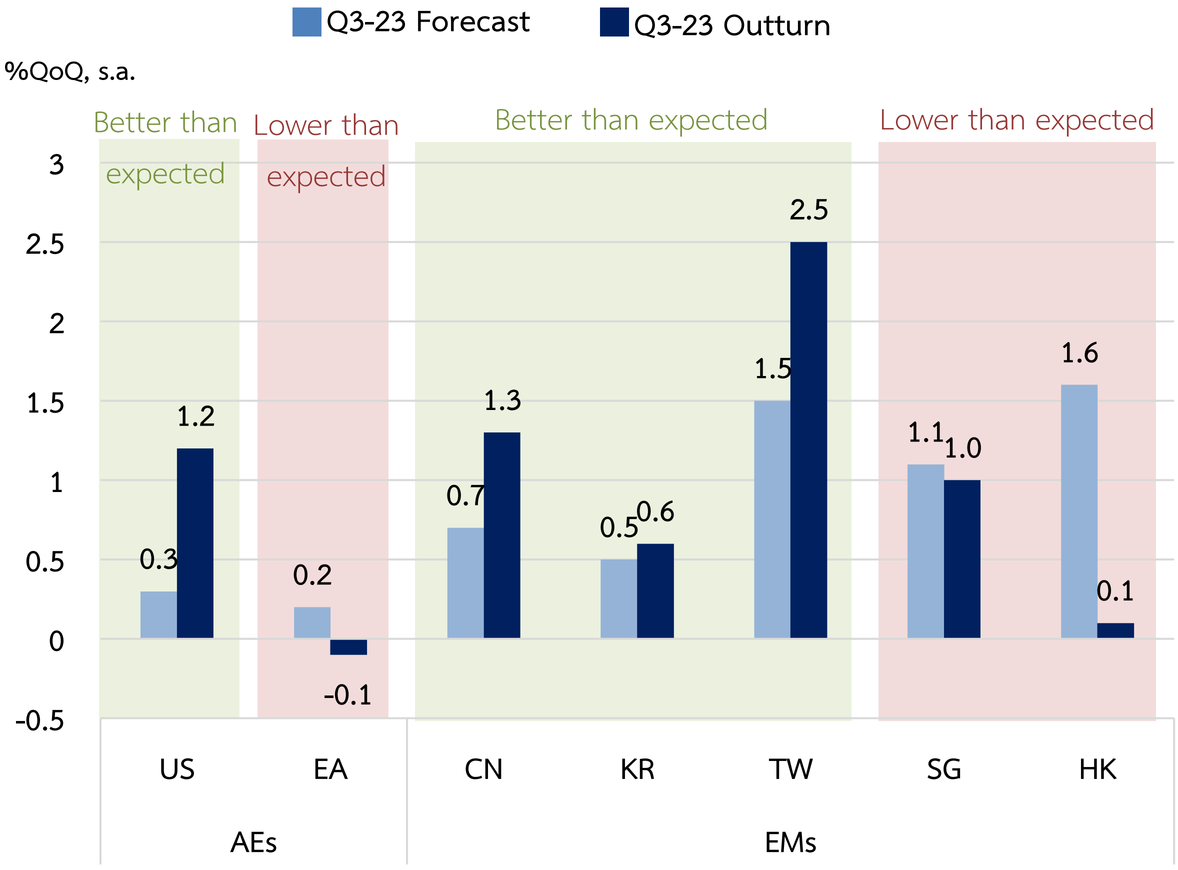
and most central banks have stopped raising their policy rates.

Trading partners' growth outlook faces downside risks

from cumulative impact of monetary policy tightening, slowdown in global trade, and geopolitical tensions.

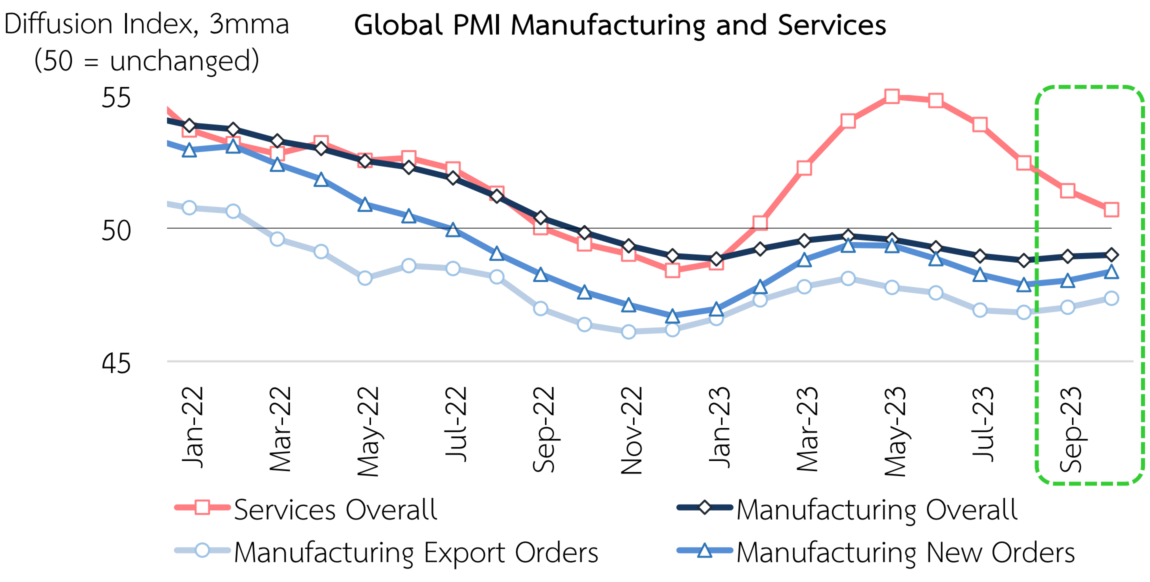
The global economy would continue to recover in 2023. The US economy continued to expand despite high inflation and high policy rate, while China is expected to see improving growth going forward. Overall, the recovery is likely to be more balanced across the manufacturing and services sectors.

GDP outturns for Q3-23 (%QoQ s.a.) were mostly better than expected



Source: CEIC, BOT calculations

Services sector slowed while manufacturing sector improved



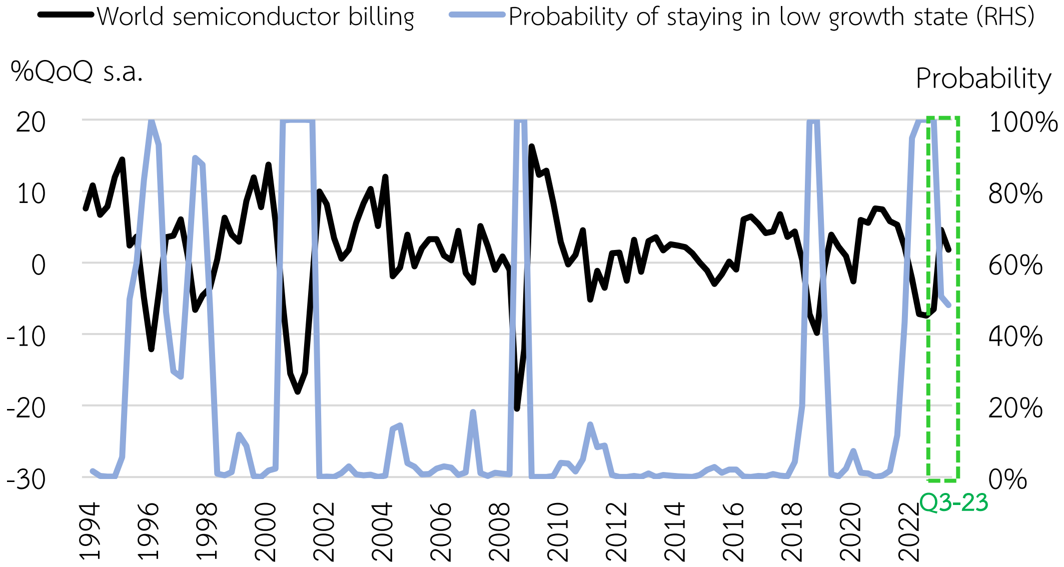
Source: CEIC, BOT calculations

Economic activities in the services sector slowed down after having accelerated earlier. Meanwhile, there are signs that activities in the manufacturing sector are gradually improving. Looking ahead, the recovery is likely to be more balanced across the services and manufacturing sectors. The services sector would still drive growth momentum for some countries like the US. On the other hand, the manufacturing sector would recover on the back of anticipated upturn in the global electronic cycle within next year.

The global electronic cycle is expected to recover in 2024

The global electronic cycle is likely to exit from the low-growth state

World semiconductor billing and the probability from Markov switching model



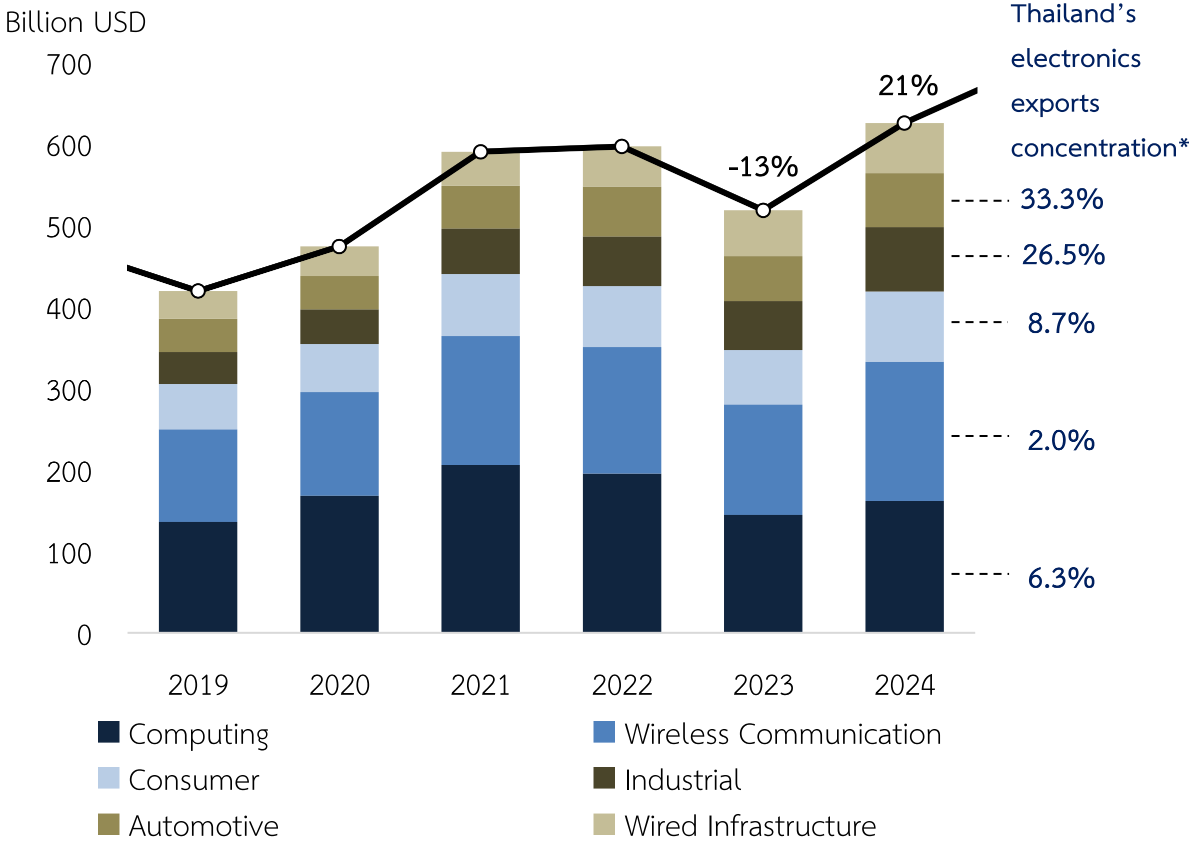
Note:

1. World semiconductor billing for Q3-66 is forecasted
2. Separate world semiconductor billing into 3 states: low-growth, moderate-growth, and high-growth. Low-growth state implies a downturn in the cycle alongside decreased demand and high inventories. Moderate- and high-growth state imply an upturn in the cycle. The average growth for low-, moderate-, and high-growth state were -6.9, 2.5, and 10.7 percent QoQ s.a., respectively.
3. Expected duration for a low-growth state is around 3-4 quarters (the current low-growth state began back in Q4-2022)

Source: CEIC, World Semiconductor Trade Statistics (WSTS) calculated by BOT

Demand for electronic goods is expected to expand in 2024

Semiconductor revenue estimates by industries

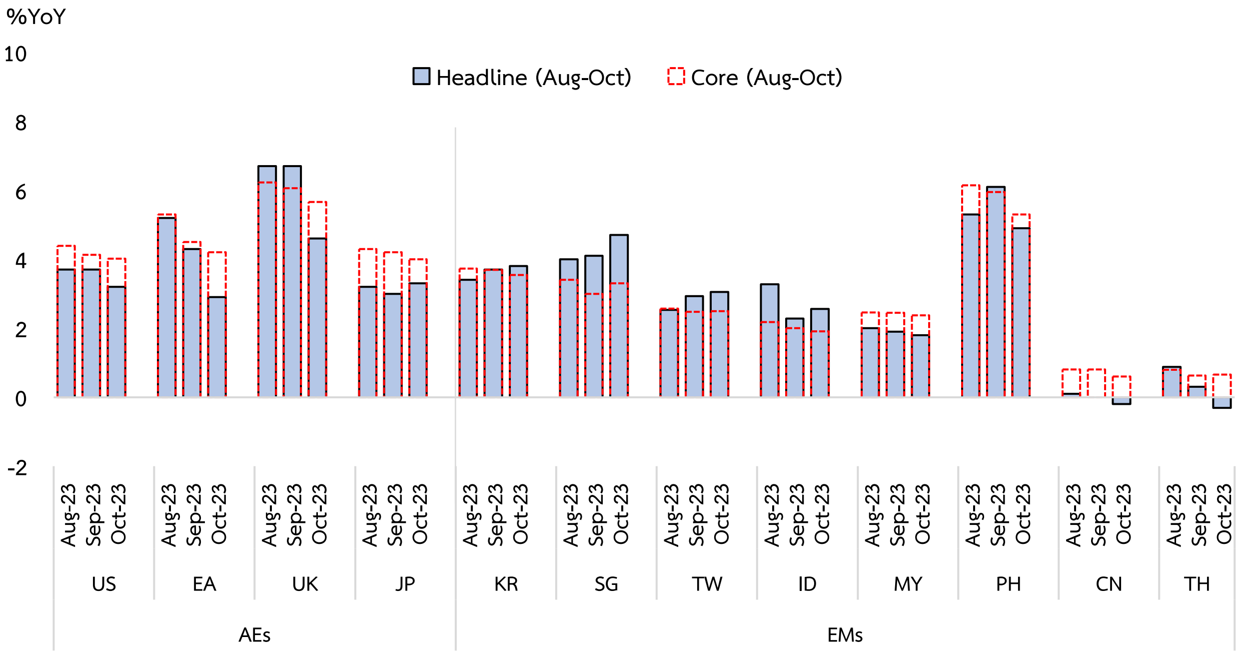


Note: * According to Thailand's top 6 electronic goods exporters as 100%, the shares of each categories to the overall electronic exports value are calculated (other electronics goods = 23.3%).

Source: IDC, Bloomberg Intelligence (as of Sep 23), Ministry of Commerce, and companies' annual report

Inflation in many countries has declined overall with most central banks placing a hold on their policy rate hikes.

Headline inflation and core inflation



Source: CEIC

Expectations of the Fed's monetary policy in 2023-2025

Rate	2022*	2023	2024	2025
Fed funds rate assumption (% at year end)	4.25 - 4.50	5.25 - 5.50 (5.50 - 5.75)	4.50 - 4.75 (4.75 - 5.00)	2.50 - 2.75

Note: * denotes outturn, ( ) denote forecast in Monetary Policy Report Q3/2023

The Federal Reserve (Fed) maintained its policy rate at 5.25-5.50% at the FOMC Meeting on 1 Nov 2023. The decision was underpinned by slowing labor market conditions. In this regard, the BOT revised down its assumptions for the federal funds rate by 25 bps throughout the forecast period. It is expected that the Fed's tightening cycle is now over, and that the high policy rate would be maintained throughout the first half of 2024 before the Fed starts to cut the policy rate again in the latter half of the year.

The European Central Bank (ECB) maintained its policy rate at 4.0% at the Governing Council Meeting on 26 Oct 2023. Economic growth in the euro area has been slowing down due to effects of monetary tightening as reflected in the slowdown in both credit demand and labor market conditions. The ECB would continue its asset purchases under the Pandemic Emergency Purchase Programme (PEPP) throughout 2024. Looking ahead, it is expected that the ECB would gradually cut its policy rate in the latter half of 2024.

Most Asian central banks have stopped raising their policy rates to evaluate the monetary policy transmission from earlier rate hikes. This was also due to falling headline inflation, although core inflation for some countries remained high. Nevertheless, the Bangko Sentral ng Pilipinas and Bank Indonesia have raised their policy rates by one additional hike to address inflation and currency depreciation, which were unexpected by the market.

Trading partners' growth forecast for 2023 is revised up slightly on account of stronger-than-expected Q3/2023 economic outturns for US and China. Trading partner economies are expected to see stronger growth in 2024 across all countries except the euro area.

Assumptions of trading partners' growth

%YOY	Share of exports in 2022[1/] (%)	2022[2/]	2023		2024		2025
			MPR Q3/23	MPR Q4/23	MPR Q3/23	MPR Q4/23	MPR Q4/23
US	16.6	1.9	1.9	2.3	1.0	1.3	1.8
Euro area	6.8	3.4	0.7	0.5	1.2	1.0	1.4
Japan	8.6	0.9	1.8	1.6	1.0	1.1	0.9
China	12.0	3.0	5.0	5.1	4.6	4.7	4.6
Asia[3/]	21.5	3.8	3.3	3.4	3.8	3.9	3.7
Total[4/]	70.8	2.9	2.7	2.8	2.5	2.6	2.7

Note: [1/] Share of total Thai exporting values to 13 key trading partners in 2022
[2/] Outturns with backwards revision for some countries
[3/] Asia (excl. Japan and China) includes Singapore (3.6%), Hong Kong (3.5%), Malaysia (4.4%), Taiwan (1.6%), Indonesia (3.6%), South Korea (2.2%), and the Philippines (2.6%)
[4/] Including UK (3.9%) and Australia (1.4%)

Trading partners' growth forecast for 2023 is revised up slightly on account of stronger-than-expected growth outturns in Q3/2023 for US and China. The US economy has continuously been driven by a strong expansion in private consumption, while China's stronger-than-expected growth was driven by exports.

Trading partners' growth would be stronger in 2024 across all countries except the euro area. China and Japan would see stronger growth due to new stimulus measures from their governments. Meanwhile, the US economy would still be driven by private consumption and Asia's economies would be uplifted by stronger demand from their trading partners.

Trading partner economies in 2025 are expected to expand further, given that each countries will be advancing towards their potential output levels.

Risks to trading partners' growth outlook in 2024 remain tilted to the downside due to cumulative impact of monetary policy tightening and potentially slower recovery in global trade.

Downside risks: **Global economic recovery might be slower than expected** due to

(1) **The cumulative impact of monetary tightening,** both from recent rate hikes and additional rate hikes as the inflation outlook faces risks of El Niño being more severe than expected.

(2) **A slowdown in global trade** especially if demand from China is weaker than expected.

(3) **Geopolitical tensions** especially if tensions between US and China escalate further, and if the conflicts between China-Taiwan, Russia-Ukraine, and Israel-Hamas become prolonged and more severe than expected.

Upside risks: **Asia's economic growth might be stronger than expected** due to

(1) **Increased international tourism** resulting in a strong recovery in the services sector, especially the return of Chinese tourists to countries within the region

(2) **Stronger-than-expected economic growth for China** driven by government stimulus measures, resulting in stronger Asian exports growth

(3) **More stimulus measures being rolled out than previously expected** in China and Japan

The Thai Economy: Key Issues

External demand is recovering despite a slower-than-expected recovery in tourism and merchandise exports in 2023. These are partly due to the economic slowdown in China and a nascent recovery in the global electronic cycle. External demand would pick up in 2024 in line with the turnaround in merchandise exports and a continued recovery in the tourism sector.

Domestic demand has continued to expand. Strong private consumption growth is driven by spending in services, in line with the continued recovery in labor income.

Headline inflation would be within the target range. Headline inflation has been low in 2023 due to temporary factors but is expected to be higher in the period ahead. Core inflation would also increase in 2024. Upside risks to inflation stem from potentially higher food and energy prices.

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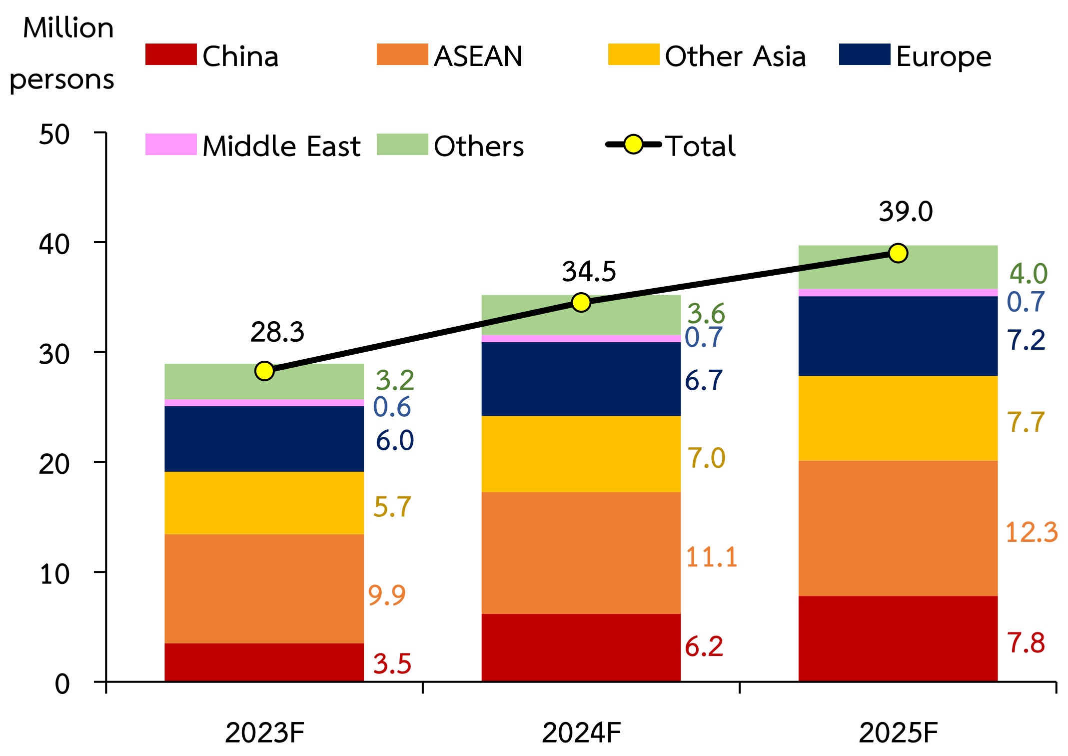
External demand: foreign tourist arrivals would continue to increase but still be lower than the previous assessment due to a slow recovery in the number of Chinese tourists.

