(1942–2017)

BANK OF THAILAND

MONETARY POLICY REPORT

June 2018

Monetary Policy Report

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

The Monetary Policy Committee
June 2018

Mr. Veerathai Santiprabhob	Chairman
Mr. Mathee Supapongse	Vice Chairman
Mr. Paiboon Kittisrikangwan	Member
Mr. Porametee Vimolsiri	Member
Mr. Sethaput Suthiwart-Narueput	Member
Mr. Kanit Sangsubhan	Member
Mr. Subhak Siwaraksa	Member

Monetary Policy in Thailand

Monetary Policy Committee

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

Monetary Policy Objective

The MPC sets monetary policy to promote the objective of supporting sustainable and full potential economic growth, without causing inflationary problems or economic and financial imbalances or bubbles.

Monetary Policy Target

The Cabinet approved the annual average headline inflation target of 2.5 $\pm$ 1.5 percent as the target for the medium term and for 2018. The inflation target is to assure the general public that the MPC will take necessary policy actions to return headline inflation to the target within an appropriate time horizon without jeopardizing growth and macro-financial stability. In the event that headline inflation deviates from the target, the MPC shall explain the reasons behind the target breach to the Minister of Finance and the public, together with measures taken and estimated time to bring inflation back to the target.

Monetary Policy Instrument

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

Evaluation of Economic Conditions and Forecasts

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

Monetary Policy Communication

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

Content

Executive Summary

Monetary Policy Conduct in the Second Quarter of 2018

The Committee assessed that the Thai economy continued to gain further traction and would achieve higher growth than previously assessed, driven by both domestic and external demand. Headline inflation was projected to increase toward target slightly faster than the previous assessment on the back of rising global oil prices. Demand-pull inflationary pressures edged up somewhat but remained at a low level. Financial stability remained sound but there remained a need to monitor pockets of risks that might pose vulnerabilities to financial stability in the future. **The Committee weighed various factors in determining the most appropriate course of monetary policy and voted unanimously (6 to 0) and later 5 to 1 to maintain the policy rate at 1.50 percent at the meetings on May 16 and June 20, 2018, respectively.** In deliberating their decision, the Committee judged that accommodative monetary policy stance would remained a key supporting factor to help sustain domestic demand growth, which would in turn foster headline inflation to gradually rise and move within the target in a sustainable manner. Under the Committee's assessment, the policy rate at 1.50 percent would be sufficiently accommodative. The new loan rates (NLR) continued to stay at low levels and recent rising government bond yields had a limited impact on financing costs of the private sector. Meanwhile, one Committee member voted to raise the policy rate by 0.25 percentage point to 1.75 percent at the June meeting, with the view that the economic recovery was sufficiently robust and inflation was expected to remain within target throughout the projection period, and that the prolonged monetary accommodation might induce households and businesses to underestimate risks to potential changes in financial conditions. Thus, it would be appropriate to increase the policy rate at this time in order to start building policy space for potential use in the future.

Looking ahead, the Committee viewed that, should economic expansion continue and inflation move more firmly within target, the need for currently extra accommodative monetary policy would start to be reduced, and that the need for a policy rate increase in order to build policy space in the future would be increasing.

Assessments of the Economic and Inflation Outlooks as the Basis for Policy Formulation

1. Global Economy

The global economy was projected to continue expanding amid tightening financial conditions and rising oil prices. Advanced economies would expand on the back of domestic demand. The U.S. economy would be supported by strong economic fundamentals including strong labor market, robust consumer confidence, and fiscal stimulus, despite some impacts from China's trade retaliatory measures. The euro area and Japanese economies would be supported by continued accommodative monetary policy, although the first quarter saw some slowdown in consumption due to unusually cold weather. China continued expanding but growth would slightly slow down due to economic reforms. According to preliminary assessments, the U.S. trade protectionism measures were expected to have some effects on Chinese exports and the overall economy to some extent. Meanwhile, other Asian economies were projected to grow faster than previously estimated owing to robust domestic demand and export growth, which were in line with global demand and international trade. **The Committee, therefore, revised up the growth forecast for Thailand's trading partners from 3.7 percent to 3.8 percent in 2018.** Yet, there remained risks to be monitored, including (1) intensifying trade retaliations between the U.S. and major economies that could undermine trade volume, investment climate, and spur financial market volatility and (2) geopolitical risks which continued to create uncertainty that might affect the global economy and financial markets.

While most central banks maintained accommodative monetary policy stance, the U.S. Federal Reserve (Fed) and some central banks in the region increased their policy rates. For instance, central banks of the Philippines and Indonesia raised interest rates to curb inflation and volatility in the financial markets. In addition, other central banks in the region started to signal changes in monetary policy stance given improved economic growth and rising inflation toward target. Such conditions would facilitate monetary policy normalization in the period ahead.