Projection of foreign tourist arrivals



Source: Ministry of Tourism and Sports, BOT forecast

Projection of foreign tourist arrivals

	2022*	2023	2024	2025
Million persons	11.2	28.3 (28.5)	34.5 (35.0)	39.0
% of 2019 value	28%	71% (72%)	87% (88%)	98%

Note: * denotes outturn , ( ) = forecast from Monetary Policy Report Q3-2023

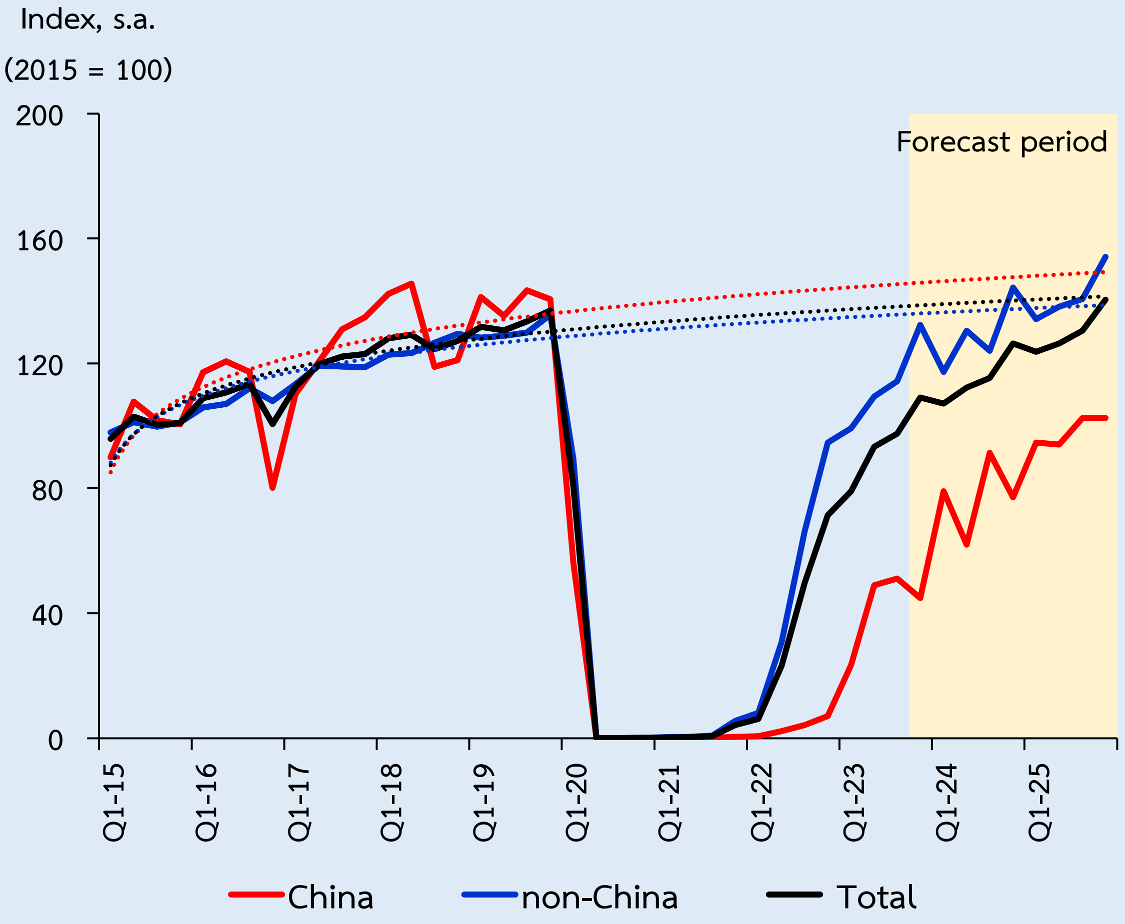
- **Foreign tourist arrivals forecast is revised down to 28.3 million persons in 2023 and 34.5 million persons in 2024** on account of lower-than-expected outturns for the number of Chinese tourists (Box 1: The slow recovery of foreign tourist arrivals from China and implications for the tourism sector). However, looking ahead, foreign tourist arrivals (excl. Chinese tourists) are expected to strongly recover in line with the past trends. Moreover, foreign tourist arrivals would reap the benefits from new visa exemptions (visa free) for tourists from India, Taiwan, and Kazakhstan.
- **Foreign tourist arrivals in 2025 are projected to be 39 million persons,** reflecting a continued increase driven by momentum from the preceding years.

Box 1: The slow recovery of foreign tourist arrivals from China and implications for the tourism sector

The Thai tourism sector has resumed its role in driving economic growth since Thailand's re-opening from the pandemic and the cancellation of the Thailand Pass program in mid-2022. As of October 2023, foreign tourist arrivals totaled 23.2 million persons (68% of 2019 value) and generated over 980 billion baht in revenue[1/]. However, **the recovery in the number of foreign tourists is clearly uneven across different nationalities**. For most nationalities, the recovery has been strong and in line with past trends **(Chart 1).** For Chinese tourists, which used to be the Thailand's largest tourist arrivals, totaled only 2.9 million persons year-to-date (29% of pre-COVID levels). Although the Chinese government already lifted foreign travel restrictions for its citizens and permitted group tours to Thailand since early 2023, the recovery in the number of Chinese tourists has been slower-than-expected. The reasons for the slow recovery can be summarized as follow:

(1) The Chinese government's post-COVID policies were geared towards bolstering the economic recovery by boosting domestic consumption spending and domestic tourism. This included arranging concerts and film festivals, cancelling tourism fees, and approving additional public holidays. Moreover, private sector businesses focus on promoting domestic travel. Thus, China's domestic tourism, measured by airline seat capacity, increased by 15% from pre-COVID levels in the recent Golden Week (29 Sep – 7 Oct 2023)

Chart 1: Foreign tourists recovery path



Source: Ministry of Tourism and Sports, BOT forecast

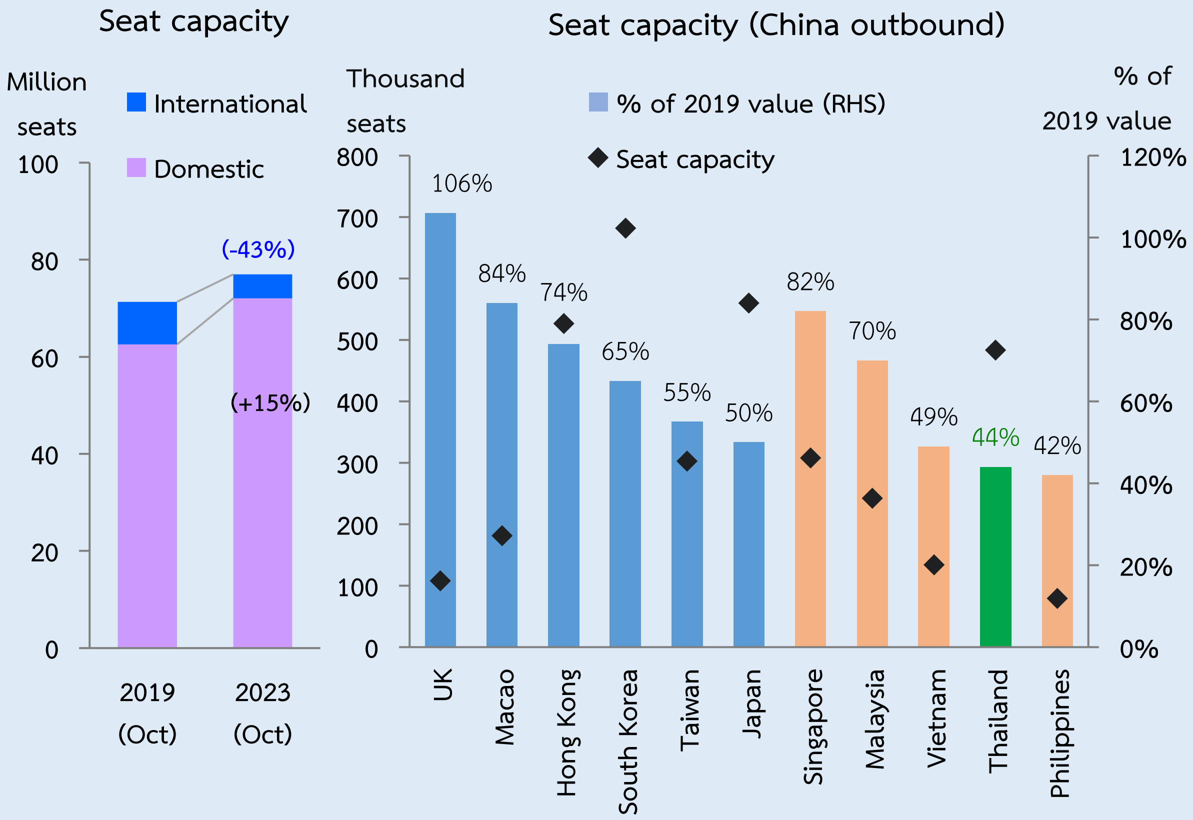
[1/] Data from the Ministry of Tourism and Sports as of 19 November 2023

Box 1: The slow recovery of foreign tourist arrivals from China and implications for the tourism sector

This contrasts with China's international travel, which is 43% lower than pre-COVID levels **(Chart 2, LHS)**. Looking ahead, China's stimulus policies, which have crowded out China's international travel, are expected to hamper the tourism recovery in various countries, especially in Thailand where the tourism sector has been highly dependent on Chinese tourists.

(2) Chinese tourists' safety concerns regarding tourism in Thailand. This is reflected in the Chinese Traveler Sentiment Survey[2/], which found that the number of Chinese tourists concerned about traveling to Thailand grew from 28% in 2022 to 51% in 2023. This is partly due to the recent Chinese films and social media that portrayed the safety concerns in traveling to Thailand as well as some ASEAN countries. As a result, the number of Chinese tourists traveling to Thailand recovered slowly, while it continued recovering in Europe, Japan, Korea, and Singapore **(Chart 2, RHS).** Therefore it is imperative for relevant agencies in Thailand to work closely together to ensure that tourists would travel safely throughout their stay in order to regain the confidence of Chinese travelers.

Chart 2: Seat capacity recovery of flights travelling from China



Note: ( ) denotes change in Chinese seat capacity in Oct 2023 relative to Oct 2019
Source: Official Airline Guide Aviation (OAG)

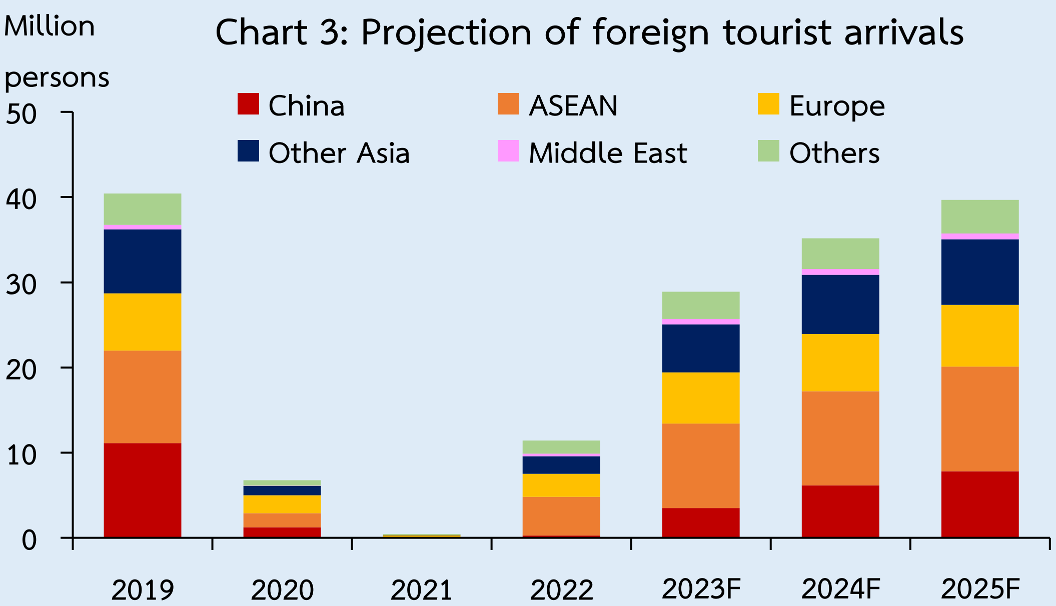
[2/] Survey by Dragon Trail which had a sample size of 999 respondents who are Chinese nationals, 57% of which had traveled abroad.

Box 1: The slow recovery of foreign tourist arrivals from China and implications for the tourism sector

The aforementioned negative factors limited the positive effects of the visa exemptions given to Chinese tourists. Meanwhile, the Chinese government policy direction resulted in a structural change in tourism. **As such, the number of Chinese tourist arrivals would take time to recover in the period ahead.** The projected number of Chinese tourists is therefore revised down to 3.5 million persons, 6.2 million persons, and 7.8 million persons in 2023, 2024, and 2025, respectively **(Chart 3)**. However, tourists of other nationalities have shown considerable recovery, offsetting the decline in Chinese tourists to some extent. Consequently, total foreign tourist arrivals are projected to stand at 28.3 million persons in 2023, 34.5 million persons in 2024, and 39 million persons in 2025.

Reinvigorating Thai tourism demand among Chinese travelers is considered an important challenge in the period ahead. In the near term, the relevant public and private sector agencies must act swiftly to restore a positive image for Thailand. This includes promoting Thai tourism among other foreign nationalities in terms of both the number of incoming travelers and spending per head, in order to mitigate the negative economic impacts during the period that the number of Chinese tourists is still recovering slowly. Over the long term, relevant agencies need to ensure the readiness of tourist destinations as well as domestic infrastructures to accommodate growth and enhance the potential of Thailand's tourism sector going forward.

Chart 3: Projection of foreign tourist arrivals

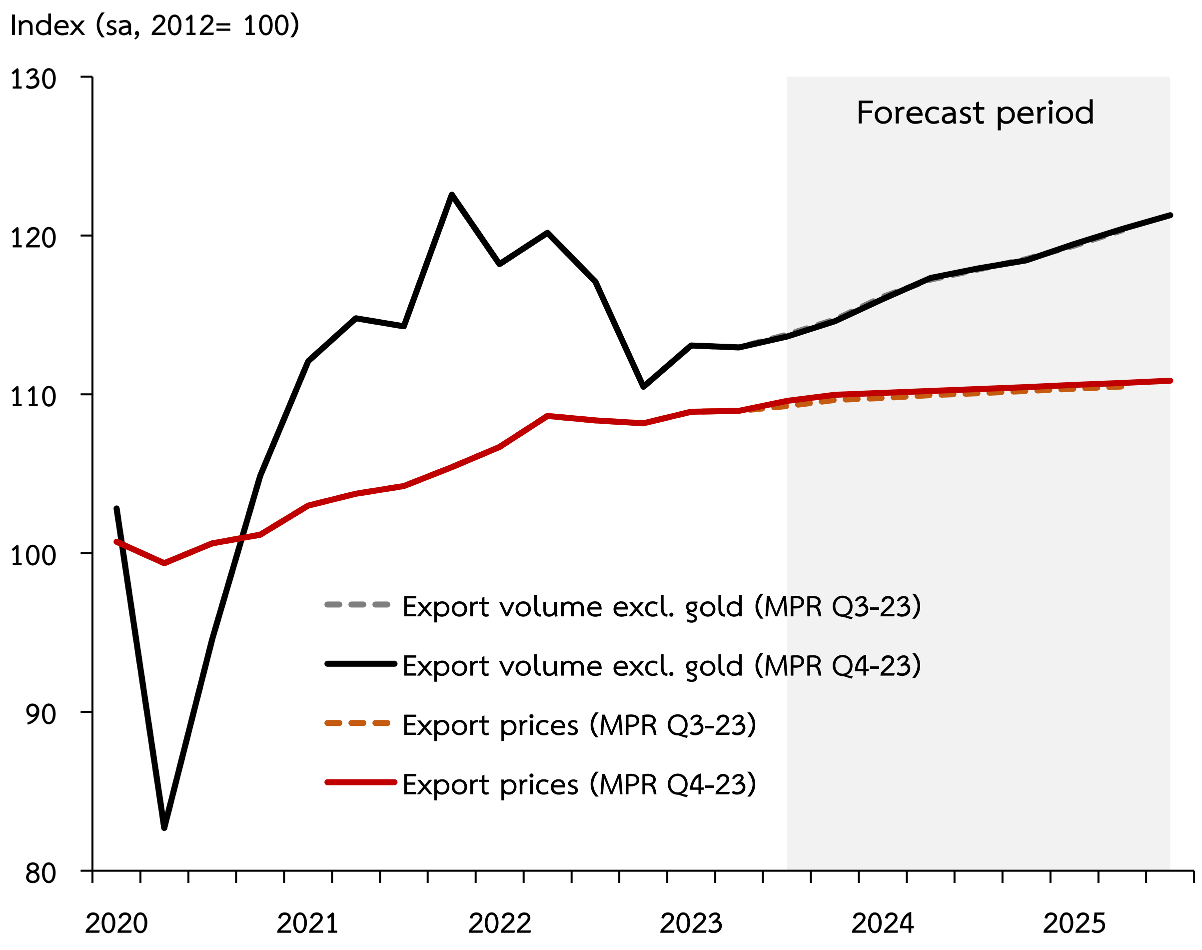


Foreign tourist arrivals (million persons)	2023		2024		2025
	MPR Q3-23	MPR Q4-23	MPR Q3-23	MPR Q4-23	MPR Q4-23
All nationalities	28.5	28.3	35.0	34.5	39.0
Share of 2019 value (%)	*71.5*	*70.9*	*87.6*	*86.5*	*97.7*
o/w China	3.9	3.5	7.5	6.2	7.8
Share of 2019 value (%)	*35.2*	*31.4*	*67.1*	*55.5*	*70.1*

Source: Ministry of Tourism and Sports, BOT forecast

Merchandise exports would bounce back in the period ahead in line with trading partners' growth and an upturn in the global electronic cycle.

Projected merchandise exports (excl. gold)



- **Merchandise exports outturns in Q3/2023 were higher than expected.** This was mainly due to higher export prices stemming from increased in fuel and agricultural prices. Meanwhile, exports volume was in line with expectations.
- **Looking ahead, merchandise exports volume would recover on the back of (1) trading partners' economic growth and improvements in manufacturing demand; and (2) the global electronic cycle recovery.** It is expected that Thai exports would clearly benefit from those two factors in the first half of 2024 (Box 2: Spillover effects from the global economy to Thai merchandise exports)
- **Export prices remain high** in line with global energy prices as well as an increase in rice prices due to the decline in rice output from India.
- **Exports outlook is still subject to risks** stemming from (1) trading partners' economic recovery having limited positive spillovers on Thai exports due to structural factors; and (2) the recovery in the global electronic cycle which might be slower than expected.

Merchandise exports projection

Growth (%YoY)	2023	2024	2025
Export value	-1.5 (-1.7)	4.3 (4.2)	3.3
Export prices	1.2 (1.0)	0.8 (0.7)	0.5
Export volume	-2.7 (-2.7)	3.5 (3.5)	2.8

Note: ( ) denotes previous forecast from Monetary Policy Report Q3-2023

Box 2: Spillover effects from the global economy to Thai merchandise exports

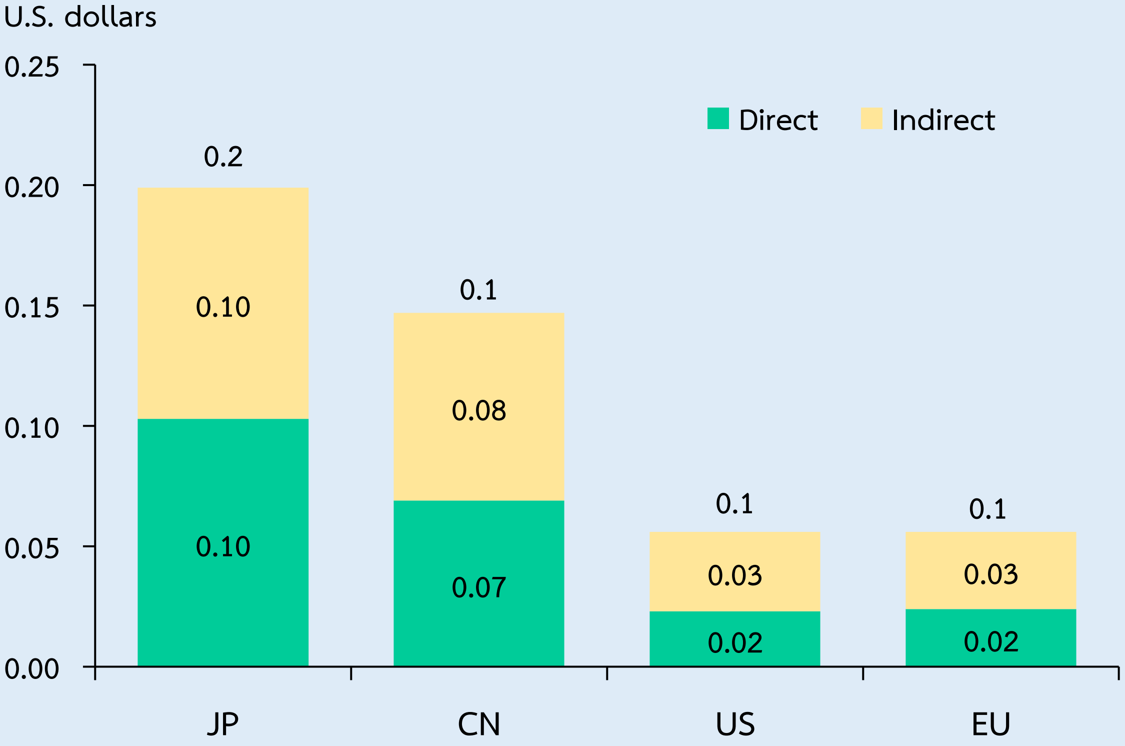
Economic recovery among Thailand's key trading partners is mainly driven by the services sector. The service-led recovery is an important factor explaining why Thai exports have not benefited much in the previous period. Exports from Thailand and other countries in the region contracted despite the economic expansion among trading partners. **However, in the period ahead, the manufacturing sector and global trade would play more prominent roles in driving growth than the services sector.** This is in line with the IMF's view that growth in global trade volumes would turn positive in 2024. It is therefore assessed that such sectoral rebalancing would be a key factor underpinning Thailand's exports recovery in the future.

One of the methodology used in assessing the benefits of sectoral rebalancing among trading partners is employing the Inter-Country Input-Output (ICIO)[1/] table to analyze the recovery of the manufacturing sector. It illustrates the interconnections between the input and output of production across countries. The analysis involves evaluating the positive spillover effect on Thai exports resulting from demand recovery in the manufacturing and services sectors of each trading partner, and comparing these effects among different trading partners. The findings are as follow:

(1) Demand recovery in Japan and China have the most positive spillover effects on Thai exports. If the final demand from Japan and China each increases by 100 U.S. dollar, the value of Thai merchandise exports would increase by 0.2 and 0.1 U.S. dollars, respectively. This is in line with the level of supply chain interconnectedness between Thailand and those two trading partners **(Chart 1).**

[1/] ICIO table is based on the 2018 trade structure from OECD

Chart 1: Spillover effect on Thai exports from a 100 USD increase in trading partner's final demand



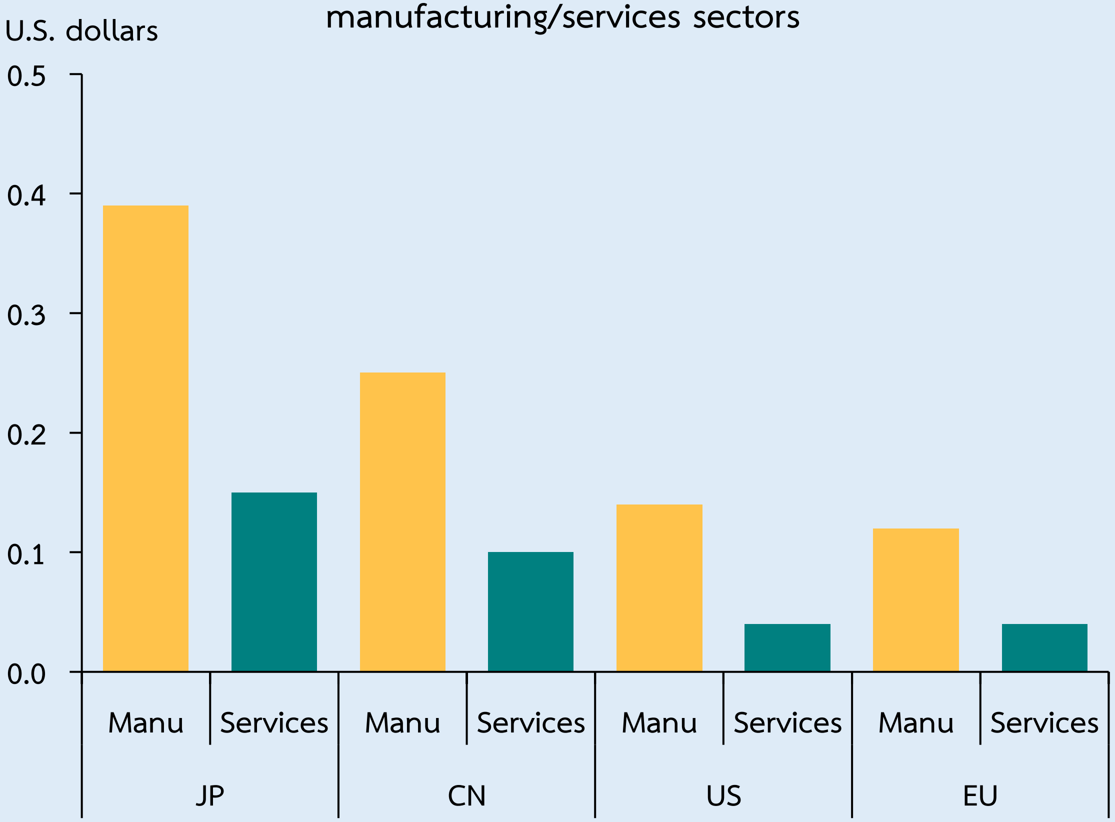
Note: (1) Calculate form Inter-Country Input-Output (ICIO) table, using 2018 trade structure
(2) JP = Japan, CN = China, US = United States, EU = European Union
(3) Direct effect measures the impact from bilateral trading directly with each respective trading partners. Indirect effect measures the impact of which Thai exports is used as an intermediary in another country's exports of the final goods to trading partners

Source: OECD, BOT calculations

Box 2: Spillover effects from the global economy to Thai merchandise exports

(2) An increase in demand from the manufacturing sector has greater positive spillover effects on Thai merchandise exports than an increase in demand from the services sector. This finding is consistent for demand from all of Thailand's key trading partners. If trading partners' final demand in the manufacturing sector increases by 100 U.S. dollar, the value of Thai merchandise exports would increase by 0.1-0.4 U.S. dollar. Meanwhile, if the final demand in the services sector of a trading partner increases by 100 U.S. dollar, it results in only a 0.1 U.S. dollar increase in the Thai merchandise exports **(Chart 2).** The industries that benefit the most from increased final demand in the manufacturing sector are electronics, electrical appliances, and chemical and petrochemical products, respectively. However, the current structure of Thai exports has changed from the past. In particular, exports of electronics are no longer driven by demand for hard disk drives resulting from changing consumer behavior. Additionally, exports of chemical and petrochemical products have been affected by China's policy changes, focusing on domestic production and relying less on imported inputs from abroad. Given these structural changes, the positive spillover effects for some goods could be less than the assessment based on the ICIO table.

Chart 2: Spillover effect on Thai exports from a 100 USD increase in trading partners' final demand in the manufacturing/services sectors



Note: (1) Calculate form Inter-Country Input-Output (ICIO) table, using 2018 trade structure
(2) JP = Japan, CN = China, US = United States, EU = European Union
Source: OECD, BOT calculations

Box 2: Spillover effects from the global economy to Thai merchandise exports

The second methodology, which could reflect the current trade structure better, involves using the Global Vector Autoregression model (GVAR)[2/] to assess the spillover effects of the global economy on Thai exports. The assessment examines the spillover effects in 3 main channels: **(1) trade channel:** GDP, merchandise exports, and merchandise imports; **(2) financial channel:** short-term interest rate, long-term interest rate, exchange rates, and inflation; and **(3) global factor:** oil prices. The assessment is conducted in 2 steps: **(1) evaluate the impact of the main domestic variables (x_{it}) and global variables (x^*_{it})[3/] through the VAR model (VARX[4/]) for each country** whereby the impact from global factors on the Thai economy would be weighed by the bilateral trade weight[5/]; and **(2) evaluate both the direct and indirect impacts on all countries through the GVAR[6/] model,** which integrates each country's individual VAR model into one single model for the global economy linked by global factors. In addition, the oil price in current period is based on the immediately preceding value[7/].

[2/] For more information about the model, please refer to:
Pesaran MH., Schuermann T., Weiner SM. (2004). "Modelling Regional Interdependencies Using a Global Error Correcting Macroeconometric Model". Journal of Business and Economic Statistics.
Robert, G. et.al. (2018). "From the Middle Kingdom to the United Kingdom: spillovers from China". Quarterly Bulletin 2018Q2, Bank of England. 22: 129–162.

[3/] **Domestic variables** (x_{it}) include (1) GDP; (2) merchandise exports; (3) merchandise imports; (4) short-term interest rates; (5) long-term interest rates; (6) exchange rates; and (7) inflation. **Global variables** (x^*_{it}) are the same domestic variables weighed by the bilateral trade weight of country i. **Global factor** ($\boldsymbol{d_t}$) in the model is oil prices.

[4/] VARX equation: $x_{it} = a_{io} + a_{i1}t + \beta_i x_{i,t-1} + \delta_{io}x^*_{it} + \delta_{i1}x^*_{i,t-1} + \gamma_{io}d_t + \gamma_{i1}d_{t-1} + \mu_{it}$

[5/] trade weight equation: $x^*_{it} = \sum_{j=0}^{20} \omega_{ij}(t).x_{ij}$

[6/] GVAR model equation: $G_0 x_t = a_o + a_1 t + G_1 x_{t-1} + \psi_o d_t + \psi_1 d_{t-1} + \mu_t$

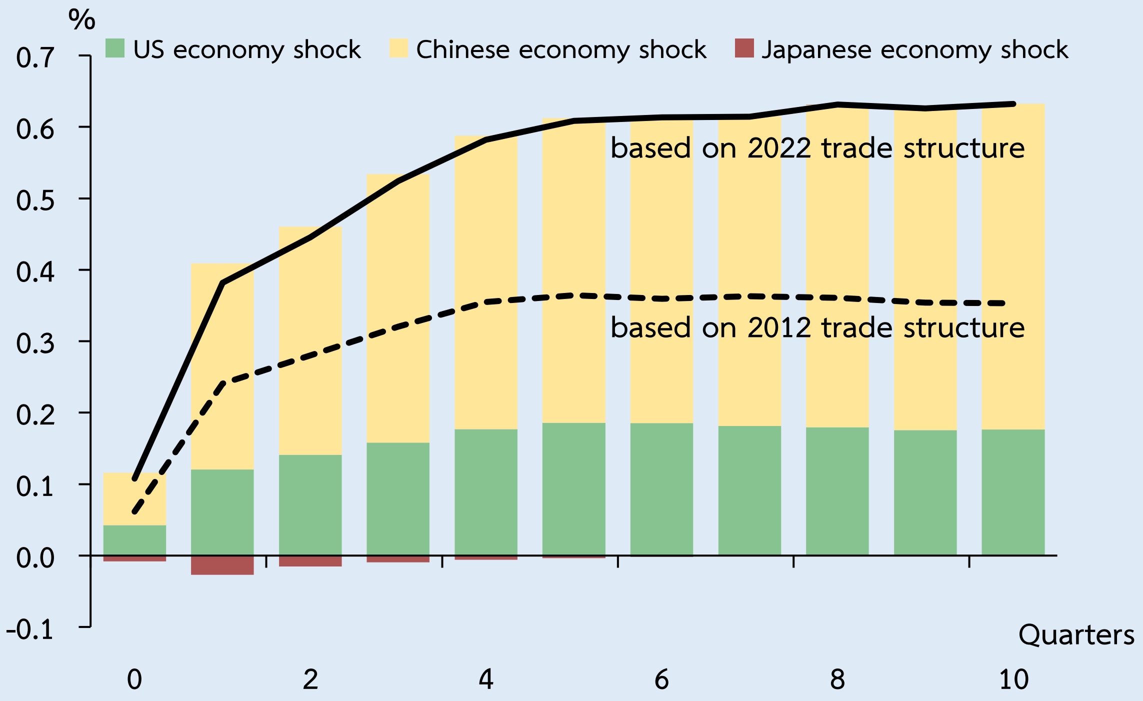
[7/] oil price equation: $d_t = \rho_o + \rho_1 t + \varphi_1 d_{t-1} + \nu_t$

Box 2: Spillover effects from the global economy to Thai merchandise exports

The assessment based on the GVAR model found that trading partners' economic recovery would have more positive spillover effects on Thai exports than in the past. Comparing the spillover effects under the trade patterns in 2012 and 2022, the spillover effects on Thai exports in one year time would be 1.2% using 2012 trade structure and 1.9% using 2022 trade structure (equivalent to an average quarterly recovery of 0.5% in 2024 and 0.6% in 2025). The given results are under the assumptions that trading partners, especially the US, China, Japan, and EU would recover in line with the assumptions for trading partners' growth; whereby the US and China would expand, EU would remain stable, and Japan would slightly contract[8/] in the latter half of 2023. These results can be explained by (1) increased role of China and the US in global trade over the past 10 years; and (2) second-round effects through China's and the US's key trading partners given that Thailand's key trading partners are more interconnected with China and the US. Furthermore, it is assessed that **the source of shock in the period ahead is expected to originate from China's economic recovery** (Chart 3)

[8/] The assumption for trading partners' growth used as a shock is that the US, China, Japan, and EU economies would grow at the same rate as the previous quarter at 0.6%, 0.9%, -0.2%, and 0.0% QoQ s.a., respectively. The shock also takes place at the same time period of t=0.

Chart 3: Spillover effects on Thai exports under trading partners' growth assumptions, comparing between 2012 and 2022 trade structures



Note: Calculated with generalized impulse response function of the positive effect on Thai exports in the case where the trading partner economy expanding according to the trading partner assumptions. Utilized GVAR model based on top 20 most significant trading partner economies which accounted for 96% of the global economy

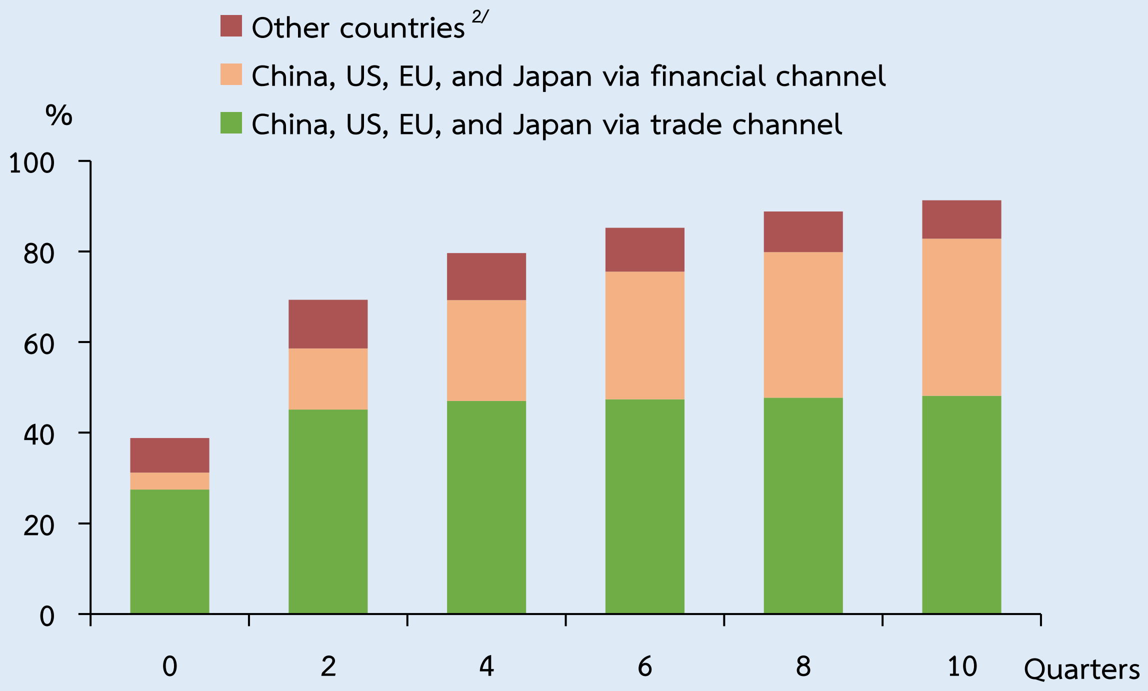
Source: CEIC, Oxford Economics database, the Customs Department, BOT calculation

Box 2: Spillover effects from the global economy to Thai merchandise exports

When considering the channels of transmission, the trade channels, especially exports and imports by G3 economies and China, are found to be the most significant for Thai exports. For the financial channels, the renminbi and the US dollar would become more significant for Thai exports in the next 4 quarters. The spillover effects on Thai exports from other countries beside the 4 mentioned beforehand are quite limited **(Chart 4).**

In summary, it is expected that Thai merchandise exports would benefit from increasing demand in the manufacturing sector of trading partners as well as a turnaround in global trade. The benefits would be proportionate to Thailand's increased trade ties with China and the US. Nevertheless, there remain risks that must be monitored namely structural change in Thai exports due to the loss of competitiveness and the impact of geopolitical tensions, such as retaliation measures and trade barriers.

Chart 4: Transmission channels of the spillover effects on Thai exports[1/]



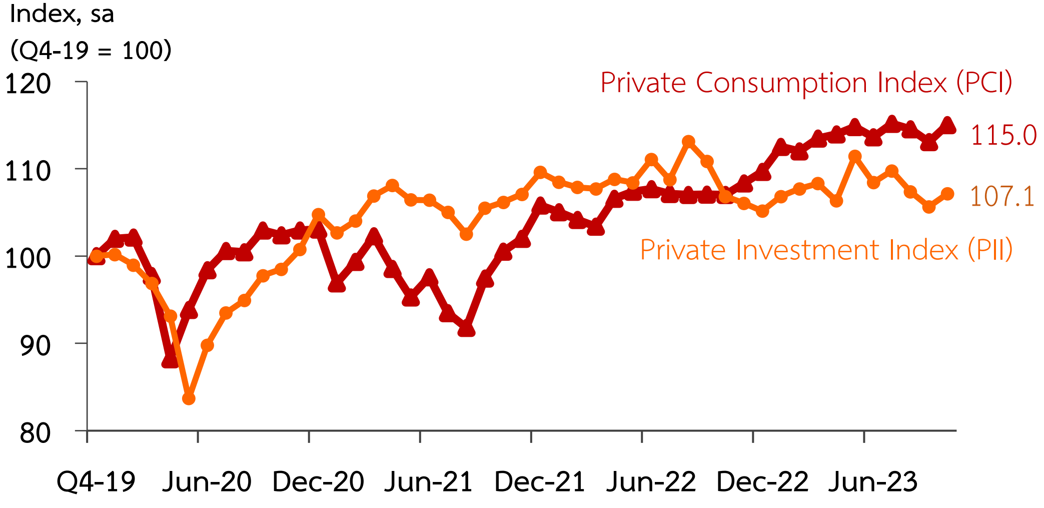
Note: [1/]Transmission channels of the spillover effects on Thai exports are calculated by variance decomposition in GVAR model (20 key trading partners, accounting for 96% of the global economy), using generalized forecast error variance decomposition.

[2/]Trade and financial channels of other countries

Source: CEIC, Oxford Economics database, , the Customs Department, BOT calculation

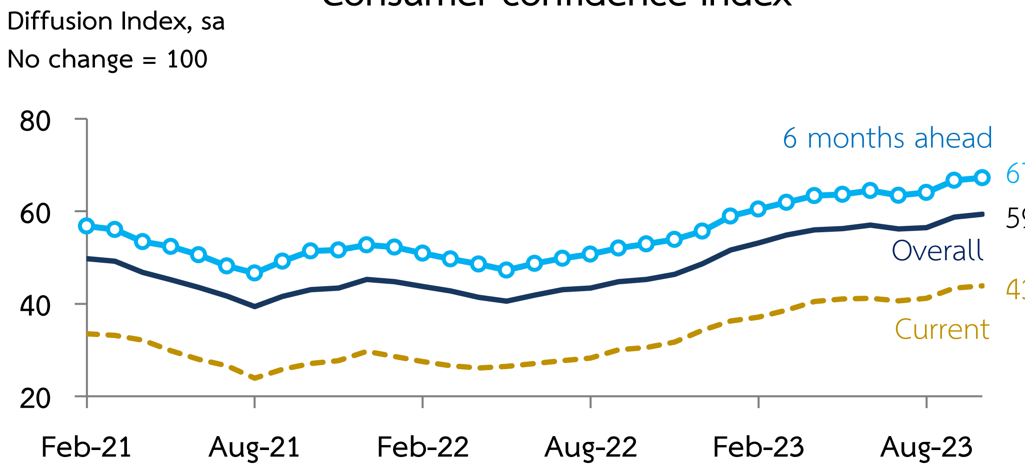
Domestic demand has continued to expand as reflected in recent economic indicators. Private consumption growth has been strong, supported by an increase in consumer confidence. Labor market conditions and labor income have also continued to recover.

Private consumption and private investment index



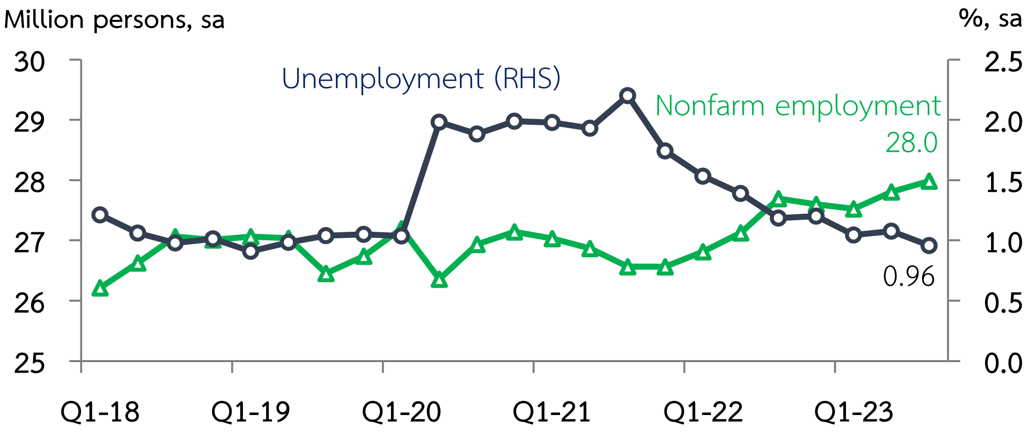
Source: BOT

Consumer confidence index



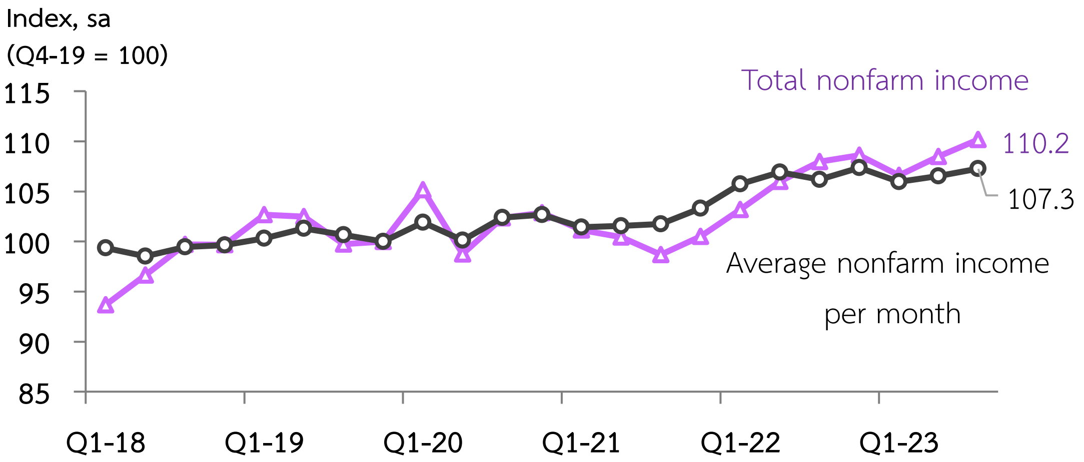
Source: Center for Economic and Business Forecasting, UTCC; BOT calculation

Nonfarm employment and unemployment rate



Source: National Statistical Office

Total nonfarm income and average nonfarm income per month



Source: National Statistical Office

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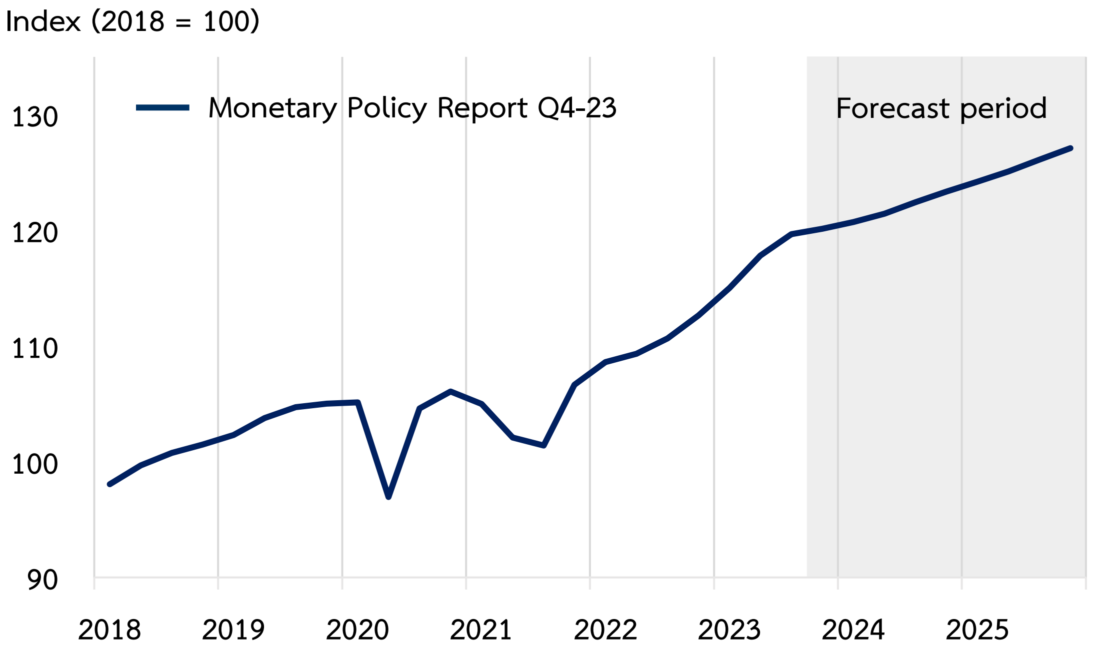
Private consumption is expected to continue expanding supported by improvements in employment, labor income, and external demand through both tourism and merchandise exports.

Real Private Consumption (excl. digital wallet scheme)



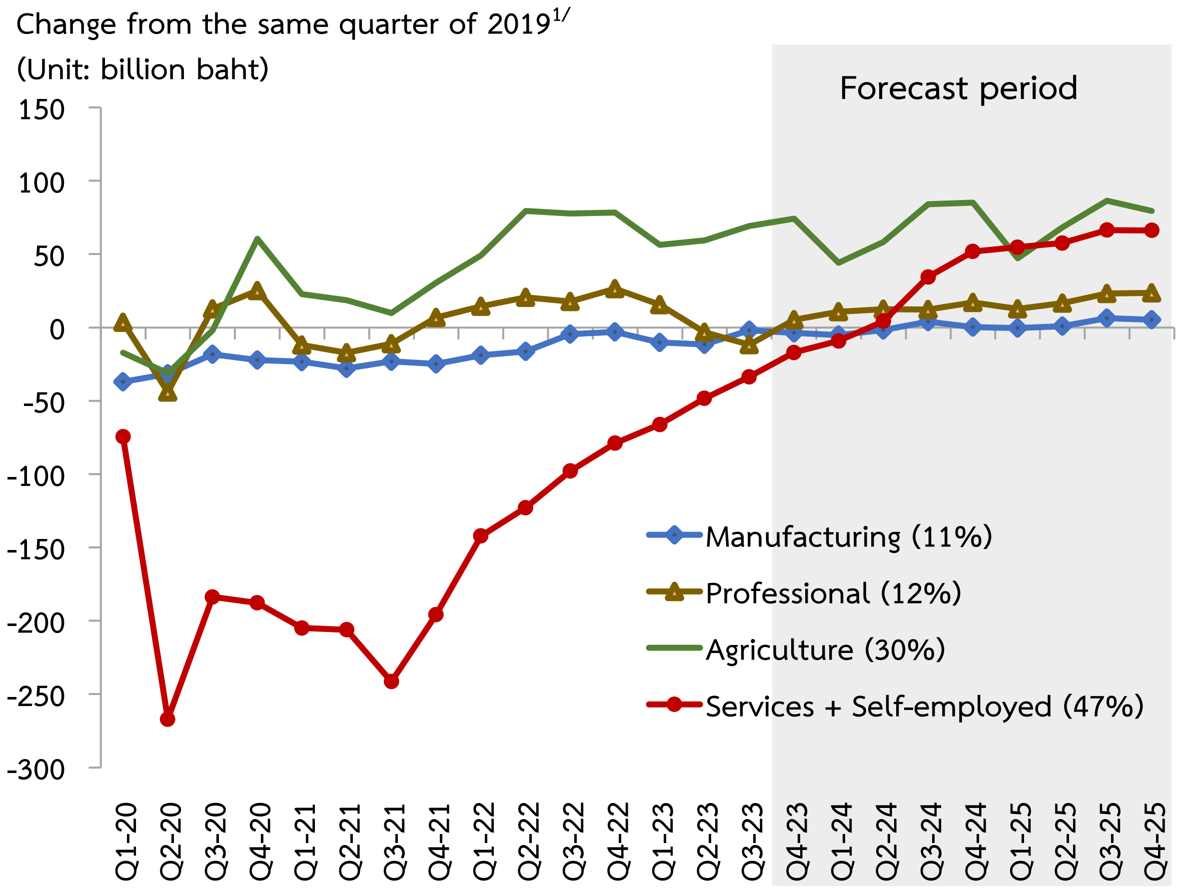
Source: BOT forecast

Private consumption projection (excl. digital wallet scheme)

%YoY	2022*	2023	2024	2025
Private consumption	6.3	7.1	3.2	3.0

Note: * denotes outturn

Total income recovery projection by sector



Note: 1. Labor income excludes the impact of government policy measures. Nonfarm income in 2019 is 4.5 trillion baht.
2. ( ) is the proportion of labor in each sector to the total amount of labor in 2022

Government measures have played an important role in assisting farmers and alleviating the living costs. Looking ahead, additional government measures should be monitored.