Global financial markets remained volatile. Emerging markets experienced capital outflows as foreign investors reduced their investments in risky assets. The 10-year U.S. treasury yields reached the highest point in the past four years. The number of Fed's rate hikes this year was expected to increase to four instead of three. In addition, trade retaliatory measures between the U.S. and major economies were intensified. These events increased risks to emerging markets, especially those with weaker economic fundamentals such as Argentina and Turkey.

2. Financial Conditions and Financial Stability

Thailand's financial conditions remained accommodative. Short-term Thai government bond yields rose toward the policy rate due to a greater supply of bonds and lower demand from foreign investors. Meanwhile, medium- and long-term bond yields increased mainly due to external factors as well as Thai economic and inflation outturns which were better than market expectations. Interest rates on new loans remained at a low level, while private credit expanded as seen in both corporate and households sectors. Businesses continued to seek funding through both debt and equity instruments. The Thai baht depreciated from the previous quarter, in line with regional currencies, as the U.S. dollar strengthened. In addition, the depreciation was due to a seasonal factor in the second quarter during which foreign corporates and investors in Thailand repatriated their dividends back to their home countries. The real effective exchange rate (REER) strengthened because Thailand's inflation increased faster than that of trading partner economies.

Financial stability remained sound but there existed pockets of risks that warranted monitoring. These included, first, the search for yield behavior which persisted in the prolonged low interest rate environment that could lead to increased underpricing of risks. For example, concentration of investment by foreign investment funds in certain countries and large expansions of assets and deposits of saving cooperatives despite some slowdown after the revision of regulations to upgrade supervision practices. Second, volatility of international capital flows and the global financial markets could trigger yield snapbacks and affect roll-overs of short-term corporate bonds. Third, overall credit quality remained unchanged but deteriorated among some households and businesses, especially households with large debt burden and smaller SMEs with weak financial positions. Fourth, there continued to be an excess supply of properties of certain price ranges and in some areas. This was particularly the case for condominiums with prices below three million baht whose supply remained high and would take some time to sell.

3. Economic and Inflation Outlook

The Thai economy was projected to continue expanding at 4.4 and 4.2 percent in 2018 and 2019, respectively, higher than assessed at 4.1 percent for both years in the previous *Monetary Policy Report*. The upward revision was on the back of a continued improvement in merchandise exports and tourism, in tandem with global trade volume and trading partners' economies, as well as higher-than-expected private consumption and private investment growth.

Merchandise exports continued to expand across various product categories and almost all export destinations. The value of merchandise exports in 2018 was revised to grow 9.0 percent, up from 7.0 percent assessed in the previous quarter, with expected growth in both price and quantity terms. Export prices was projected to trend up in line with crude oil prices, especially for commodities and oil-related products. Export volume would continue to expand across various product categories, particularly electronics, auto parts, and processed agricultural products, in tandem with expansion in global trade volume and trading partner economies. Moreover, import value would continue to rise in line with (1) increased demand for raw materials and intermediate goods, capital goods, and machinery as private investment improved and (2) higher oil prices. Nevertheless, the Committee assessed that intensifying trade retaliation between the U.S. and major economies, which could put pressures on investment and international trade, would directly and indirectly affect Thai exports. Thus, the Committee would closely monitor and assess potential impacts going forward.

Exports of services in 2018 were expected to be slightly higher than the previous assessment due mainly to a higher number of foreign tourists. The projection of the number of foreign tourists was revised up to 38.3 million in 2018, up from the previous forecast of 37.6 million. The upward revision was due to continued growth of Chinese tourists for both tour groups and free and independent travelers (FIT), who had high purchasing power, and newly opened direct flights from second-tier Chinese cities to Thailand. In addition, recent management by airlines and airports also helped alleviate airport capacity constraints in accommodating the rising number of tourists. For instance, there were additional flights during off-peak times and higher utilization of regional airports.

Private consumption was projected to gain traction from the previous period, supported mainly by non-farm households, especially middle- and high-income households whose earnings continued to rise. Meanwhile, earnings of low-income households started to improve following stronger employment particularly in construction and services sectors. Farm income expanded on the back of higher production, while agricultural prices of certain crops that lingered at low levels would remain a major drag on farm income. Moreover, government measures—such as the social welfare card project (second phase), the community enterprise development project, and agricultural reform project—would support purchasing power going forward. However, elevated household debt would cause households to allocate part of their income for debt repayment. In addition, ongoing structural changes in the labor market would continue to weigh on private consumption growth.

Public spending remained a driver of economic growth, with some investment projects postponed to 2019. Public consumption would continue expanding despite smaller projected outlays due to the change in the government budget structure for fiscal year 2019, with a larger share of capital spending compared with the previous announcement. Although there was additional fiscal budget in 2018, this would not compensate for the moderation in public consumption due to the change in the 2019 budget structure. Public investment in 2018 was revised downward due to delayed investment by some state-owned enterprises following difficulties in accessing construction sites and some construction problems. In any case, public investment in 2019 was revised up due to the following reasons. First, a larger share of the government budget for fiscal year 2019 was allocated to capital spending compared with the previous announcement. Second, some investment spending would be carried over from 2018. Third, disbursement plans for the dual-track railway project became more certain.