Summary of government measures in the latter half of 2023

Measure	Amount (billion baht)	Implementation period
Support scheme for farmers to assist with the management and development of rice production quality, for the harvest season 2023/2024	56.3	14 Nov 2023 – 30 Sep 2024
Electricity bills subsidies	20	20 Sep – 31 Dec 2023
Diesel price subsidies	15[1/]	20 Sep – 31 Dec 2023
Debt moratorium for BAAC debtors	12	1 Oct 2023 – 30 Sep 2024
Measures for stabilizing the agricultural prices[2/]	10.7	1 Oct 2023 – 31 Oct 2026
Biofuel (gasohol) price subsidies	2.7[1/]	7 Nov 2023 – 31 Jan 2024
LPG price ceiling	1.5	1 Oct – 31 Dec 2023
MRT and SRT (purple and red line) - 20 baht ceiling fare	0.08[1/]	16 Oct 2023 – 30 Nov 2024
Total	118.3	

Note: [1/] Projected loss in government revenue
[2/] Include price stabilizing measures for rice, casava, and animal feeding corn (harvest season 2023-2024)
Source: Cabinet resolutions, aggregated by BOT

New government measures approved in Q4/2023

Most of the measures are support schemes for farmers to assist with production costs, development of production quality, and delay the sales of crop output. Moreover, there are measures to assist with living costs faced by Thai citizens including reduction of fuel excise tax, utility bills subsidies, and mass rapid transit fares reduction.

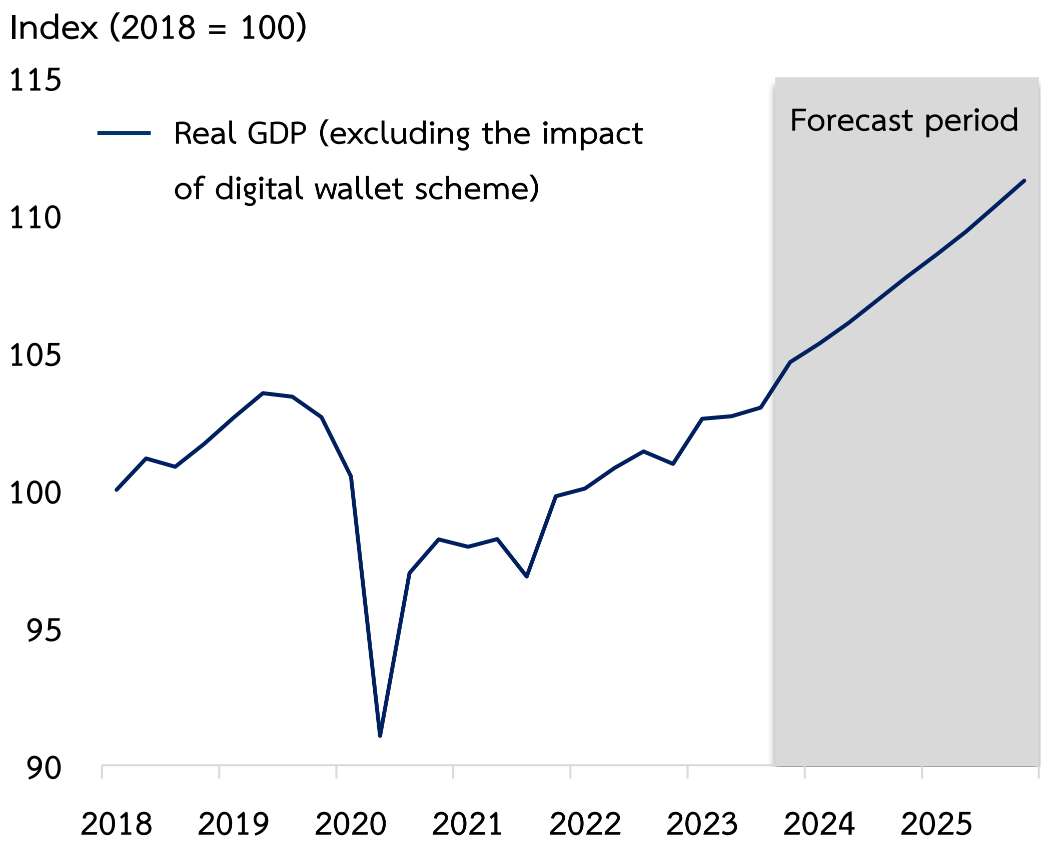
Government measures that remain unclear

Many government measures remain unclear in terms of detail, source of fund, and implementation period. These include the 10,000-baht digital wallet scheme, minimum wage increase, and salary increase for civil servants.

Box 3: Macroeconomic forecast under the impact of the digital wallet scheme

The Thai economy would continue to recover without the impact of the digital wallet scheme. Economic growth would be more balanced driven by both domestic and external demand through the anticipated expansion in private consumption, a continued recovery in tourism, and a turnaround in merchandise exports.

Real GDP



Economic projection (excluding the impact of digital wallet scheme)

Growth (%YoY)	2022*	2023	2024	2025
GDP growth	2.6	2.4	3.2	3.1
Domestic Demand	4.1	3.7	2.9	3.1
Private Consumption	6.3	7.1	3.2	3.0
Private Investment	5.1	2.4	3.6	4.5
Government Consumption	0.2	-4.0	1.1	2.8
Public Investment	-4.9	-0.5	2.7	1.4
Export volume of goods and services	6.8	2.4	5.6	3.8
Import volume of goods and services	4.1	-2.1	4.9	3.8
Current account (billion U.S. dollars)	-15.7	5.0	10.0	14.8
Value of merchandise exports (%YoY)	5.4	-1.5	4.3	3.3
Value of merchandise imports (%YoY)	14.0	-1.8	5.3	2.9
Number of foreign tourists (million persons)	11.2	28.3	34.5	39.0

Note: * denotes outturn

Source: NESDC and BOT forecast

Summary of economic forecasts

Export of services	Revised down partly on account of lower tourist arrivals and tourism income as well as other services income such as transportation costs, and other business services. Foreign tourist arrivals in 2023 are expected to be 28.3 million persons. Foreign tourist arrivals would continue to recover in 2024 and 2025 with the number of tourists increasing to 34.5 million persons in 2024 and 39.0 million persons in 2025. While the recovery in the number of Chinese tourists would be slow, tourists from other countries would recover strongly. Tourism income is revised down given that tourists of other nationalities are short-haul travelers with lower spending per head compared to Chinese tourists.
Merchandise exports (value)	Merchandise exports contract less than previously expected on account of better-than-expected economic outturns among trading partners, especially the US and China. Merchandise exports growth would turn positive in 2024 and 2025 driven by an upturn in the global electronic cycle in 2024 as well as trading partners' economic recovery, especially in the manufacturing sector. This would lead to higher global trade volume and thus positive spillovers to Thai exports.
Private consumption	Private consumption would continue to expand, particularly in the services sector for hotels and restaurants. This aligns with the labor market recovery, as reflected by the number of those insured under Section 33 of the Social Security Act, working hours, and labor income, notably for those working in tourism-related sectors. Private consumption is expected to continue expanding in 2024 and 2025, driven by Thailand's economic recovery which would still be supported by improvements in employment, labor income, and consumer confidence.
Private investment	Private investment outturns were higher-than-expected in Q3-2023. Private investment is expected to continue expanding in 2024 and 2025, supported by the gradual recovery in merchandise exports in 2024 and a continued expansion in domestic demand. Moreover, there will be investments in new industries under the Board of Investment's promotion scheme as well as in public-private partnership (PPP) projects, such as the high-speed railways connecting the 3 airports and the MRT Orange Line which are expected to commence in 2024.

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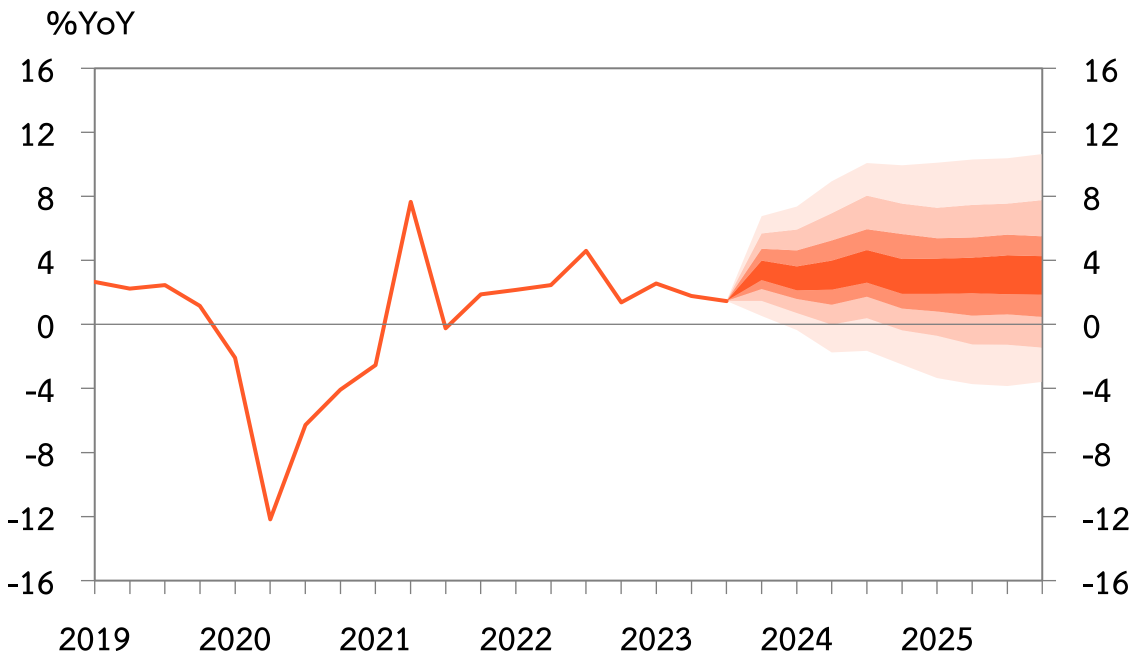
Risks to growth outlook are balanced

GDP growth forecast



Upside risks

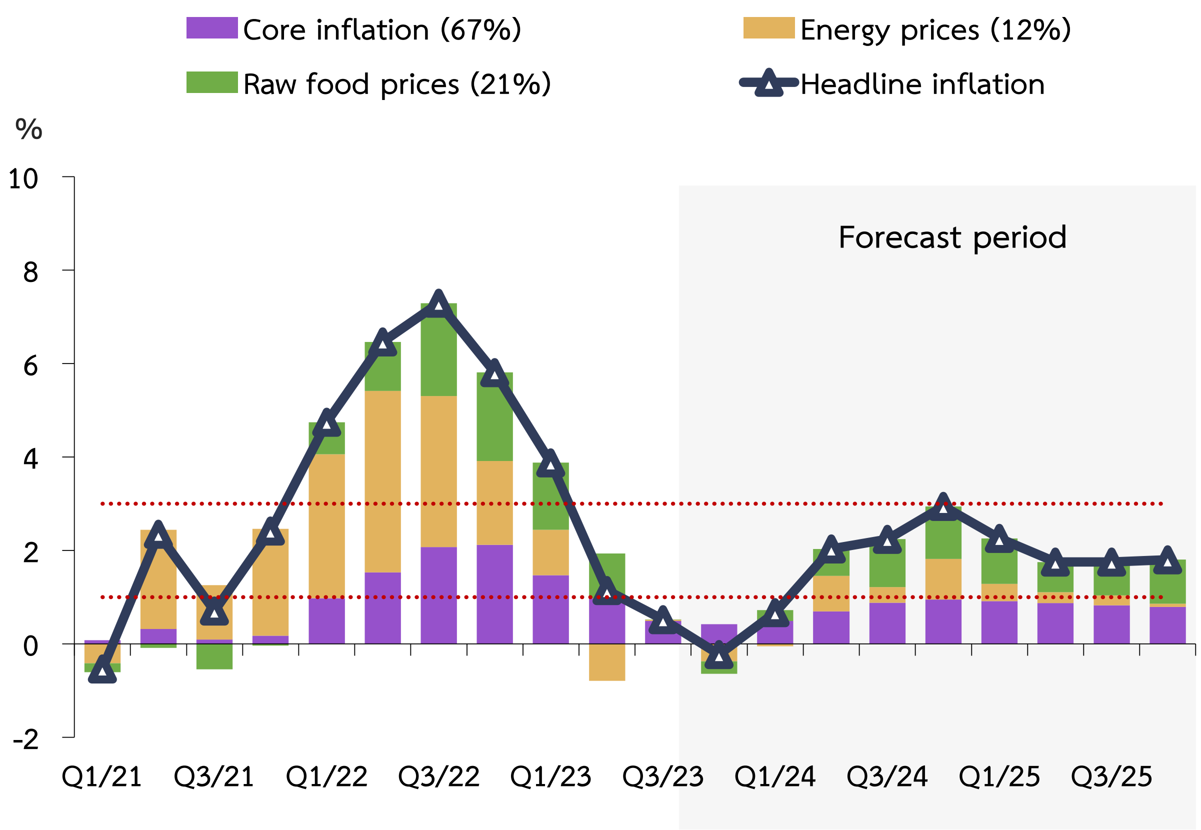
- Stronger-than-expected domestic demand growth

Downside risks

- Global economic growth is weaker than expected, especially China, and the impact of the Israel-Hamas conflict.
- Limited positive spillovers from the global economic recovery to Thai exports due to structural changes

Headline inflation outturns in Q4-2023 were low due to the government's living cost subsidies and a high base for vegetable prices. However, headline inflation is expected to gradually rise in 2024 due to supply-side pressures.

Contribution to headline inflation



Note: ( ) denotes weight in CPI basket

Source: Ministry of Commerce, BOT calculation and forecast as of Nov 2023

Inflation forecast (excluding the impact of digital wallet scheme)

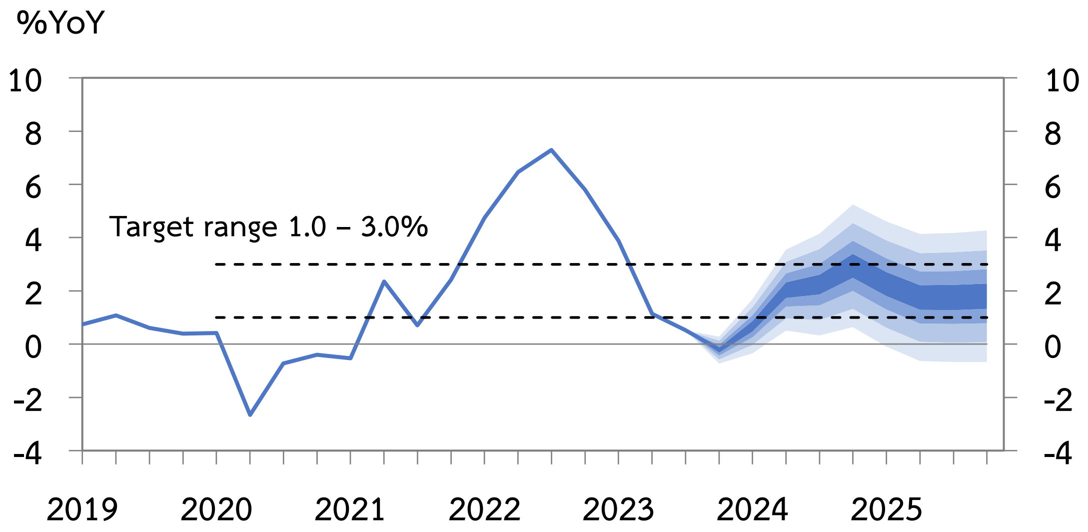
%YoY	2022*	2023	2024	2025
Headline inflation	6.1	1.3	2.0	1.9
Core inflation	2.5	1.3	1.2	1.3

Note: * denotes outturn

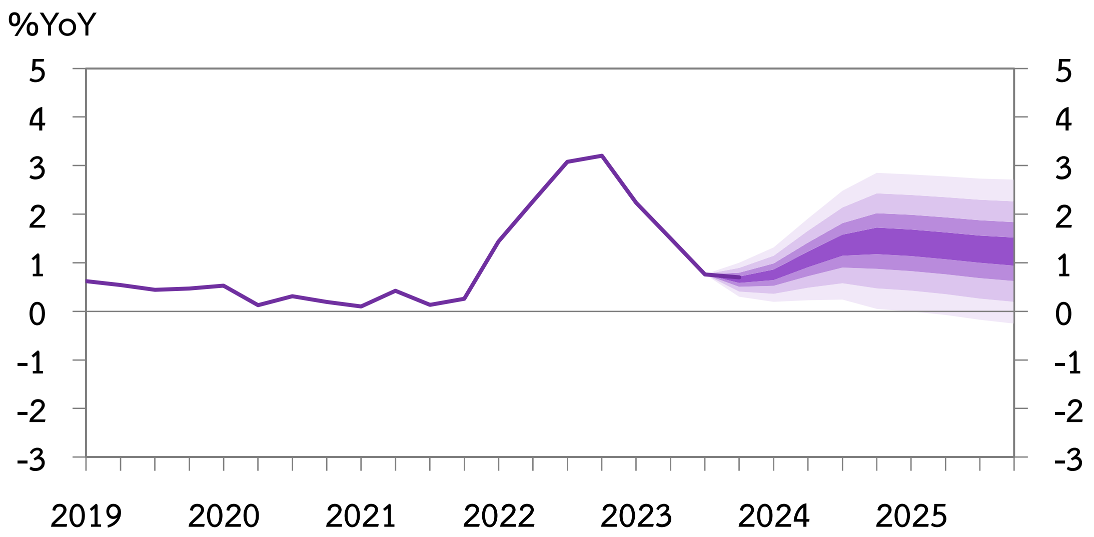
- **Headline inflation would remain low throughout the rest of 2023.** This is due to the government subsidies for electricity bills and diesel prices, and a high base for vegetable prices from the previous year. **Headline inflation is expected to gradually rise in 2024**, on account of higher energy and raw food prices, and would slightly decline in 2025. Overall, inflation is expected to move within the target range in 2024 and 2025.
- **Core inflation is expected to be higher in 2024 and 2025** compared to Q4-2023, but would remain below the levels seen in 2022 due to lower cost pressures.

Risks to inflation outlook are balanced

Headline inflation forecast



Core inflation forecast



Upside risks

- El Niño in 2024 is more severe than expected
- Global energy prices are higher than expected

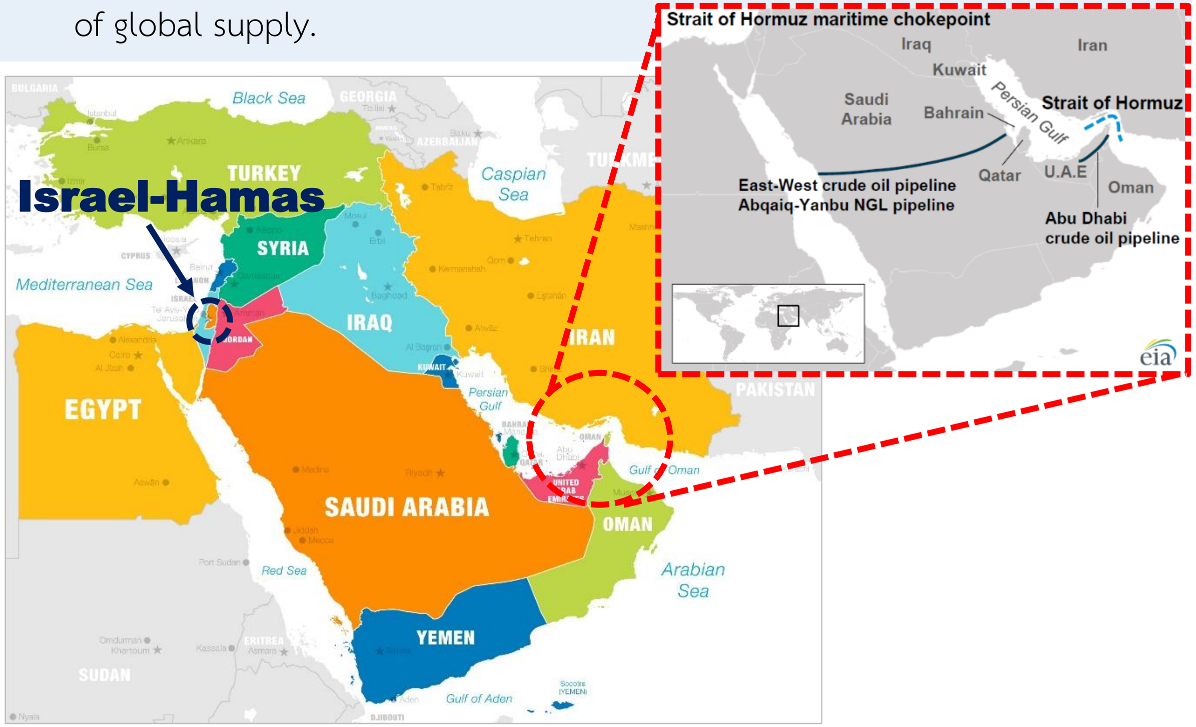
Downside risks

- The government rolls out more living cost subsidies than expected

Global energy prices could increase significantly if the Middle East conflict becomes widespread under tail-risk scenario

Issues to be monitored if the conflict becomes widespread

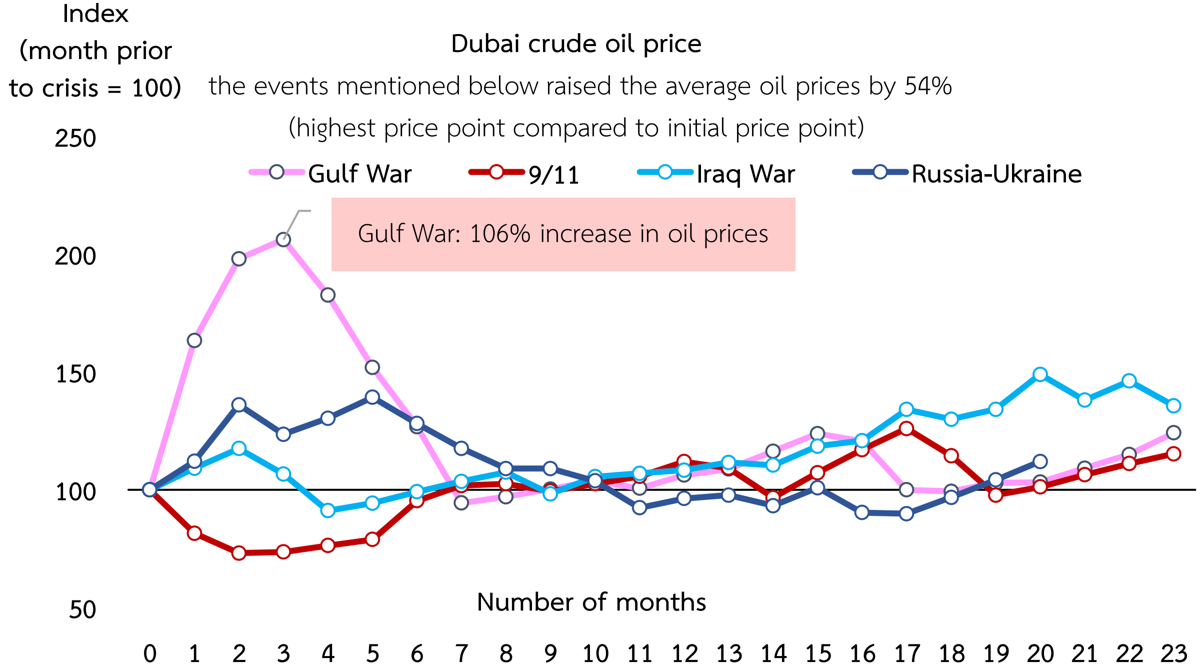
- **Regional conflict** with the Arab countries joining the fray, further escalating the conflicts
- **Shipping disruption** around the Strait of Hormuz in Iran, which is an important transportation of oil and natural gas, accounting for about 20% [1/] of global supply.