Private investment was projected to achieve higher growth than previously assessed, in line with growth of merchandise exports and private consumption, due to following factors. First, capacity utilization rose across various industries, such as automobiles and food and beverages. Second, import volume of capital goods and machinery increased. Third, demand for private credits extended to businesses increased. Forth, investment plans of large corporates became more certain. Fifth, government measures such as the community enterprise development and agricultural reform projects would support low-income households. Sixth, the value of investment application submitted to the Board of Investment continued to trend up. Moreover, government infrastructure investment projects, the Eastern Economic Corridor (EEC), and public-private partnership projects (PPP) that were increasingly taking shape would shore up business confidence, foster investment climate, and attract greater foreign investment. However, developments of such investment projects would warrant monitoring going forward.

Headline inflation was projected to rise at a faster pace than the previous assessment on the back of acceleration in prices of energy-related products in tandem with global crude oil prices. However, government regulations on energy-related prices partly curbed the increase in costs of transportation and prepared food. Fresh food prices were projected to grow at lower rates following a larger-than-expected supply of meat, fruits, and vegetables. Moreover, demand-pull pressures rose only slightly due to the fact that benefits from economic growth was not yet sufficiently broad-based and that there continued to be sales promotion offered by businesses. In addition, structural changes—such as developments of production technology and higher business competition—still put downward pressures on inflation. Thus, the Committee saw the need to study the impact of such factors on inflation dynamics in further details as this could have significant implications on determining the inflation target in the future. **The Committee therefore projected headline inflation to average 1.1 and 1.2 percent in 2018 and 2019, respectively, while core inflation was projected to average 0.7 and 0.9 percent in 2018 and 2019, respectively.**

Risks to the growth projection were expected to tilt more downward than previously assessed. The increased downside risks were mainly due to external factors. First, U.S. trade protectionism measures, retaliation by major economies, and intensifying competition resulted from trade diversion could have greater-than-expected impacts on Thai exports and private investment. Second, growth of Thailand's trading partner economies might be lower than expected in case of intensifying global geopolitical tensions. Moreover, certain domestic factors also posed downside risks to the baseline projection. First, private consumption growth might be lower-than-expected as domestic purchasing power had yet to recover in a broad-based manner. Second, the enforcement of the Public Procurement and Supplies Management Act, B.E. 2560 could lead to longer-than-expected delay in budget disbursement of some government agencies. Nonetheless, on the upside, there were possibilities that the growth outturn might be higher than the baseline projection. First, growth of trading partner economies might be higher than expected given the U.S. economy continued to improve and the Chinese growth that could slow down at a slower pace than expected should the Chinese government implement additional economic stimulus measures. Second, domestic spending could be higher than the baseline assessment due to government infrastructure investment projects, public-private partnership (PPP), as well as government measures aimed at stimulating private spending. **Risks to the headline and core inflation projections were expected to tilt more downward than the previous assessment** consistent with the risks to the growth forecast.

1. Global Economy

Major advanced economies were projected to continue expanding. Despite a temporary slowdown during the first quarter of 2018, consumption would likely regain its growth momentum following domestic demand and robust economic fundamentals. However, risks increased from U.S. trade protectionism measures and intensifying retaliation from major economies, and hence warranted monitoring.

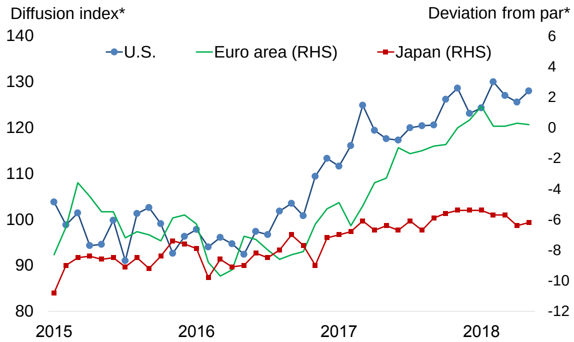
The U.S. economy would continue to record strong growth. Despite a temporary slowdown in private consumption during the first quarter due to unusually cold weather and delayed tax refunds, the overall economy continued to improve going forward. Private consumption would likely expand on the back of strong labor market, robust consumer confidence and a continued fiscal stimulus which would support economic activities amid higher long-term U.S. treasury yields and oil prices. In addition, the assessment of U.S. economic growth took into account some impact from China's trade retaliatory measures. **Euro area economies were projected to exhibit a slightly slower growth than the previous assessment.** This was due to declined consumption in the first quarter of 2018 after accelerating in earlier periods and sentiment which was hampered by uncertainties surrounding U.S. trade measures and politics in the euro area. Nevertheless, a number of factors would support the continuation of economic growth going forward: continued accommodative monetary policy, steady expansion of global trade, recovering labor markets, as well as robust consumer confidence despite being partially affected by political uncertainties. Meanwhile, **Japan's economic growth was expected to be lower than the previous estimate.** This was attributed to low private consumption and production during the first quarter as a result of unusually cold weather, rising vegetable prices, and decelerating exports. However, robust consumer confidence and strong labor market would help drive economic growth in the period ahead, while exports were expected to expand in tandem with continued improvements in global trade (Chart 1.1).

The Chinese economy would continue to expand, while other Asian economies were projected to grow faster than previously estimated on the back of domestic demand. Meanwhile, exports continued to record strong growth in line with global demand and global trade.

The Chinese economy was expected to gain further traction despite some slowdown following the government's economic reforms. Over the recent periods, Chinese authorities tightened financial regulations, including measures to curb speculation in the real estate sector, to manage risks arising from shadow banking, as well as to tighten credit standards on credits to local government. Such measures led to tighten liquidity conditions and started to weigh on economic activities. The government then shifted its focus towards the continuation of economic growth and liquidity by cutting the reserve requirement ratio (RRR), value-added taxes, and automobile import tariffs in order to stimulate private spending. Meanwhile, according to the preliminary assessments, U.S. trade protectionism measures were expected to have an impact on Chinese exports and the overall economy to some extent. Such impact would be closely monitored and assessed as there were considerable uncertainties.

Asian economies (excluding Japan and China) would exhibit a higher growth than the previous assessment, owing to better-than-expected growth outturns in the first quarter of 2018. In particular, private consumption accelerated in several economies such as Hong Kong, Malaysia, and Singapore, and exports continued to grow across various product categories. In the period ahead, private consumption would still be supported by steady improvements in consumer confidence, strengthening labor markets in several countries, and government policies such as the abolishment of goods and services taxes (GST) in Malaysia. Meanwhile, the impact of rising oil prices on the economy would be limited as some countries imposed energy-price subsidies. Nevertheless, despite being on the rising trend (Chart 1.2), exports might slow down somewhat in the period ahead after accelerating in earlier periods, particularly for smartphone-related electronic products. In the financial market, rising U.S. long-term bond yields over the recent periods had an impact on some Asian financial markets. However, most countries still had sound external stability and could cushion against short-term volatilities.

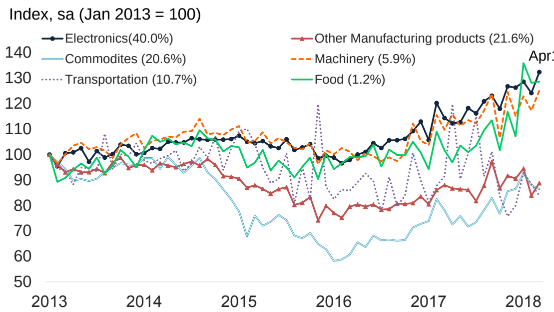
Chart 1.1 Consumer confidence in advanced economies continued to improve



Note:*Euro area's par = 0 and Japan's par = 50
Source: Bloomberg

Chart 1.2 Asian exports continued to improve and expand across various product categories

Asian exports value* classified by product categories



Note: *Asian exports include Hong Kong, Taiwan, Korea, Malaysia and Singapore.
( ) share of total exports in 2017
Commodity-related products include crude oil, metals, chemicals, rubber, and vegetable oil.
Other manufacturing products include textile, papers, furniture, footwear and miscellaneous
Source: CEIC

The growth outlook for Thailand's trading partners was revised up, but risks to the growth projection were expected to tilt downward.

Trading partners' economies would likely be stronger than the assessment in the previous *Monetary Policy Report*. This was due to better-than-expected economic outturns of several countries in the first quarter of 2018, coupled with growth momentum in the period ahead driven by consumption and investment that would benefit from fiscal policies. The Committee, therefore, revised up the growth forecast for Thailand's trading partners to 3.8 percent in 2018 on the back of robust economic fundamentals of advanced economies and accelerating growth in Asia. Meanwhile, the growth forecast for 2019 was expected to remain close to the previous estimate at 3.6 percent (Table 1.1).

The Committee assessed that risks to growth of Thailand's trading partners would tilt to the downside based on the following factors. First, U.S. trade protectionism measures could lead to intense retaliatory actions by major economies such as China, Canada, Mexico and the euro area, which could cause a direct impact on global and Thai trade volume through supply chain linkages and an indirect impact such as decelerating business investment due to heightened uncertainties. Second, geopolitical risks remained despite easing tensions in the Korean Peninsula. This was due to concerns over the situation in Iran which warranted close monitoring as this could heighten volatility in the financial and commodity markets, as well as the real economic sector. Third, China's economic and financial stability problems continued to be monitored in the face of some progress given improved supervision of the Chinese government.