Note: [1/] The average quantities of oil and LNG transported through the Strait of Hormuz in 2022

Source: Reuters and EIA

Oil price is expected to increase and remain high for 1-2 quarters



Event	Period	Dubai crude oil price (USD/BBL)	
		Initial	Max / Min
Gulf War (Iraq-Kuwait)	1990 – 1991	15.3	31.6
9/11	2001	24.0	17.5
Iraq War	2003 – 2006	25.7	30.2
Russia-Ukraine	2022 – current	83.1	115.7

Source: World Bank, BOT calculation

Summary of key forecast assumptions

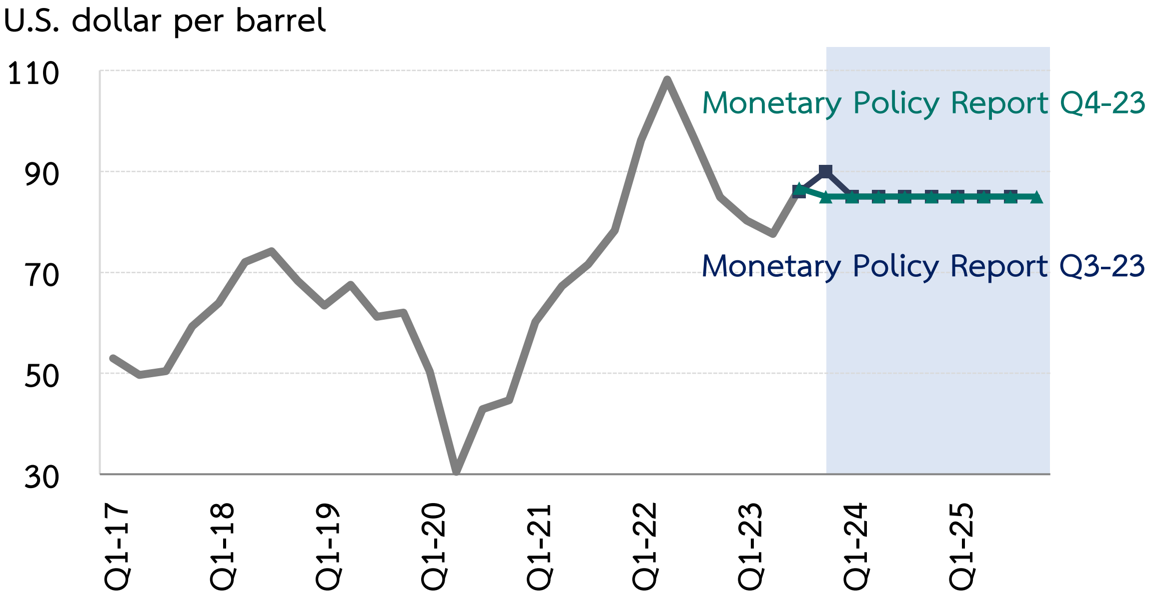
Annual percentage change	2022*	2023	2024	2025
Trading partners' growth (% YoY)[1/]	2.9	2.8 (2.7)	2.6 (2.5)	2.7
Fed funds rate (% at year-end)	4.25 - 4.50	5.25 - 5.50 (5.50 - 5.75)	4.50 - 4.75 (4.75 - 5.00)	2.50 - 2.75
Regional currencies (excl. China) vis-à-vis the U.S. dollar (index)[2/]	163.3	165.8 (164.2)	165.0 (163.1)	161.9
Dubai crude oil prices (U.S. dollar per barrel)	96.4	82.0 (83.0)	85.0 (85.0)	85.0
Farm income (% YoY)	13.5	-1.4 (-0.8)	1.2 (-0.6)	0.0
Government consumption at current price (billion baht)	3,080	3,002 (3,024)	3,051 (3,080)	3,151
Public investment at current price (billion baht)	1,041	1,047 (1,068)	1,089 (1,134)	1,116

Note: [1/] Weighted by each trading partner's share in Thailand's total exports
[2/] Increasing index represents depreciation, decreasing index represents appreciation
* Outturns
( ) previous forecast in the Monetary Policy Report Q3-2023

- **Trading partners' growth** for 2023 is revised up from the previous assessment on account of better-than-expected outturns, especially for US and China. For 2024 and 2025, trading partners' growth would be driven by the US where private consumption is expected to strongly expand, as well as China and Japan which would benefit from additional government stimulus measures.
- **The federal funds rate** is expected to be at 5.25 - 5.50% throughout the remainder of 2023. It is expected that the Fed would start to cut the federal funds rate from September 2024 onwards as inflationary pressure gradually declines.
- **Regional currencies (excluding the Chinese yuan)** would depreciate in the latter half of 2023 on account of weaker-than-expected economic growth in Asia. Looking ahead, regional currencies are expected to appreciate in line with the economic recovery of regional economies.
- **Dubai crude oil prices** in 2023 are revised down from the previous projection on account of lower-than-expected oil price outturns. In the period ahead, crude oil prices are expected to increase due to tighter market conditions from the expansion in the global economy and a slowdown in global crude oil output.
- **Farm income (excluding government measures)** in 2023 would contract mainly on account of lower palm oil, rubber, and pork prices. For 2024, farm income would see positive growth from higher agricultural prices due to the impact of El Niño as well as the recovery in global demand. Farm income is expected to be largely stable in 2025.
- **Public spending at current prices** for 2023 is revised down on account of lower-than-expected outturns. For 2024 and 2025, public spending would increase in line with the larger budget and medium-term fiscal plans (FY2024-2027).

Dubai crude oil prices assumption for 2023 is revised down but is unchanged for 2024 due to lower-than-expected price outturns. It is also expected that the Israel-Hamas conflict would have limited impact on oil prices.

Projected Dubai crude oil prices



Projected Dubai crude oil prices

U.S. dollar per barrel	2022*	2023	2024	2025
Dubai crude oil prices (annual average)	96.4	82 (83)	85 (85)	85

Note: * Outturns

( ) previous forecast in the Monetary Policy Report Q3-2023

Source: BOT forecast

Dubai crude oil prices assumption for 2023 is revised down from 83 to 82 U.S. dollar per barrel on account of lower-than-expected price outturns. It is also expected that the Israel-Hamas conflict would have limited impact on oil prices. The conflict would result in oil price increases for only a short period because it would not impact oil production infrastructures. However, upside risks to oil prices have increased from the risk that the conflict could become widespread, impacting oil production and oil transport.

For 2024, the assumption remains unchanged whereby crude oil prices would be higher than current levels due to a tightening in the oil market from the expansion in the global economy and the slowdown in crude oil production.

Risks to the outlook for Dubai crude oil prices are tilted to the upside:

- Upside risks: **Geopolitical tensions such as the Israel-Hamas and Russia-Ukraine conflicts** could escalate further / become more widespread / prolonged than expected, **and oil production cuts by OPEC+** that could last longer or drop sharper than expected.
- Downside risks: **Uncertainties in the global economy.** The global economic recovery could be slower than expected **and oil production in Venezuela** could ramp up quickly after the US relaxes sanctions.

Box 3: Macroeconomic forecast under the impact of the digital wallet scheme

Macroeconomic forecasts for 2024 is subject to uncertainties related to the 10,000 baht digital wallet scheme which would have significant implications for the assessment of both growth and inflation outlooks. In this regard, the Monetary Policy Committee (MPC) agreed that it would be appropriate to publish 2 separate forecast scenarios: one including and one excluding the impact of the digital wallet scheme. This approach would provide a clearer explanation of the macroeconomic outlook. Additionally, it allows the comparison with other economic agency forecasts, which do not include the impact of the digital wallet scheme, and with the previous forecasts in the Monetary Policy Report Q3-2023, which has already included the impact of the digital wallet scheme. **The key differences between the previous and latest projections, accounted for the impact of the digital wallet scheme, are (1) the slowdown in export of services; and (2) changes in the digital wallet scheme details.**

Latest developments pertaining to the digital wallet scheme

On 10 November 2023, the government announced the digital wallet scheme details, which can be summarized as follow: **(1) target group:** narrowed down from Thai citizens aged 16 and over (56 million persons) to those with a monthly salary below 70,000 baht and bank deposits not exceeding 500,000 baht (50 million persons); **(2) total amount:** budgetary allocation is reduced from 560 billion baht to 500 billion baht; **(3) scope of use:** the coverage area in which funds from the digital wallet scheme can be used is changed from a 4-kilometer radius to the district of the person's residential address as indicated on their citizen ID; **(4) type of goods and merchants:** funds from the digital wallet scheme cannot be used to pay for online purchases, alcoholic beverages, cigarettes, fuel, or to repay debt. Moreover, merchants must be registered in the tax system to be eligible to convert their revenue into cash; and **(5) source of fund:** the government will issue a new legal Act permitting public borrowing to finance the scheme, subject to approval by the parliament.

The MPC assessed that the approval process for the new Act would take some time and thus the economic benefits from the digital wallet scheme would not materialize until the latter half of 2024, as opposed to the first half of the year as previously expected. Empirical analysis also found that the fiscal multiplier of direct transfers is typically lower than direct government consumption or investment, which also depends on the recipient groups, eligibility, and prevailing economic conditions. All of which would affect new final demand generated by the transfers. Furthermore, an assessment of the economic impact would also depend on the aggregate amount and the timing of implementation as the stimulus effects would be front-loaded and

Box 3: Macroeconomic forecast under the impact of the digital wallet scheme

temporary. **In summary, the impact of the digital wallet scheme is revised down from the previous assessment, but the impact on the forecasts is subject to changes given that the details and implementation date of the digital wallet scheme remain highly uncertain.**

Latest economic projections including and excluding the impact of the digital wallet scheme:

Latest projections from the Monetary Policy Report Q4-23 is divided into 2 scenarios: one including and one excluding the impact of the digital wallet scheme. **For the scenario which includes the impact of the digital wallet scheme,** the Thai economy is projected to grow 3.8% in 2024 before slowing down to 2.8% in 2025. This is due to a higher base in 2024. Headline inflation is projected to be 2.2% in 2024 and 2.0% in 2025 due to higher core inflation stemming from increasing demand pressures. **In the other scenario which excludes the impact of the digital wallet scheme**, the Thai economy would continue to recover and register GDP growth of 3.2% in 2024 and 3.1% in 2025. The GDP growth difference in 2024 is 0.6 percentage point compared to the scenario with the digital wallet scheme. Headline inflation would be 2.0% in 2024 and 1.9% in 2025, lower than the scenario with the digital wallet scheme **(Chart 1 and 2).**

Comparing the previous and latest forecasts:

To compare the forecast in Monetary Policy Report Q3-23 with the forecast in Monetary Policy Report Q4-23, the scenario with the impact of digital wallet scheme must be used. **Thailand's GDP growth for 2024** was projected at 4.4% in the previous assessment, compared to 3.8% in the latest assessment. The difference is due to (1) a slowdown in exports of services because of lower tourism receipt and income of other services, such as goods and passenger transports, business and other general commercial services; and (2) revision of digital wallet scheme details and implementation date. **Headline inflation in 2024** was projected to be 2.6% in the previous assessment compared to 2.2% in the latest assessment. The difference is due to (1) lower raw food prices and core inflation; and (2) lower demand-pull inflationary pressure due to the revision of digital wallet scheme details and implementation date. **(Chart 1 and 2).**

Chart 1: GDP growth forecast

%YoY	2023	2024	2025
MPR Q3-23 including the impact of DW	2.8	4.4	n.a.
MPR Q4-23 including the impact of DW	2.4	3.8	2.8
MPR Q4-23 excluding the impact of DW	2.4	3.2	3.1

Box 3: Macroeconomic forecast under the impact of the digital wallet scheme

Chart 2: Inflation forecast

Headline inflation

%YoY	2023	2024	2025
MPR Q3-23 including the impact of DW	1.6	2.6	n.a.
MPR Q4-23 including the impact of DW	1.3	2.2	2.0
MPR Q4-23 excluding the impact of DW	1.3	2.0	1.9

Core inflation

%YoY	2023	2024	2025
MPR Q3-23 including the impact of DW	1.4	2.0	n.a.
MPR Q4-23 including the impact of DW	1.3	1.5	1.4
MPR Q4-23 excluding the impact of DW	1.3	1.2	1.3

Chart 3: Forecast by components (including and excluding the impact of digital wallet)

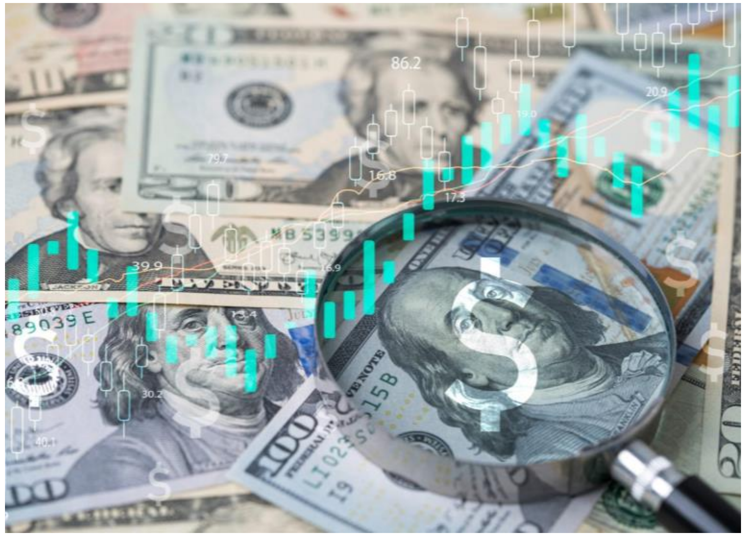
%YoY	2023	2024		2025	
		excl. DW	incl. DW	excl. DW	incl. DW
GDP Growth	2.4	3.2	3.8	3.1	2.8
Domestic Demand	3.7	2.9	3.7	3.1	2.5
Private consumption	7.1	3.2	4.5	3.0	2.1
Private investment	2.4	3.6	3.9	4.5	4.1
Government consumption	-4.0	1.1	1.1	2.8	2.8
Public investment	-0.5	2.7	2.7	1.4	1.4
Export volume of goods and services	2.4	5.6	5.6	3.8	3.8
Import volume of goods and services	-2.1	4.9	5.2	3.8	3.4
Current account (billion U.S. dollars)	5.0	10.0	8.3	14.8	13.8
Value of merchandise exports (%YoY)	-1.5	4.3	4.3	3.3	3.3
Value of merchandise imports (%YoY)	-1.8	5.3	5.7	2.9	2.7
Headline inflation	1.3	2.0	2.2	1.9	2.0
Core inflation	1.3	1.2	1.5	1.3	1.4

Note: DW is the 10,000 baht digital wallet scheme

Financial conditions: Key Issues

Overall financial conditions tightened somewhat as private sector funding costs increased in line with the recent policy rate hike.

Private credit growth slowed down due to debt repayments of business loans, but growth is expected to recover in tandem with the recovery in economic activities going forward.

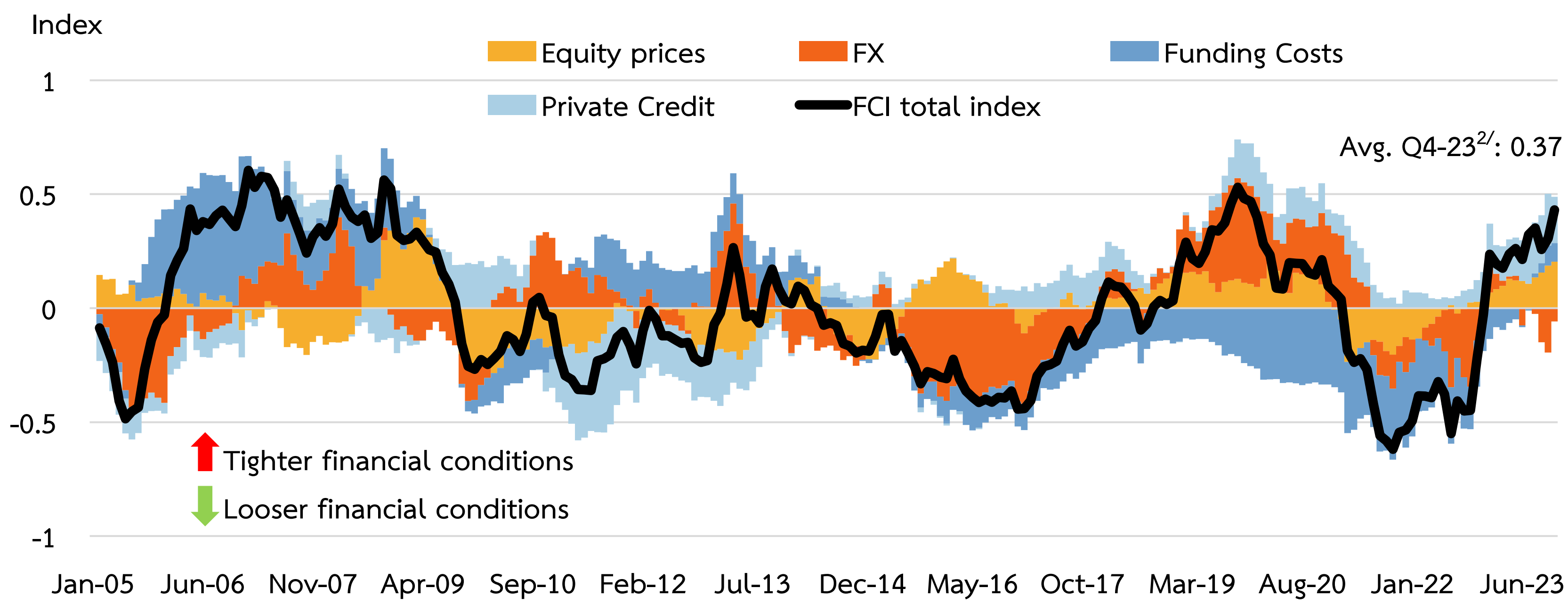


The baht on average depreciated from the previous quarter due to both external and Thailand-specific factors.

Overall financial conditions tightened somewhat.

Private sector funding costs increased in line with the recent policy rate hike.

Financial Conditions Index: FCI[1/]



Overall financial conditions in Q4/2023 tightened somewhat from the previous quarter. Private sector funding costs increased as commercial banks passed on higher financing costs through to their lending rates. Private credit growth remained tight as with the previous quarter because business loan growth has started to stabilize in line with the recovery in economic activities. The SET index declined due to weaker-than-expected corporate performances for Q3/2023 as well as uncertainties regarding government measures. However, financial conditions pertaining to the exchange rate eased due to the baht's depreciation driven primarily by market expectations regarding the Fed's monetary policy outlook.

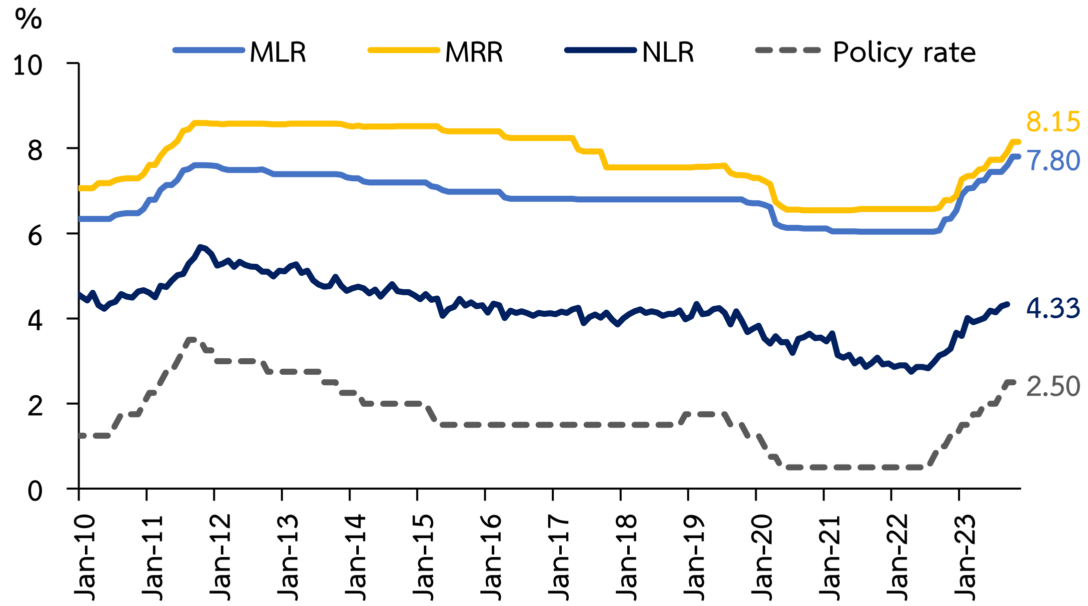
Note: [1/] The BOT improved the calculations of the FCI by adjusting the variables and weights for each FCI-sub indices to be proportionate to its respective impact on economic growth over the next four quarters and utilizing the Bayesian VAR with sign restrictions method.

[2/] Outturns for Q4/2023 were averaged up until 28 Nov 2023

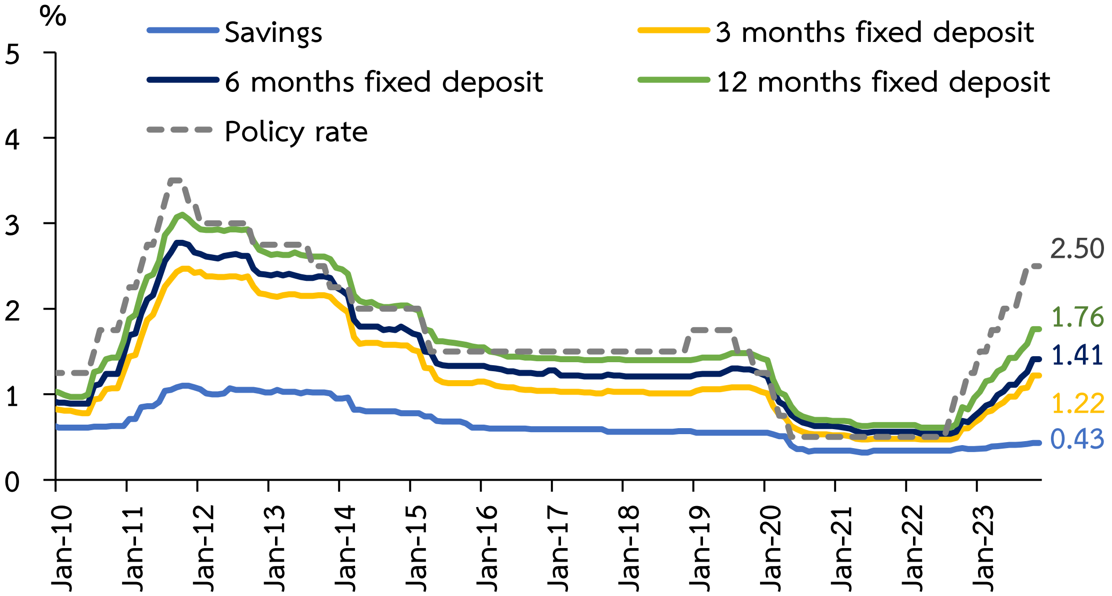
Source: BOT calculations

Commercial banks' lending rates increased in line with recent policy rate hike.

Commercial bank lending rates



Commercial bank deposit rates

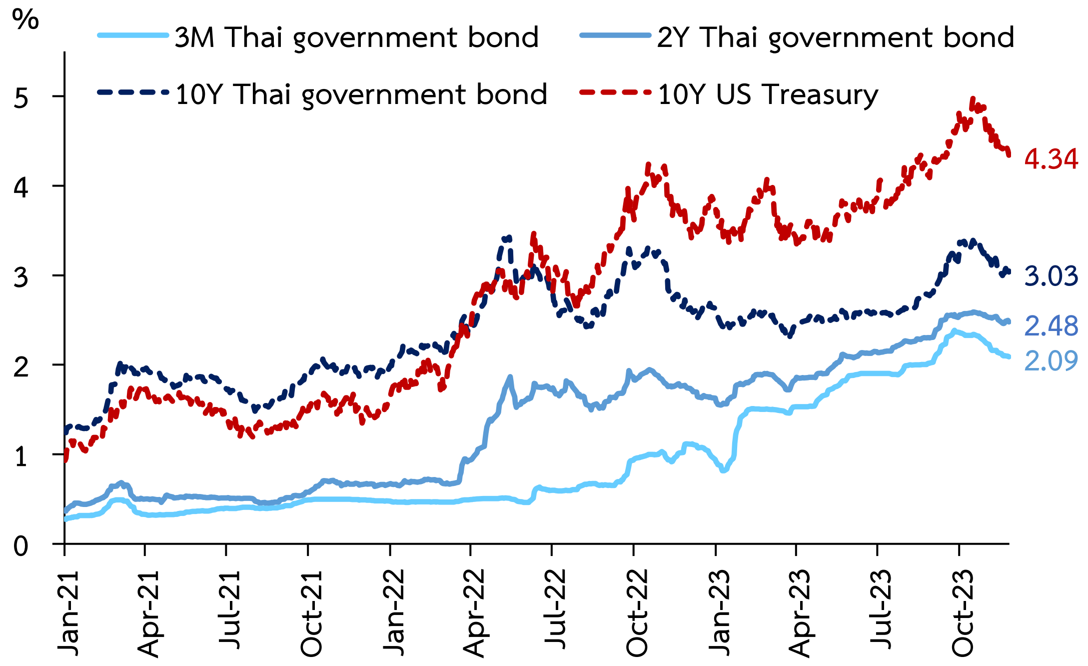


Note: (1) Monthly average of 14 commercial banks (data as of 28 Nov 2023)
(2) NLR = new loan rate (data as of Sep 2023)
Source: BOT

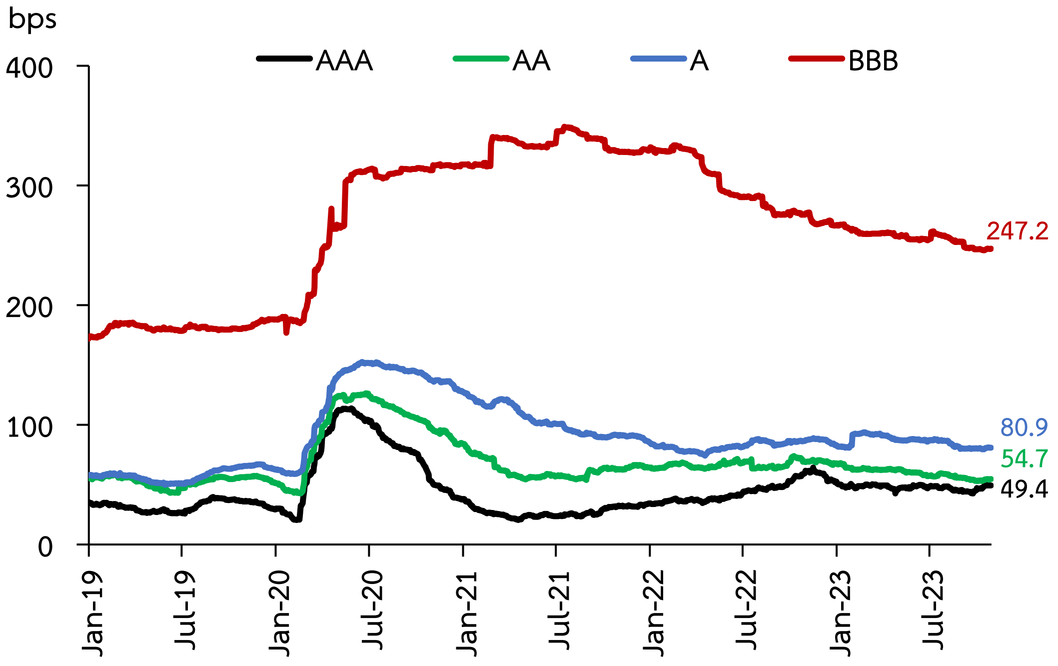
Commercial banks' lending and deposit rates gradually increased after the MPC raised the policy rate to 2.50% on 27 September 2023. Commercial banks raised both the minimum loan rate (MLR) and the minimum retail rate (MRR) throughout the normalization cycle, but raised the MRR to a lesser extent compared to the MLR to soften the impact on vulnerable borrowers, most of whom are subject to the MRR. Meanwhile, increased in deposit rates mostly applied to fixed deposits, especially long-term fixed deposits. **The new loan rate (NLR) increased slightly as of September 2023.** The increased in NLR was in line with the increased in benchmark lending rates and mostly applied to loans not exceeding 500 million baht for firms in the manufacturing sector.

Financing costs in the bond market have declined. The bond market still functions normally.

Thai government bond and US Treasury yields



Corporate and government bond credit spread, by credit rating

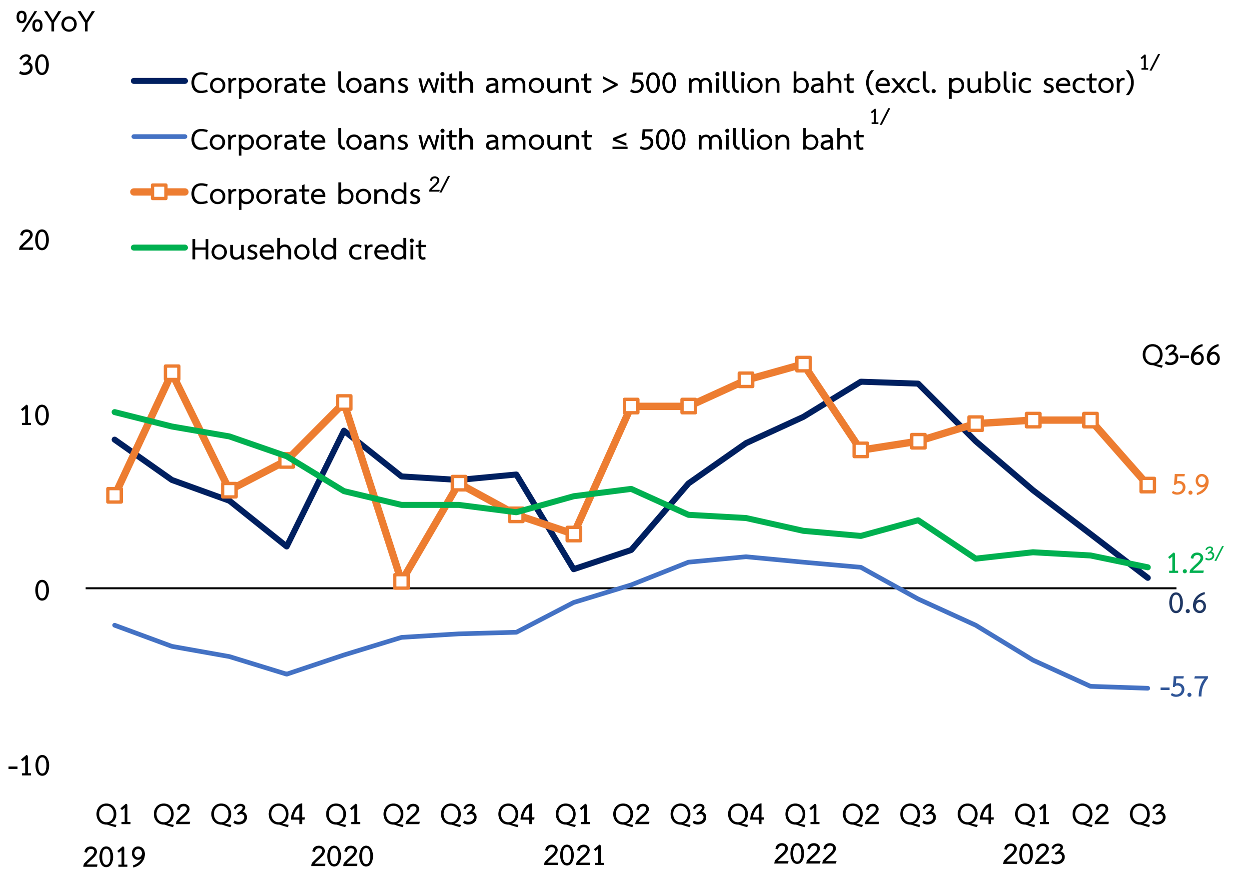


Source: ThaiBMA (as of 28 Nov 2023)

Short-term government bond yields declined due to growing investment demand for term funds, but short-term yields remained close to the policy rate. Meanwhile, **medium- and long-term government bond yields** declined in line with movements in US Treasury yields which fell due to market expectations about the Fed's monetary policy outlook and alleviating concerns regarding the supply of US Treasury after a confirmation that bond issuance would be lower than previously expected. **Credit spreads remain largely unchanged** from the previous quarter, with limited impact from recent debt defaults of some corporate bonds.

Private credit in Q3-2023 slowed down overall.

Private credit



Note: 1/ Credit line at each commercial bank

2/ Data statistics have been improved; for more details see [Improving and developing bank lending and corporate bond statistics] (in Thai)

3/ Household credit would have grown by 3.5% if the credit card and personal loan portfolio of one bank had not been transferred to its subsidiary (excluded from commercial bank credit calculation)

In Q3-2023, large corporate loan growth (credit limit > 500 million baht) slowed down mainly due to debt repayments. Loans extended to export-related manufacturing businesses have continued to decline in line with the slowdown in exports. However, overall business loan growth remains positive due to borrowings by holding companies and construction businesses. **Some large corporates continued to issue bonds** to repay debts owed to banks, although issuances have slowed after having accelerated in the prior period.

SMEs loan growth (credit limit ≤ 500 million baht) contracted from the same period last year. This was due to repayment on maturing soft loans as well as more cautious lending on the part of the banks.

Overall household credit growth slowed down slightly on account of personal loans and mortgage loans, partly due to higher borrowing costs and living costs, and as banks remained cautious for auto loans given credit risks of borrowers. Meanwhile, credit card loan growth was largely stable from the previous quarter[1/].

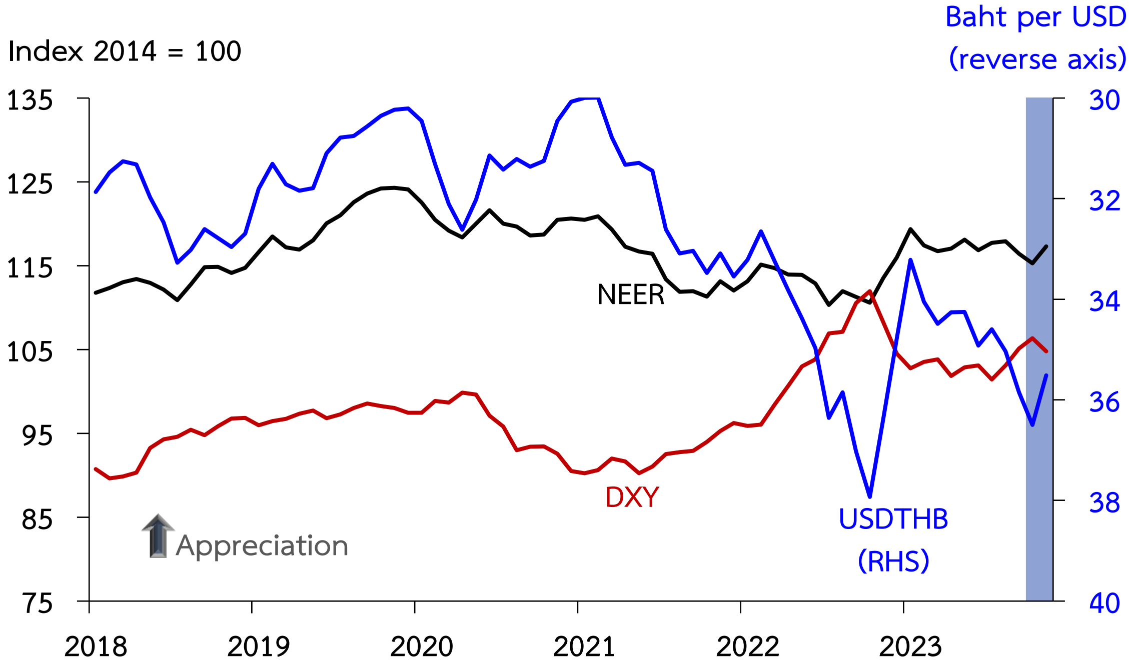
For Q4-2023[2/], loan demand would continue to grow in line with the economic recovery especially among large corporates looking to invest and make business acquisitions. Meanwhile, SMEs' credit demand would be driven by the need to build up inventory and working capital. Household credit is expected to increase across all loan types in line with improving consumption spending and consumer confidence. Meanwhile, demand for auto loans has yet to recover due to strict terms of the lending contract.

Note: 1/ After adding back credit card and personal loan portfolio of one bank that has already been transferred to its subsidiary

2/ Report on Credit Conditions for Q3/2023 and outlook for Q4/2023

The baht on average depreciated from the previous quarter due to both external and Thailand-specific factors.

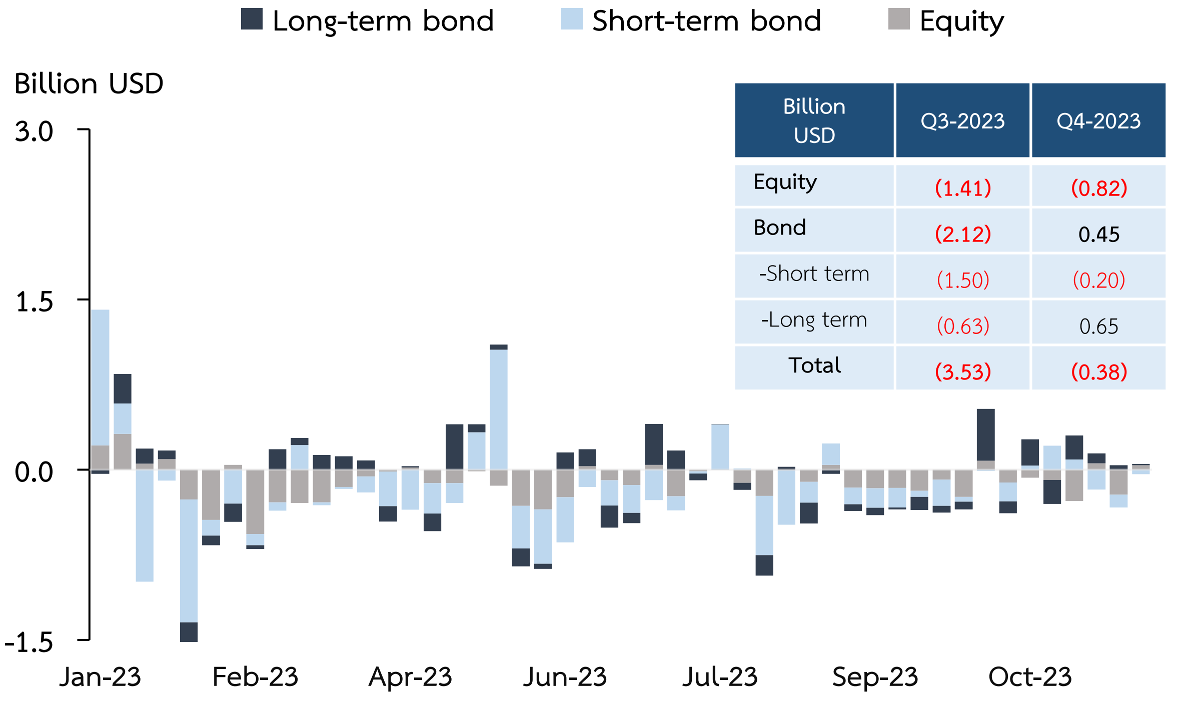
Baht per U.S. dollar (USDTHB) and exchange rate indices



Note: Monthly average as of 28 Nov 2023

Source: BOT and Bloomberg

Capital flows into Thai securities



Billion USD	Q3-2023	Q4-2023
Equity	(1.41)	(0.82)
Bond	(2.12)	0.45
-Short term	(1.50)	(0.20)
-Long term	(0.63)	0.65
Total	(3.53)	(0.38)

Note: Weekly data, cumulative from the first trading day (Q4-2023 data as of 28 Nov 2023)

Source: ThaiBMA and Bloomberg

In Q4-2023, the baht averaged 36.01 per U.S. dollar, depreciating from the average value of 35.17 baht per U.S. dollar in the previous quarter. The baht's movement was driven mainly by market expectations about the Fed's monetary policy outlook. The bond market saw net capital inflows in Q4-2023, whereas equity market experienced outflows due to weaker-than-expected Q3-2023 corporate performances and uncertainties pertaining to government measures. **The nominal effective exchange rate (NEER) averaged at 118.76, largely unchanged from the previous quarter.** This is because the baht's movements on average was in line with trading partners' and competitors' currencies.

Monetary Policy Decision: Summary of Key Considerations

Economic growth

The Thai economy overall continues to recover. Growth is expected to be more balanced going forward, but risk of slower-than-expected exports growth remains to be monitored.

Inflation

Headline inflation would be within the target range but there are risks that must be monitored, namely El Niño and conflicts in the Middle East that could increase global energy prices.

Financial stability

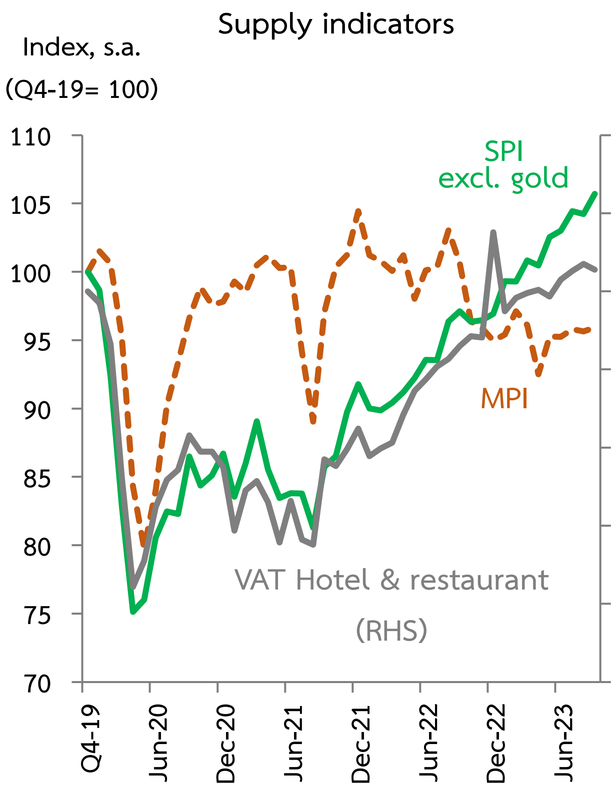
Overall financial system remains resilient but there is a need to continue monitoring credit quality that could be affected by debt serviceability of some vulnerable SMEs and households.

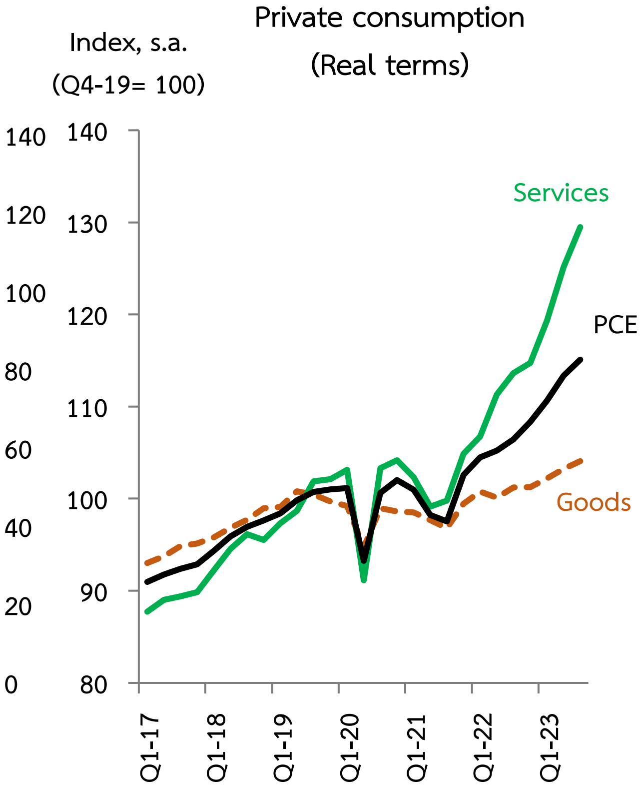
Monetary Policy Decision

The MPC deems the current policy rate appropriate for supporting long-term sustainable growth. Monetary policy deliberation going forward must take into account growth and inflation outlook and associated risks.

The Thai economy overall continued to recover driven primarily by domestic demand, especially spending on services. Growth is expected to be more balanced in 2024 but there is a need to monitor risks of slower exports recovery and weaker-than-expected Chinese economy.

Services sector recovery is relatively strong compared to the manufacturing sector, and is a key driver of private consumption

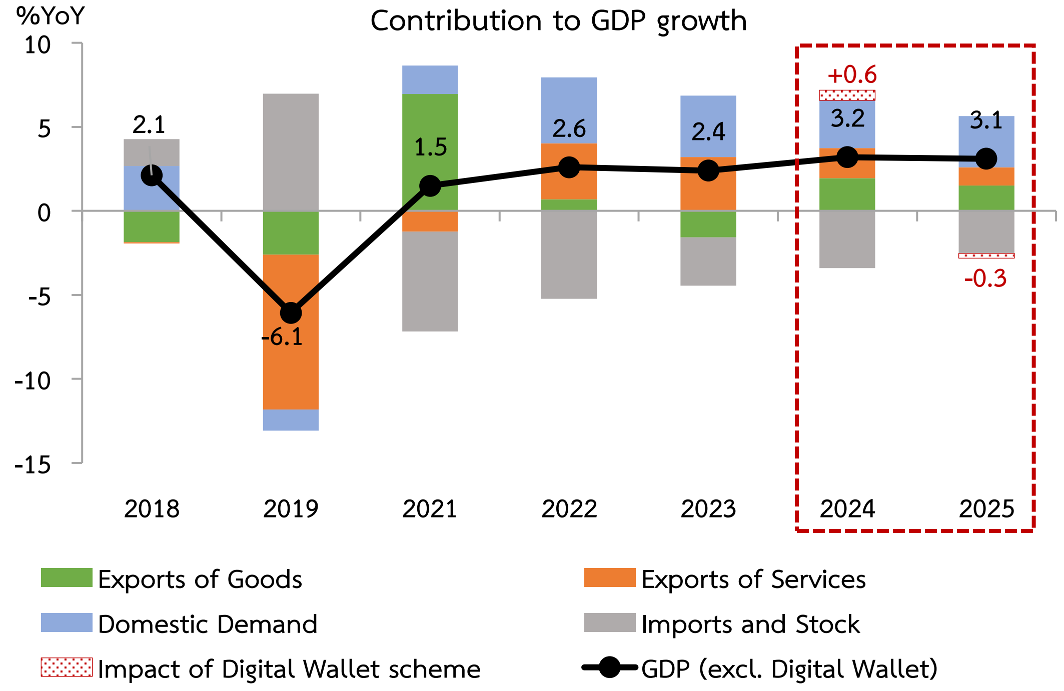




Note: MPI = Manufacturing Production Index, SPI = Service Production Index (excluding government's administrative activities and services, and any activities related to gold), VAT Hotel & restaurant = VAT base sales for hotel and restaurants, PCE = Private Consumption Expenditure

Source: NESDB, OIE, the Revenue Department, Ministry of Tourism and Sports, BOT calculations

Additional support from external demand in 2024 would help GDP growth become more balanced going forward

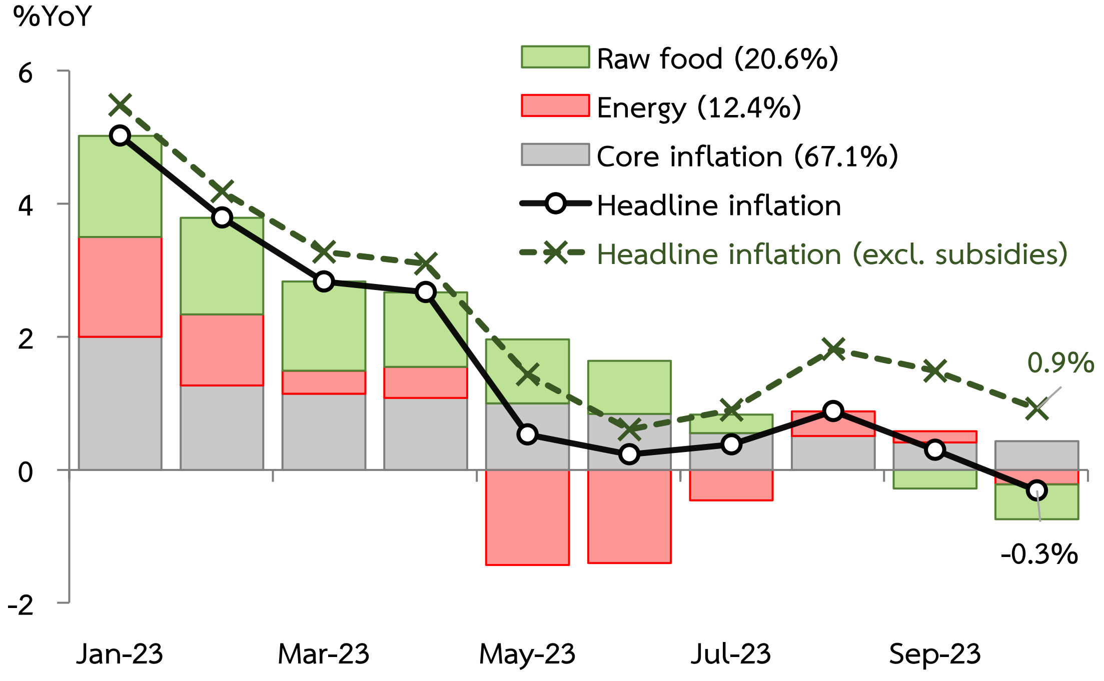


The Thai economy would continue to recover, with or without the digital wallet scheme. However, there remains the need to monitor risks that merchandise exports might not fully benefit from the global economic recovery and the upturn in the global electronic cycle due to structural impediments and decreased competitiveness of Thai exporters.