Table 1.1 Assumption on trading partner growth

Annual change (%YoY)	Weight (%)	2017*	2018	2019
United States	14.9	2.3	2.7 (2.7)	2.4 (2.4)
Euro area	10.0	2.6	2.2 (2.3)	2.0 (2.0)
Japan	13.6	1.7	1.2 (1.5)	1.0 (1.0)
China	15.7	6.9	6.6 (6.6)	6.4 (6.4)
Asia (excluding Japan and China)**	37.4	4.6	4.4 (4.2)	4.3 (4.3)
Total***	100	3.9	3.8 (3.7)	3.6 (3.6)

Note: *Outturn

**Weighted by a share of Thailand's total exports to 7 trading partners in 2014, namely Singapore (6.5%), Hong Kong (7.9%), Malaysia (8.0%), Taiwan (2.5%), Indonesia (5.9%), South Korea (2.8%), and the Philippines (3.7%)

***Weighted by a share of exports from Thailand to 13 trading partners in 2014 (including the United Kingdom and Australia)

( ) as reported in Monetary Policy Report, March 2018

Central banks maintained an accommodative monetary policy stance. However, the U.S. and some Asian central banks hiked their policy interest rates.

Most central banks maintained an accommodative monetary policy stance. The European Central Bank (ECB) announced to extend its net asset purchases until the end of December 2018 and that purchases would then end, and expect to maintain its policy interest rate at least through the summer of 2019. Meanwhile, the Federal Reserve (Fed) continued to normalize monetary policy by raising the federal funds rate at the meeting in June 2018 in line with market expectations. Nevertheless, the U.S. economic expansion and tightening labor market would support upward pressures on inflation going forward. Therefore, the number of Fed's rate hikes was expected to increase to four instead of three in 2018. Some central banks in Asia also raised their policy rates. In May 2018, the central bank of the Philippines (BSP) increased its policy interest rate to curb inflation, while Bank of Indonesia (BI) hiked the rate twice to manage volatility in the financial market. In addition, other central banks in the region started to signal changes in monetary policy stance given the continuation of economic growth and rising inflation toward target, which would facilitate monetary policy normalization in the period ahead.

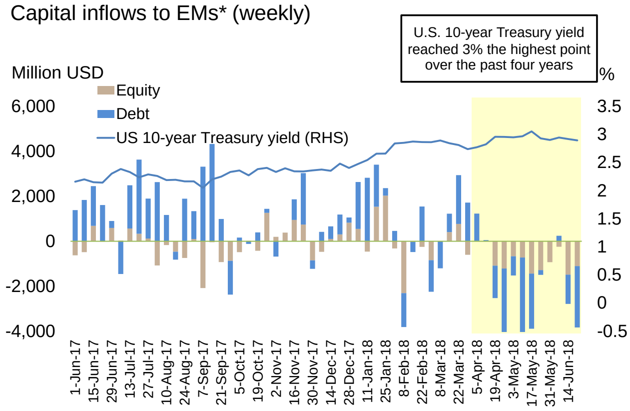
Global financial markets were volatile. During the second quarter of 2018, emerging markets experienced capital outflows as foreign investors reduced their investments in risky assets. This was attributable to a surge in 10-year U.S. treasury yields which reached the highest point in the past four years, expectations of Fed's policy rate hikes, and intensified trade retaliation between the U.S. and major economies. Therefore, risks in emerging markets increased, especially those with weak economic fundamentals such as Argentina and Turkey.

Since late April 2018, emerging markets (EMs) started to experience capital outflows mainly in debt markets, the extent of which depended on each country's economic fundamental. Foreign investors reduced their investments in risky assets as 10-year U.S. treasury yields rose to more than 3 percent in some periods and reached the highest point in the past four years following rising U.S. inflation expectations and oil prices, as well as the improved U.S. economic outlook. The investors, therefore, gained more confidence on the U.S. economy and over Fed's policy rate hikes. However, capital outflows from EM Asia decelerated during late May after investor sentiment toward EM Asia improved and some central banks in the region raised their policy rates. With regard to equity markets, investors reduced their investment in EMs, partly as fundamentals of equity markets in advanced economies were stronger and had better outlooks than those in Asia.

In June, capital outflows from EMs accelerated in both debt and equity markets, due to the possibility that the Fed would hike federal funds rates sooner than market expected and risks from intensified trade retaliation between the U.S. and major economies. However, countries with weaker economic fundamentals faced a greater impact of capital outflows such as Argentina and Turkey. In particular, EMs in Latin-America were more affected than those in Asia.

Chart 1.3 Emerging markets experienced capital outflows owing to U.S. 10-year Treasury yield that reached the highest point over the past four years, investors' expectation on Fed's policy rate, and intensifying trade retialations between U.S. and major economies

Capital inflows to EMs* (weekly)



Note: *EMs includes Thailand, Indonesia, India, South Africa, and Turkey
Sources: Bloomberg and Institute of International Finance

Looking ahead, global financial markets would likely remain volatile. International capital flows could move both into and out of Thailand given uncertainties on the external front regarding monetary, fiscal and trade policies of major advanced economies, geopolitical risks, risks in EMs perceived by investors, as well as oil price movements. These factors could affect economic conditions of each country and directions of capital flows going forward.

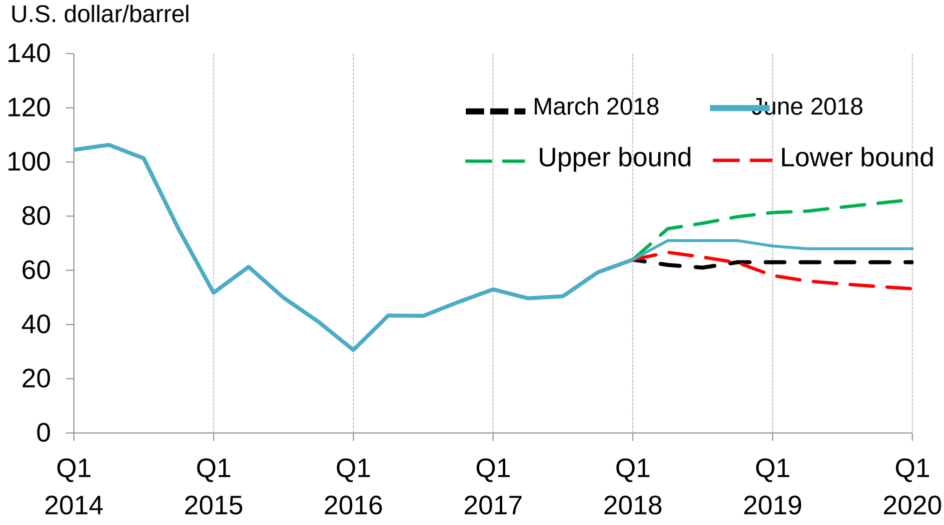
Crude oil prices continued to rise in the second quarter of 2018 owing to a higher-than-expected decline in oil supply and investors' concern over the supply adequacy. However, going forward, crude oil prices were projected to decline somewhat thanks to a gradual increase in crude oil supply from both OPEC and non-OPEC producers, especially after the termination of production cut agreement by the end of this year.

In the second quarter of 2018, the Dubai crude oil prices steadily increased from the previous quarter, as crude oil stock ran down significantly, prompting global demand and supply to reach the equilibrium level faster than expected. In addition, investors were concerned about the adequacy of oil supply in the short run. The decline in oil stock was mainly attributed to the compliance with the production cut agreement among OPEC and non-

OPEC producers and a significant reduction in Venezuela's oil production due to economic crisis. Meanwhile, demand for crude oil continued to rise consistent with global economic expansion. **Nevertheless, going forward, crude oil prices were expected to decline somewhat** owing to rising crude oil supply by U.S. shale oil producers as well as possibly greater oil production in order to prevent a price surge in the global market. However, oil prices would not fall by a large extent as they would still be shored up by steadily growing demand following expanded global economy.

As declining oil stock led global demand and supply to reach the equilibrium level sooner than expected, the Committee therefore revised up the projection for Dubai crude oil prices throughout the forecast horizon. Oil prices were revised up from 62.4 to 69.2 U.S. dollars per barrel in 2018, and from 63.0 to 68.3 percent U.S. dollars per barrel in 2019. Risks to the projection were adjusted to be balanced instead of tilting upward in the previous projection. Geopolitical risks in the Middle East and the Korean Peninsula might result in higher-than-expected oil prices in some periods. Meanwhile, crude oil prices might be lower than the forecast should production increased more than anticipated, either from countries participating in the oil production cut agreement or U.S. shale oil producers.

Chart 1.4 Dubai crude oil price in 2018Q2 continued to increase from the previous quarter, as the oil stock decreased toward equilibrium level and investors were concerned about the adequacy of oil supply in the short run



2. The Thai Economy

2.1 Recent Developments

The Thai economy continued to gain further traction driven by the external sector and gradual improvements in domestic demand.

The Thai economy expanded 4.8 percent in the **first quarter of 2018**, driven mainly by a robust expansion of merchandise exports across all major export destinations and almost all product categories in tandem with continued improvements in trading partner economies. Exports of services also recorded robust growth on the back of increased foreign tourists in almost all groups, particularly Chinese tourists which expanded owing to increasing number of flights from secondary cities in February. The number of Russian and Indian tourists also increased. Private consumption continued expanding, especially spending on services and durable goods, in line with improved consumer confidence and expansion in consumer loans. The main supporting factor was strong purchasing power of medium-to-high income households. In addition, inflation and the policy rate remained low. Meanwhile, government's social welfare card scheme helped reduce households' burden on spending to some extent. Private investment improved both from investment in machinery and equipment which continued to expand, and investment in the construction sector that started to improve. Public expenditure accelerated from spending on consumption, and investment which resumed growth mainly on account of investment of state-owned enterprises (SOEs). Overall, the Thai economy in the first quarter of 2018 recorded a 2.0 percent growth from the previous quarter, after seasonal adjustment, accelerated from 0.5 percent in the previous quarter.