Headline inflation would decline temporarily before returning to the target range in the period ahead. However, risks stemming from El Niño and potentially higher energy prices from prolonged conflict in the Middle East remained.

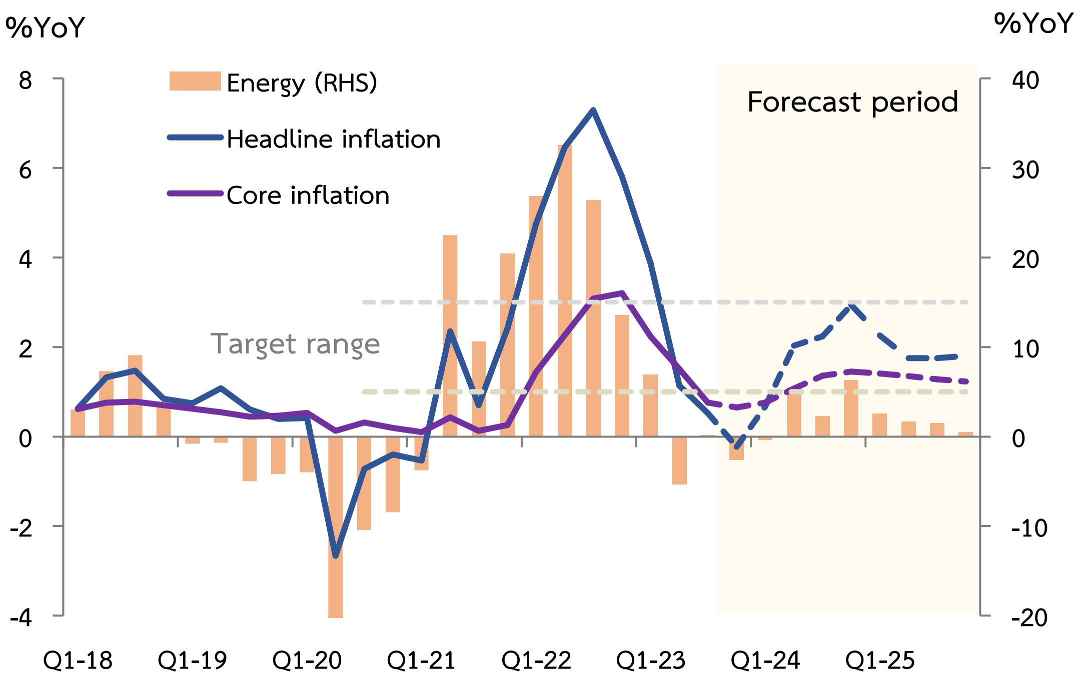
Government's living costs subsidies resulted in a temporary decline in inflation

Contribution to headline inflation



Inflation would be higher in 2024

Inflation forecast



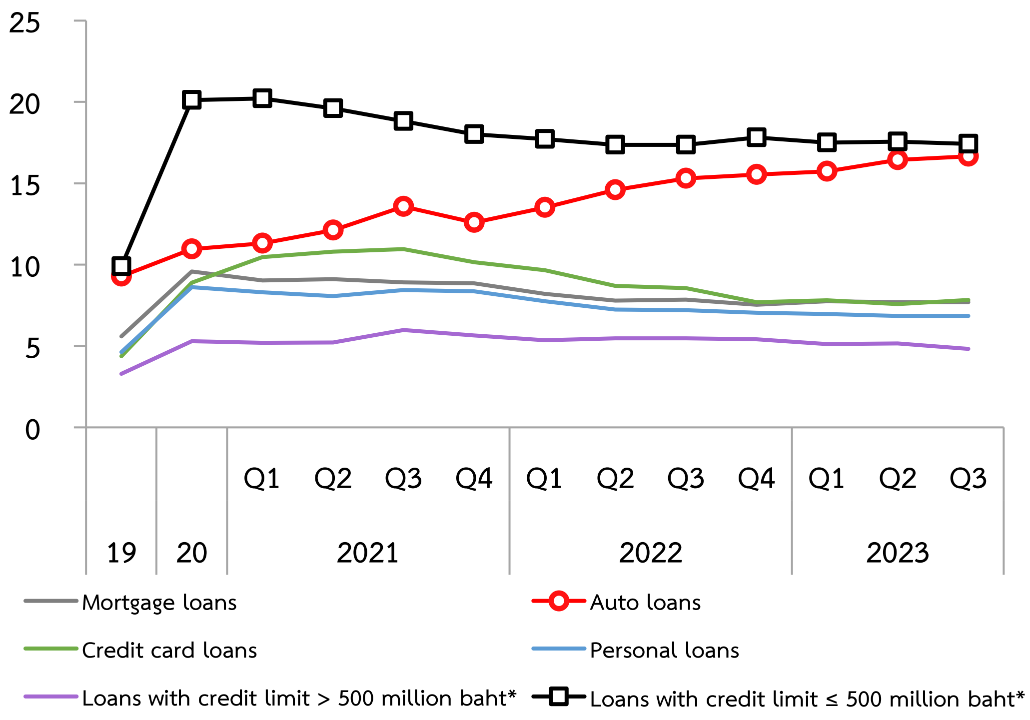
Note: ( ) denotes CPI weights for baseline year 2019; *Energy price subsidies include (1) Diesel price ceiling at 35 baht (Jan – May 23), ceiling at 32 baht (Jun – Sep 23), and ceiling at 30 baht (Oct 23) and (2) electricity bill subsidies from Jan – Apr 23, May – Aug 23, and Sep – Dec 23

Source: Ministry of Commerce, BOT calculation and forecast

Financial stability remains sound overall but there is a need to monitor debt serviceability of some vulnerable SMEs and households facing high debt burdens and slow income recovery.

Credit quality for business loans remained stable, while credit quality for retail loans deteriorated slightly especially for auto loans

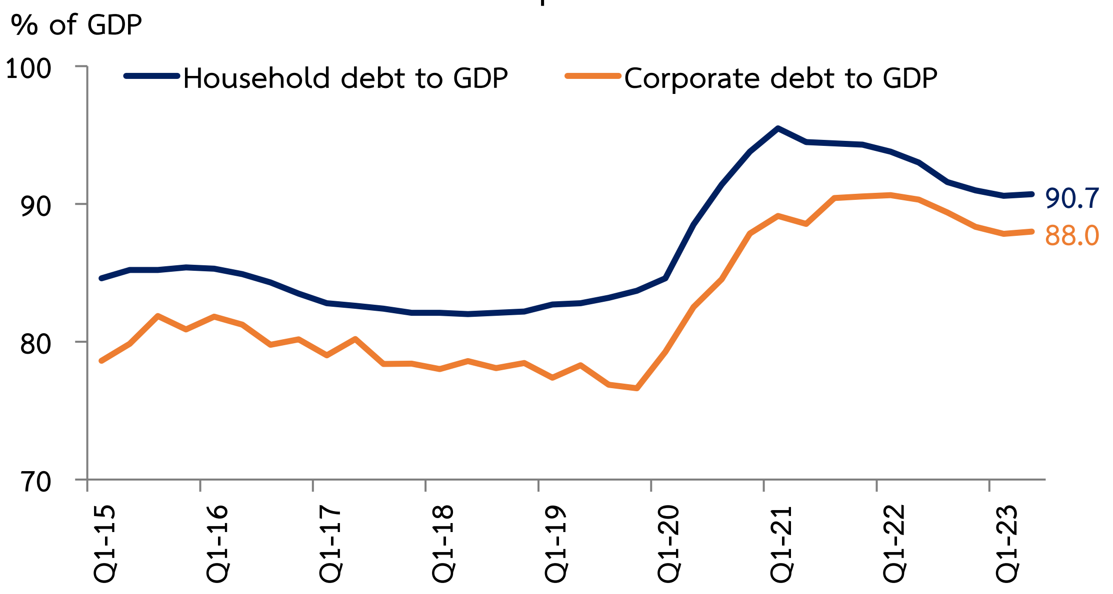
Credit quality for business and retail loans
(Share of stage 2 and stage 3 loans)



Note: *Businesses that have credit lines with each commercial banks, and have adjusted their reporting standards in accordance to the TFRS9 back in 2020

Overall debt levels have gradually declined but remained high overall

Household and corporate debt to GDP



Source: NESDB and BOT, BOT calculation

Box 4: Thailand's household debt situation and financial vulnerabilities

ธนาคารแห่งประเทศไทย
BANK OF THAILAND

The current policy rate is appropriate for supporting long-term sustainable growth.

MPC Meeting No. 6/2023
(29 November 2023)

MPC voted unanimously
to maintain the policy rate

Current policy rate:

2.50%

The Thai economy overall continued to recover. Growth is expected to be more balanced in the period ahead, given the continued recovery in tourism and a turnaround in merchandise exports. However, there is still the risk that Thai exports would not benefit from the global economic recovery and the upturn in the global electronic cycle as previously expected. Inflation is projected to be within the target range. There remains the need to monitor risks of El Niño and the potential increase in global energy prices arising from the Middle East conflict.

Financial system remains resilient overall. The MPC has continued to support debt restructuring measures as well as targeted measures and sustainable debt resolution for vulnerable groups, particularly responsible lending measures.

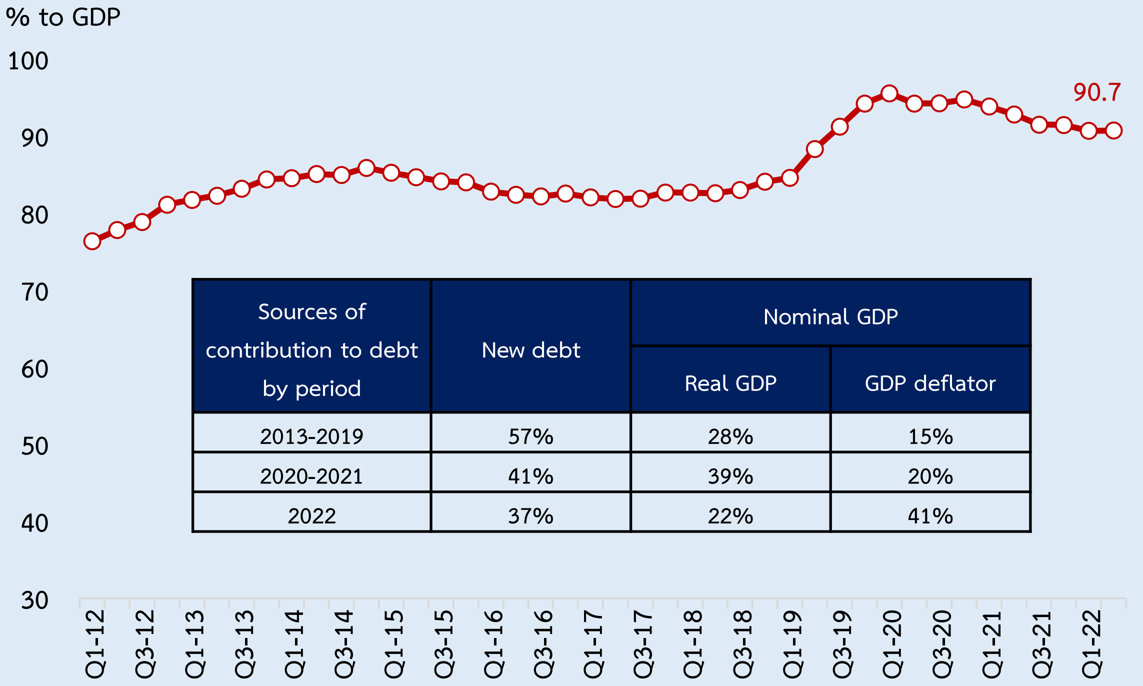
The current policy rate is appropriate for supporting long-term sustainable growth. However, the macroeconomic outlook remains highly uncertain with both upside and downside risks. Monetary policy deliberation going forward must take into account growth and inflation outlook as well as associated risks.

Box 4: Thailand's household debt situation and financial vulnerabilities

Household debt is a longstanding problem in Thailand and pose a key vulnerability to the Thai economy. Latest indicators have shown that whilst household debt in Thailand has declined somewhat in tandem with the ongoing economic recovery, households continue to incur unproductive loans, which do not generate future income or wealth, at a high level to fund current consumption. In addition, credit quality of some borrowers, especially those affected by the COVID-19 pandemic, has not improved significantly. The aforementioned problems negatively impact Thailand's financial stability and pose as an important policy challenge for safeguarding financial stability.

The increase in household debt has led to the accumulation of financial vulnerabilities in Thailand for quite some time. Over the past 10 years, household debt in Thailand has constantly been on the rise due to several key factors **(Chart 1)** namely (1) the first-car scheme which led to a sharp increase in auto loans during 2011-2012; (2) the historic flood in 2011 that resulted in higher loan demand for post-flood reparations; and (3) increased competition between banks in lending retail loans coupled with prolonged low interest rates for over 10 years. Furthermore, Thailand's outstanding household debt was exacerbated by the COVID-19 pandemic in 2020 which led to the decline in economic activities and a sharp increase in debt-to-GDP ratio, peaking at 95.5% as of end-Q1/2021 before gradually declining to 90.7% as of end-Q2/2023. The recent decline in debt-to-GDP was due to the recovery in economic activities as well as rising consumer prices (increase in GDP deflator).

Chart 1: Household debt to GDP[1/] and sources of contribution[2/]



Sources of contribution to debt by period	New debt	Nominal GDP	
		Real GDP	GDP deflator
2013-2019	57%	28%	15%
2020-2021	41%	39%	20%
2022	37%	22%	41%

Note: [1/]The coverage of household debt to GDP ratio has expanded to include the student loan fund and other household debts. The new dataset coverage starts from 2012.
[2/]Economic growth (increase in real GDP) or higher inflation (increase in GDP deflator) will result in the decline of household debt to GDP (negative contribution).

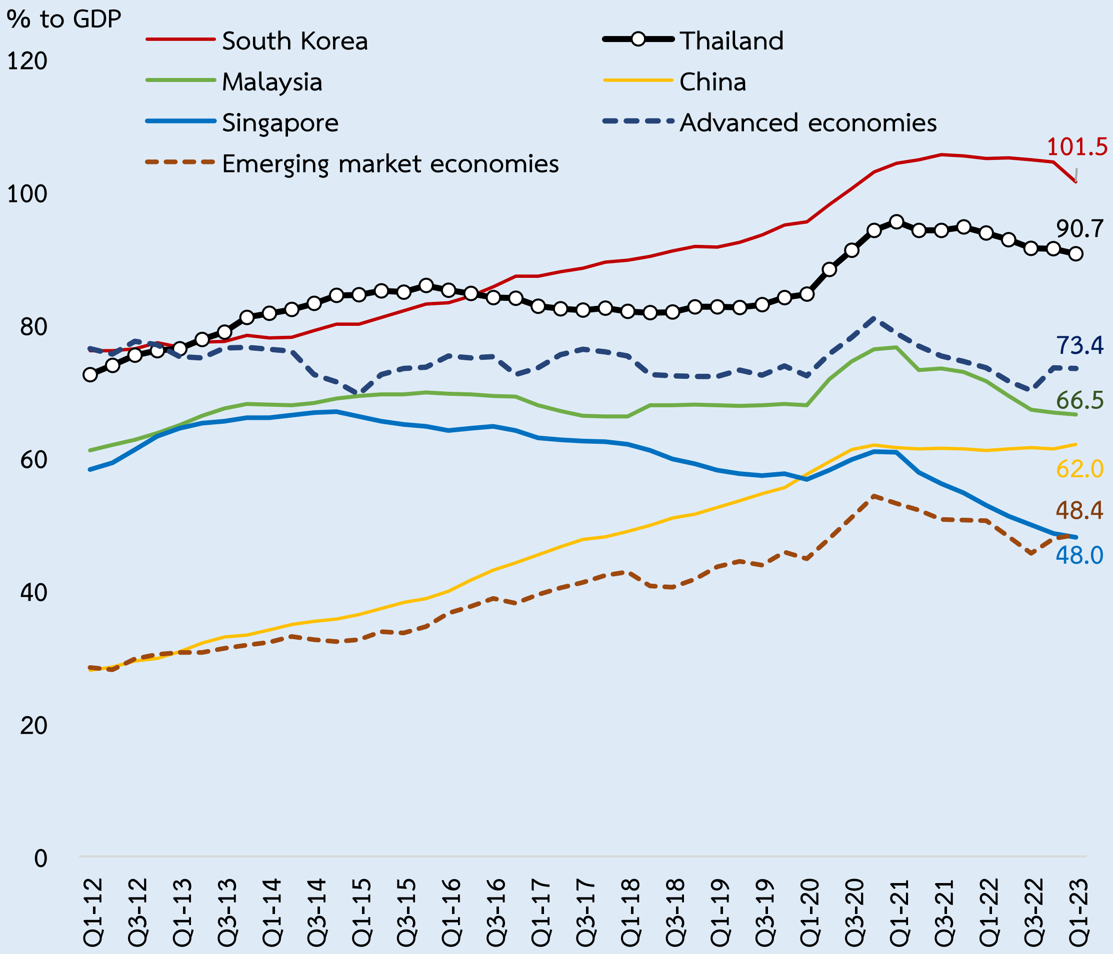
Source: BOT and NESDB

Box 4: Thailand's household debt situation and financial vulnerabilities

Despite having declined somewhat, the current household debt situation in Thailand still remains a concern. Thailand's household debt to GDP ratio is still relatively higher than in many other countries within the region, with the exception of South Korea which faced a spike in demand for mortgage loans and investment loans as a result of low borrowing costs **(Chart 2)**.

Thailand's high household debt is a vulnerability to both macroeconomic and financial stability, in addition to the financial inequality across households of different income levels. The Socio-Economic Survey (SES) back in 2021 reveals that low-income households (bottom 20%) have debt service ratio (DSR) that were almost twice as high compared to other income groups. The vulnerable groups affected by the COVID-19 pandemic consist mostly of low income earners, in which their debt serviceability have not yet improved despite recent economic recovery. This is reflected in the high number of bank accounts, debtors, and outstanding amount of non-performing loans that exceed 90 days overdue since the COVID-19 pandemic **(Chart 3).** Among this group, 60% of borrowers owe their debt to specialized financial institutions (SFIs), 30% to non-banks, and 10% to commercial banks.

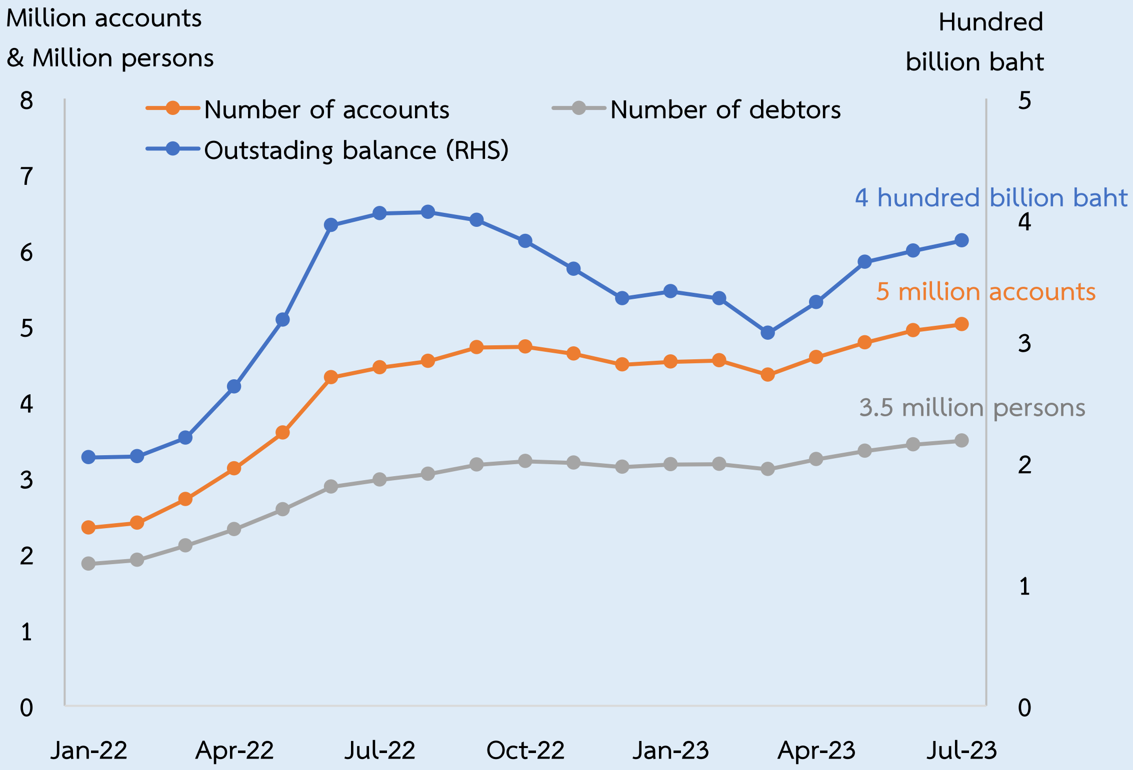
Chart 2: Household debt to GDP by countries



Source: BIS for other countries, BOT data for Thailand

Box 4: Thailand's household debt situation and financial vulnerabilities

Chart 3: Non-performing loans since the COVID-19 pandemic[1/]



Note: [1/]Data on overdue debt exceeding 90 days as a result of unnatural shocks (account status "21") began reporting back in January 2022, under the condition that the accounts of the debtors with their respective financial institutions 12 month prior to December 2019 are not overdue or do not exceed 30 days overdue.