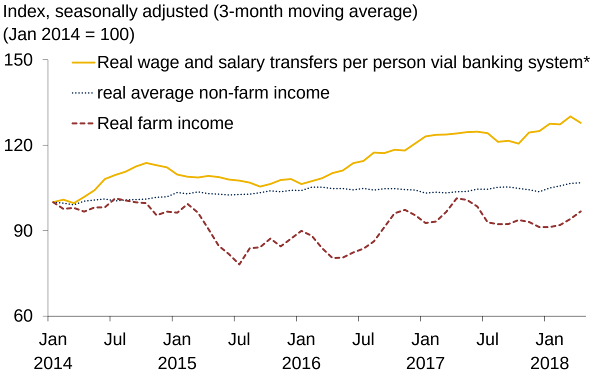
The Thai economy continued to gain further traction in **the second quarter of 2018**, as reflected by recent economic indicators. In particular, growth of merchandise exports was robust and broad-based across all major export destinations. Exports of services also continued to expand on the back of increased number of Chinese and Russian tourists, despite some decline in the number of European tourists due to early arrival of Easter. Domestic demand continued to drive a stronger economic growth with improved private consumption indicators across almost all categories, except spending on non-durable goods which was largely unchanged. With regard to purchasing power, income of non-agricultural households gradually improved. At the same time, income of agricultural households also gradually rose, due to an expansion in agricultural output and a rise in some agricultural prices. However, prices of several agricultural products remained low. Nevertheless, continued improvements in both domestic and external demand resulted in an expansion of manufacturing production, particularly in automobiles, food and beverages, and chemical products. Private investment continued to gain momentum from certainty of investment in the Eastern Economic Corridor (ECC) and the Public-Private Partnership (PPP) projects, following the cabinet's approval on the high-speed rail project connecting three airports. This would shore up business confidence. Public expenditure continued expanding on account of current expenditure owing to an expansion in compensation of employees and investment expenditure due to airport maintenance projects as well as procurement of machinery and equipment by some authorities.

The positive spillovers from the economic expansion were gradually extended to the labor market. Income of non-agricultural households picked up but had yet to be distributed to all sectors, while income of agricultural households began to improve slightly.

The continuation of economic growth gradually benefited households' purchasing power (Chart 2.1). **Non-farm households** whose income clearly improved were among high-income households. This was observed in an indicator on average income per head transferred through financial institutions which continued to improve. Meanwhile, average income of non-agricultural households gradually picked up. In addition, signs of improvement in employment started to be observed, as there was higher employment in normal working hours reflecting stronger business confidence on economic condition, where previously only higher overtime employment was observed. In particular, such improvement was seen in export-related manufacturing industries such as food, rubber and plastic, as well as in services sector especially restaurants and hotels. Income of **farm households** gradually increased owing to an expansion in agricultural output thanks to favorable weather condition and water supply. Moreover, prices of some agricultural products rose on the back of increased global demand such as jasmine rice and cassava, while prices of white rice did not decline despite considerable output this year. However, prices of some agricultural products remained unchanged, especially rubber, palm oil, white shrimp, and some fruits such as mango. As a result, income of some agricultural households remained low.

Chart 2.1 Overall purchasing power gradually improved

Various household income indicators



Note: *wage and salary transfer transactions are calculated from 2 databases: (1) Commercial banks reporting transactions to Bank of Thailand database which covers 90% of all retail transfer transations and (2) Interbank Transaction Management and Exchange (ITMX) database which covers 10% of all retail transfer transactions.

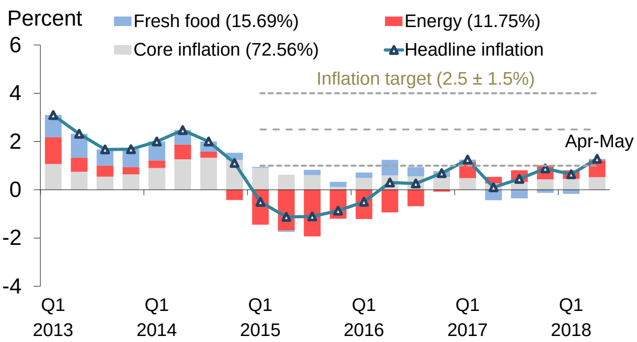
Sources: Bank of Thailand, Office of Agricultural Economics, National Statistical Office, Ministry of Commerce, calculations by Bank of Thailand

Headline inflation trended up in line with energy price, while core inflation gradually increased mainly on account of prices of processed food, housing, tobacco and alcoholic beverages with prices of other items slowly increased.