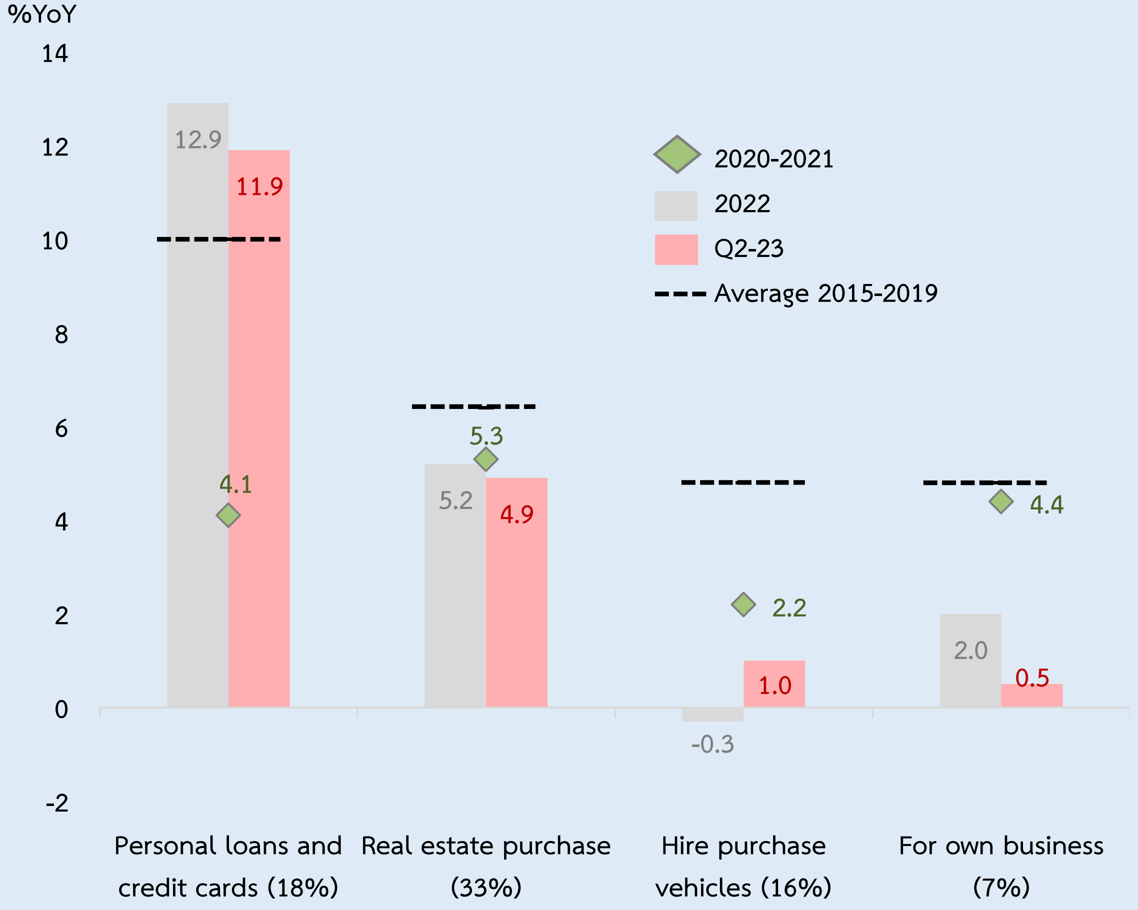
Source: National Credit Bureau (NCB)

Furthermore, persistently high household debt could impede long-term economic growth. A study by BIS (2017)[1] found that debt formulation by households would spur consumption and economic growth only for a short period, and that household debt to GDP ratio exceeding 80% would impede economic growth over the long term. For Thailand, the problem of household debt could become an even greater concern, as discovered when disaggregating household debt by loan purposes that personal loans under BOT supervision and credit card loans overall have been consistently increasing over the past 3-4 years, especially those extended by non-banks. Furthermore, those loans extended are primarily unproductive loans that do not generate future income or wealth and are short-term loans with high interest rates which ultimately subject the borrowers to high debt burden. As of current, those unproductive personal and credit card loans grew at 11.9% year-on-year. Taking into consideration different income groups, low-income groups at the bottom 20% of all earners have the highest share of credit card loans and personal loans at around 42% of total household debt by income groups. Thus, the current household debt situation further exacerbates the already high debt burden faced by the low-income groups which have the highest debt service ratio **(Chart 4 and 5).**

[1/] Further reading: The real effects of household debt in the short and long run (BIS Working Papers No. 607)

Box 4: Thailand's household debt situation and financial vulnerabilities

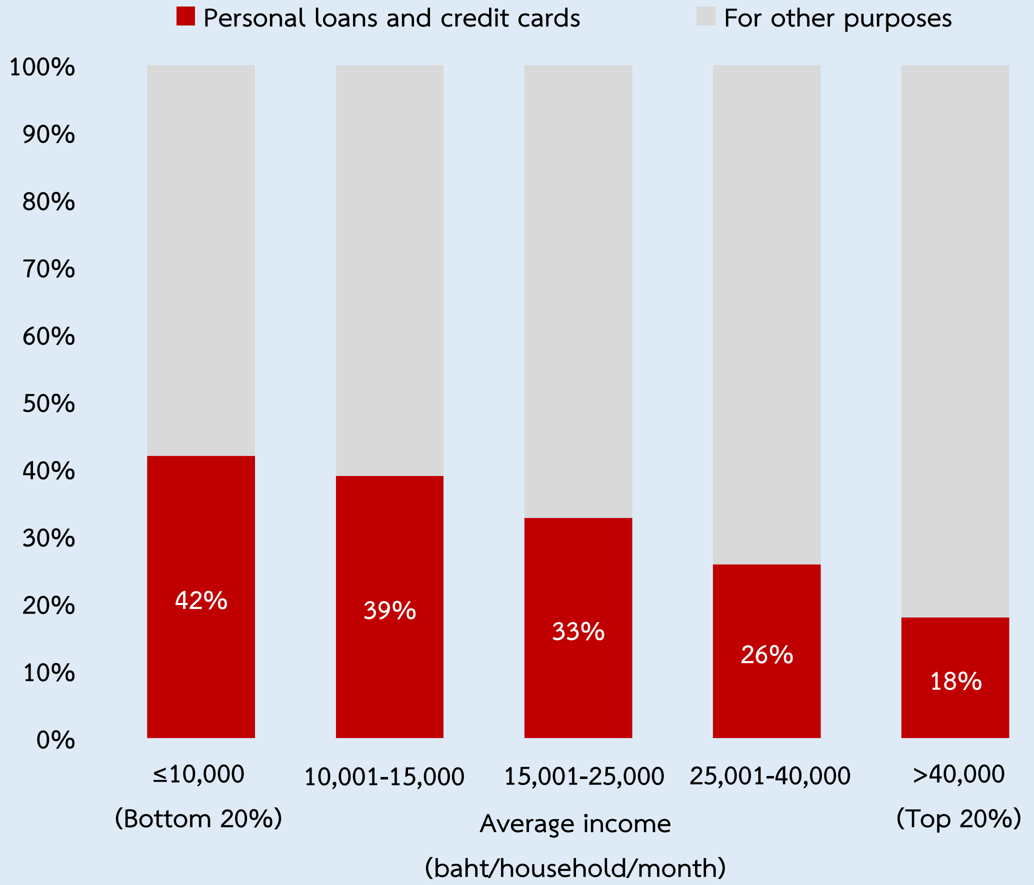
Chart 4: Household debt growth by purposes



Note: ( ) Proportions of respective household debt by purpose to outstanding household debt between 2020-2023Q2

Source: BOT household debt data

Chart 5: Proportions of personal loans and credit card loans by income groups (as of 2021)



Source: Socio-Economic Survey (SES) in 2021, calculated by BOT

Box 4: Thailand's household debt situation and financial vulnerabilities

If concerns regarding household debt are left unresolved, the conduct of policies to foster macroeconomic and financial stability will become more challenging. A study by the BOT (2023)[2/] found that rising household debt is one of the reasons for sharp upturns in the financial cycle which affects the intertemporal trade-off between short-term and longer-term monetary policy objectives. In particular, low for long policy interest rate would accelerate credit growth which would further accumulate financial fragilities. Furthermore, rising household debt would also impede future economic growth as well as increase the likelihood and severity of future economic crises. A study by the BOT (2018)[3/] found that the build-up of financial vulnerabilities from credit growth or higher asset prices during an upturn in the financial cycle, which corresponds to a 1% increase in the financial cycle index, would shift the growth-at-risk for 1-year ahead (risk scenario where GDP growth is at the 5th percentile of the distribution) downward further by 0.28%. Therefore, it is important to resolve Thailand's household debt problems so that it does not become an impediment to achieving monetary policy objectives of maintaining price stability, supporting sustainable economic growth, and preserving financial stability.

[2/] Further reading: When the world moves fast: adapting monetary policy to new challenges (PIER's aBRIDGEd article, 17 Jan 2023) (in Thai)

[3/] Further reading: How is Thailand's financial cycle is linked to the business cycle (PIER's aBRIDGEd article, 25 June 2018) (in Thai)

The BOT acknowledges the importance of sustainably addressing Thailand's household debt problems and recognizes that it should be addressed by utilizing targeted measures to achieve intended results. In the recent period, the BOT has launched measures to help alleviate household debt problems for vulnerable groups facing debt repayment difficulties such as encouraging banks to offer debt restructuring solutions that are best suited for the debtor's abilities to repay debt, lowering the interest rate ceiling for some loan types, and temporarily reducing the minimum repayment rate. The aim of these measures is to reduce debt burden and help those whose debt serviceability has not fully recovered from the COVID-19 pandemic. Measures implemented during the initial phase were blanket measures rolled out in response to a severe situation, while measures implemented in the later phases were more targeted. At the same time, government agencies also implemented various measures to assist retail borrowers such as the Bank for Agriculture and Agricultural Cooperatives (BAAC)'s debt moratorium for retail borrowers and increased loans used for occupational purposes, and the Government Savings Bank's debt moratorium on principal payments and offered interest repayment options to better align with the debtor's current situation.

Box 4: Thailand's household debt situation and financial vulnerabilities

After the Thai economy recovered from the COVID-19 pandemic, the BOT announced a series of measures to systematically address household debt and resolve structural problems pertaining to household debt in a sustainable manner[4/]. The initial implementation would involve upgrading bank lending standards by (1) apply responsible lending measures throughout a borrower's debt journey: from applying for a loan/whilst signing a loan contract, to being a debtor, having debt repayment problems, and to being filed a lawsuit or having their debts sold off. Moreover, the debtors would be provided relevant information in order to nudge their behaviors; and (2) assist the persistent debtors (starting with the revolving personal loans group) to repay their debts whilst having enough left for disposable income. The BOT is also considering additional measures namely risk-based pricing (RBP) and debt service ratio (DSR) limits. Beside aforementioned measures, effectively and sustainably addressing household debt problems will require cooperation from all relevant stakeholders including government agencies, financial institutions, and most importantly the households themselves. There are 3 key priorities: (1) promote more cautious debt formation; (2) support initiatives to address problematic debt; and (3) foster good financial discipline, all of which would help households maintain sustainable balance sheets and promote sound economic growth.

[4/] Further reading: BOT announces new measures to sustainably address household debt problems (BOT Press Release No. 31/2023, 21 July 2023)

Percent	2021	2022	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3
GDP growth	1.5	2.6	-2.5	7.7	-0.2	1.9	2.2	2.5	4.6	1.4	2.6	1.8	1.5
Production													
Agriculture	2.3	2.5	-0.6	3.1	5.2	2.1	3.4	4.0	-2.2	3.4	6.2	1.2	0.9
Non-agriculture	1.5	2.6	-2.5	8.2	-0.5	1.9	2.0	2.3	5.1	1.2	2.2	1.8	1.5
Manufacturing	4.9	0.4	1.7	17.0	-0.9	3.5	2.0	-0.8	6.0	-5.0	-3.0	-3.2	-4.0
Construction	2.2	-2.7	12.7	2.3	-4.5	-0.6	-5.1	-4.4	-2.6	2.6	3.9	0.4	0.6
Wholesales and retail trade	1.6	3.1	-1.9	4.1	2.1	3.1	2.7	3.2	3.5	3.1	3.3	3.4	3.3
Transport and storage	-2.7	7.1	-18.0	10.8	-1.3	4.8	3.5	5.0	10.1	9.8	12.1	7.4	6.8
Accommodation and Food Service	-14.2	39.3	-37.4	17.8	-18.8	-4.7	32.2	44.7	53.2	30.6	34.3	15.1	14.9
Information and Communication	6.1	5.1	5.2	6.2	7.4	5.8	5.7	6.3	4.7	3.9	3.4	3.5	3.1
Financial intermediation	5.5	0.9	6.5	6.3	6.1	3.1	1.0	1.4	1.0	0.5	1.2	2.8	4.7
Real estate and renting	1.7	2.1	2.1	2.5	0.6	1.5	1.3	2.4	3.1	1.9	1.9	2.5	1.9

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

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Percent	2021	2022	2021				2022				2023		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
GDP growth	1.5	2.6	-2.5	7.7	-0.2	1.9	2.2	2.5	4.6	1.4	2.6	1.8	1.5
Expenditure													
Domestic demand	1.8	4.1	1.9	4.8	-1.5	2.2	3.6	4.3	6.0	2.6	2.9	3.9	4.0
Private consumption	0.6	6.3	-0.1	5.3	-3.2	0.6	3.5	7.1	9.1	5.6	5.8	7.8	8.1
Private investment	3.0	5.1	2.9	8.8	2.3	-1.1	2.9	2.3	11.2	4.5	2.6	1.0	3.1
Government consumption	3.7	0.2	1.0	0.7	2.5	10.4	8.2	2.7	-1.5	-7.1	-6.3	-4.3	-4.9
Public investment	3.4	-4.9	18.8	3.1	-6.7	1.8	-3.8	-8.8	-6.8	1.5	4.7	-1.1	-2.6
Imports of goods and services	17.8	4.1	2.1	29.9	27.4	15.6	4.4	7.3	9.5	-4.8	-0.9	-2.3	-10.2
imports of goods	18.2	5.4	5.0	29.9	26.5	14.5	6.6	9.9	11.2	-5.9	-3.3	-4.3	-11.8
imports of services	16.0	-0.6	-9.4	30.3	32.6	21.0	-3.3	-1.9	3.7	-0.9	9.2	6.5	-3.5
Exports of goods and services	11.1	6.8	-9.8	28.8	13.0	18.7	11.9	7.8	8.7	-0.7	2.1	0.6	0.2
exports of goods	15.3	1.3	3.0	30.9	12.4	17.5	9.7	4.3	2.3	-10.5	-6.4	-5.7	-3.1
exports of services	-19.9	65.8	-61.0	9.0	19.4	31.2	35.5	47.7	79.2	94.9	78.2	53.4	23.1
Trade balance (billion, U.S. dollars)*	32.4	13.5	7.4	9.3	7.5	8.1	7.6	2.7	-0.9	4.2	2.9	2.2	5.4
Current account (billion, U.S. dollars)*	-10.3	-15.7	-1.7	-2.6	-4.4	-1.6	-2.1	-7.1	-7.3	0.7	2.0	-2.5	3.3
Financial account (billion, U.S. dollars)*	-5.0	6.6	-6.7	-2.5	2.7	1.5	4.6	-1.4	-1.9	5.3	-0.7	-2.5	n.a.
International reserves (billion, U.S. dollars)	246.0	216.6	245.5	246.5	244.7	246.0	242.4	222.3	199.4	216.6	224.5	218.2	211.8
Unemployment rate (%)	2.0	1.3	2.0	1.9	2.3	1.7	1.5	1.4	1.2	1.2	1.0	1.1	1.0
Unemployment rate, seasonally-adjusted (%)	n.a.	n.a.	2.0	1.9	2.2	1.7	1.5	1.4	1.2	1.2	1.0	1.1	1.0

Note: *Data may be subject to change in line with periodic revisions or changes to data collection methodologies

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

Financial Stability Dashboard

Indicators	2021	2022	2021				2022				2023		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
1. Financial market sector													
Bond market													
Bond spread (10 years - 2 years)	1.2	1.0	1.5	1.3	1.3	1.2	1.4	1.2	1.3	1.0	0.6	0.4	0.6
Equity market													
SET index (end of period)	1,657.6	1668.7	1,587.2	1,587.8	1,605.7	1,657.6	1,695.2	1,568.3	1,589.5	1668.7	1609.2	1503.1	1,471.4
Actual volatility of SET index[1/]	12.0	11.0	13.6	12.4	11.8	10.4	12.0	12.6	9.9	9.4	12.0	11.6	10.2
Price to Earnings ratio (P/E ratio) (times)	20.8	18.2	41.4	30.2	20.5	20.8	19.6	18.5	17.5	18.2	19.3	18.0	20.3
Exchange rate market													
Actual volatility of Thai baht (%annualized)[2/]	5.4	8.6	4.3	4.4	5.5	7.3	6.6	6.9	9.1	11.9	10.9	8.0	8.0
Nominal Effective Exchange Rate (NEER)	117.8	115.5	122.7	119.3	114.8	114.6	116.8	116.0	113.6	115.9	120.3	119.8	119.8
Real Effective Exchange Rate (REER)	104.7	103.3	109.0	106.0	101.7	102.2	104.4	104.1	101.8	103.2	106.1	104.5	104.1
2. Financial institution sector[3/]													
Minimum Lending Rate (MLR)[4/]	5.49	6.00	5.36	5.36	5.49	5.49	5.49	5.49	5.55	6.00	6.56	7.00	7.04
12-month fixed deposit rate[4/]	0.45	0.98	0.44	0.42	0.45	0.45	0.45	0.45	0.50	0.98	1.15	1.40	1.49
Capital adequacy													
Capital funds / Risk-weighted asset (%)	19.9	19.4	20.0	20.0	19.9	19.9	19.8	19.6	19.2	19.4	19.4	19.5	19.9
Earning and profitability													
Net profit (billion, Thai baht)	181.1	236.0	44.2	60.4	38.5	37.9	49.0	65.0	60.0	62.0	60.0	74.0	65.0
Return on assets (ROA) (times)	0.8	1.0	0.8	1.1	0.7	0.8	0.9	1.1	1.0	1.1	1.0	1.3	1.1
Liquidity													
Loan to Deposit and B/E (%)	94.2	92.0	92.2	92.8	93.8	94.2	92.8	93.8	94.5	92.0	90.6	92.0	92.4

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 6 largest Thai commercial banks (since July 2021)

Indicators	2021	2022	2021				2022				2023		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
3. Household sector													
Household debt to GDP (%)	94.7	91.4	95.5	94.2	94.2	94.7	93.8	92.8	91.5	91.4	90.7	90.7	n.a.
Financial assets to debt (times)	2.8	2.8	2.6	2.7	2.7	2.8	2.9	2.9	2.9	2.8	2.8	2.8	n.a.
Non-Performing Loans (NPLs) of commercial banks (%)													
Consumer loans	2.7	2.6	2.9	2.9	2.9	2.7	2.8	2.7	2.6	2.6	2.7	2.7	2.8
Housing loans	3.5	3.0	3.7	3.7	3.6	3.5	3.5	3.4	3.3	3.0	3.2	3.2	3.2
Auto leasing	1.5	1.9	1.6	1.6	1.7	1.5	1.5	1.5	1.7	1.9	1.9	2.0	2.1
Credit cards	2.3	3.1	3.0	3.5	3.0	2.3	2.8	2.7	2.5	3.1	3.1	3.0	3.3
Other personal loans	2.3	2.4	2.5	2.5	2.4	2.3	2.5	2.4	2.2	2.4	2.3	2.3	2.4
4. Non-financial corporate sector[5/]													
Operating profit margin (OPM) (%)	8.4	7.4	9.2	8.2	7.9	8.4	7.7	8.3	7.3	6.4	7.4	7.4	n.a.
Debt to Equity ratio (D/E ratio) (times)	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	n.a.
Interest coverage ratio (ICR) (times)	6.9	4.4	6.5	6.3	5.9	6.9	6.8	6.6	4.9	4.3	4.9	4.4	n.a.
Current ratio (times)	1.7	1.8	1.6	1.6	1.7	1.7	1.8	1.8	1.7	1.8	1.8	1.8	n.a.
Non-Performing Loans (NPLs) of commercial banks (%)													
Large businesses	1.5	1.3	1.5	1.6	1.6	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.2
SMEs	6.9	6.7	7.1	7.1	7.1	7.0	6.9	6.9	6.6	6.7	6.7	6.7	6.7

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

Indicators	2021	2022	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3
5. Real estate sector													
Number of approved mortgages from commercial banks (Bangkok and Vicinity) (units)													
Total	63,207	64,636	15,958	17,238	14,413	15,598	13,611	16,136	17,113	17,776	11,860	14,656	14,407
Single-detached and semi-detached houses	18,310	19,471	4,445	4,954	4,169	4,742	4,661	4,949	4,805	5,056	3,709	4,392	4,178
Townhouses and commercial buildings	21,372	19,752	5,709	6,133	4,775	4,755	4,367	4,943	5,226	5,216	3,906	4,456	4,299
Condominiums	23,525	25,413	5,804	6,151	5,469	6,101	4,583	6,244	7,082	7,504	4,245	5,808	5,930
Number of new housing units launched for sale (Bangkok and Vicinity) (units)													
Total	60,394	107,051	9,996	16,028	11,085	23,285	23,923	30,250	24,966	27,912	22,133	25,647	22,389
Single-detached and semi-detached houses	13,240	24,748	2,275	3,222	2,963	4,780	3,559	5,323	8,678	7,188	4,942	5,683	8,747
Townhouses and commercial buildings	23,709	28,525	2,765	7,492	5,597	7,855	4,655	9,015	6,957	7,898	5,284	5,137	6,484
Condominiums	23,445	53,778	4,956	5,314	2,525	10,650	15,709	15,912	9,331	12,826	11,907	14,827	7,158
Housing price index (2011 = 100)													
Single-detached houses (including land)	135.8	141.5	134.1	135.0	136.5	137.7	138.6	141.4	140.9	145.3	146.7	145.5	146.7
Townhouses (including land)	160.6	167.4	158.8	159.6	161.5	162.5	164.4	167.4	168.4	169.2	172.0	173.2	174.7
Condominiums	180.4	184.4	177.2	178.8	185.4	180.1	182.0	185.3	181.6	188.9	194.7	188.9	190.4
Land	177.7	180.2	171.0	172.2	179.2	188.4	178.8	179.6	178.0	184.3	175.0	181.6	184.8
6. Fiscal sector													
Public debt to GDP (%)	59.7	61.0	54.5	55.4	58.4	59.7	60.6	61.0	60.5	61.0	61.3	61.7	62.1
7. External sector													
Current account balance to GDP (%)	-2.0	-3.2	-1.3	-2.1	-3.7	-1.2	-1.6	-5.8	-6.1	0.6	1.6	-2.0	2.7
External debt to GDP (%)[6/]	37.9	40.0	35.5	35.7	36.4	37.9	38.4	37.8	37.0	40.0	40.3	38.1	n.a.
External debt (billion, U.S. dollars)	196.2	200.3	184.4	185.2	188.4	196.2	197.9	194.0	187.9	200.3	201.8	192.8	n.a.
Short-term (%)	38.1	40.0	39.0	38.6	38.2	38.1	38.1	39.5	40.7	40.0	39.7	40.1	n.a.
Long-term (%)	61.9	60.0	61.0	61.4	61.8	61.9	61.9	60.5	59.3	60.0	60.3	59.9	n.a.
International reserves / Short-term external debt (times)[7/]	2.7	2.3	2.8	2.9	2.8	2.7	2.7	2.4	2.2	2.3	2.3	2.4	n.a.

Note: [6/] External debt / 3-year average nominal GDP [7/] Short-term external debt used in calculation is short-term external debt less than 1 year remaining maturity

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Probability distribution of GDP growth forecast

%	2023	2024				2025			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
> 16	0	0	0	0	1	1	2	2	2
14.0-16.0	0	0	0	1	0	1	1	1	1
12.0-14.0	0	0	1	1	1	1	1	1	1
10.0-12.0	0	1	2	3	2	2	2	1	2
8.0-10.0	1	3	5	7	6	4	5	6	6
6.0-8.0	9	9	11	12	11	11	10	11	10
4.0-6.0	27	21	19	20	16	18	19	19	19
2.0-4.0	42	34	27	27	23	23	23	21	21
0.0-2.0	18	26	23	18	24	22	17	19	17
(-2.0)-0.0	3	5	8	6	9	10	12	11	11
(-4.0)-(-2.0)	1	1	2	2	3	3	5	4	6
(-6.0)-(-4.0)	0	1	1	1	1	1	2	2	2
(-8.0)-(-6.0)	0	0	1	1	1	1	1	1	1
< -8	0	0	0	1	2	2	2	2	2

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Probability distribution of headline inflation forecast

%	2023 Q4	2024 Q1	2024 Q2	2024 Q3	2024 Q4	2025 Q1	2025 Q2	2025 Q3	2025 Q4
> 10	0	0	0	0	0	0	0	0	0
9.0-10.0	0	0	0	0	0	0	0	0	0
8.0-9.0	0	0	0	0	0	0	0	0	0
7.0-8.0	0	0	0	0	0	0	0	0	0
6.0-7.0	0	0	0	0	1	0	0	0	0
5.0-6.0	0	0	0	1	6	2	1	1	1
4.0-5.0	0	0	2	6	15	8	5	5	5
3.0-4.0	0	0	13	19	26	19	13	13	14
2.0-3.0	0	2	37	33	27	27	24	23	24
1.0-2.0	0	28	35	28	17	24	27	26	26
0.0-1.0	23	57	12	12	7	13	19	19	18
(-1.0)-0.0	76	13	1	2	2	5	8	9	8
(-2.0)-(-1.0)	1	0	0	0	0	1	2	3	3
< -2	0	0	0	0	0	0	0	1	1

Probability distribution of core inflation forecast

%	2023 Q4	2024 Q1	2024 Q2	2024 Q3	2024 Q4	2025 Q1	2025 Q2	2025 Q3	2025 Q4
> 5.5	0	0	0	0	0	0	0	0	0
5.0-5.5	0	0	0	0	0	0	0	0	0
4.5-5.0	0	0	0	0	0	0	0	0	0
4.0-4.5	0	0	0	0	0	0	0	0	0
3.5-4.0	0	0	0	0	1	1	1	0	0
3.0-3.5	0	0	0	1	3	2	2	2	2
2.5-3.0	0	0	0	4	7	7	6	6	5
2.0-2.5	0	0	3	13	15	14	13	12	12
1.5-2.0	0	1	17	25	22	21	20	19	19
1.0-1.5	5	22	36	28	23	23	23	22	22
0.5-1.0	71	54	31	20	17	17	18	19	19
0.0-0.5	24	21	11	8	9	9	10	11	12
(-0.5)-0.0	0	1	2	2	3	4	4	5	6
< -0.5	0	0	0	0	1	1	2	2	3

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