Headline inflation averaged at 1.28 percent over the first two months of the second quarter of 2018, an improvement from 0.64 percent in the previous quarter (Chart 2.2). Such improvement was mainly on account of a continued rise in energy price following higher domestic oil prices and prices of liquefied petroleum gas (LPG) in line with global oil prices. Meanwhile, fresh food prices began to increase from higher rice and vegetable prices. However, prices of livestock and fruits continued to contract given a large output in the market.

Chart 2.2 Headline inflation increased from the previous quarter due mainly to energy prices.

Headline inflation and inflation target



Note: ( ) denotes share in inflation baskets.

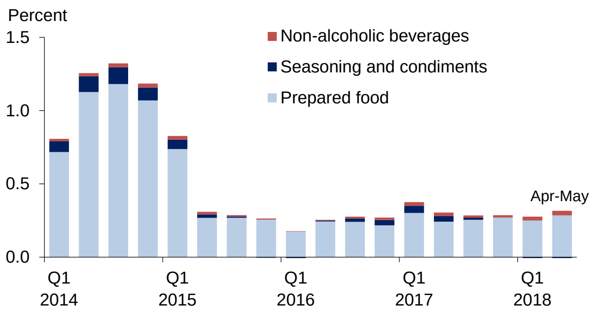
Source: Ministry of Commerce, calculations by Bank of Thailand

Core inflation averaged at 0.72 percent over the first two months of the second quarter of 2018, an increase from 0.61 percent in the previous quarter. Prices of food items in the core inflation basket picked up slightly (Chart 2.3) following a gradual rise in processed food prices in line with costs of fresh food and LPG. Meanwhile, prices of non-food components in core inflation increased (Chart 2.4) from higher housing rents and excise tax on tobacco and alcoholic beverages. Prices of other items still expanded at low levels. Nevertheless, structural factors including production technology development, rising trends of e-commerce, and globalization, led to lower of costs of production and intensified price competitions. As a consequence, these factors weighed on a sluggish increase in prices of non-food components in core inflation in recent periods.

Short-term (one-year ahead) inflation expectations according to a survey of businesses in May 2018 stood at 2.1 percent, largely unchanged from the first quarter of 2018. Meanwhile, long-term (five-year ahead) inflation expectations according to a survey of professional forecasters in April 2018 increased to 2.1 percent from 1.8 percent from the previous survey (October 2017).

Chart 2.3 Food-in-core inflation increased slightly due to a gradual rise in LPG and fresh food prices.

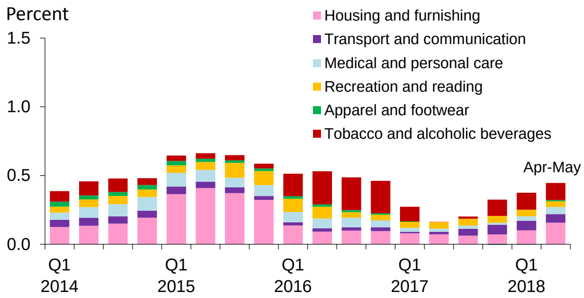
Contribution to food-in-core inflation (28.17%)



Source: Bureau of Trade and Economic Indices, Ministry of Commerce, calculations by the Bank of Thailand

Chart 2.4 Non food-in-core inflation rose on the back of an increase in housing rents and excise tax on tobacco and alcoholic beverages.

Contribution to non-food in core inflation (71.83%)



Source: Bureau of Trade and Economic Indices, Ministry of Commerce, calculations by the Bank of Thailand

Table 2.1 Inflation

Annual percentage change	2016		2017				2018	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Apr-May
Headline Consumer Price Index (Headline CPI)	0.26	0.69	1.25	0.10	0.45	0.88	0.56	1.28
Core Consumer Price Index (Core CPI)	0.76	0.73	0.66	0.47	0.49	0.61	0.61	0.72
Raw food	2.58	1.54	0.61	-2.99	-2.25	-0.80	-1.23	0.37
Energy	-7.00	-1.06	6.69	2.67	4.86	5.24	2.62	6.19

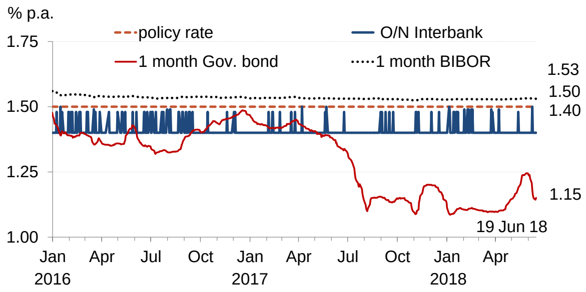
Source: Bureau of Trade and Economic Indices, Ministry of Commerce

Short-term money market rates remained low, except short-term government bond yields which increased to the level closer to the policy rate due to a higher bond supply and a lower demand from foreign investors. Meanwhile, medium- and long-term government bond yields picked up primarily on account of external factors and a better-than-expected economic and inflation outturns.

Most **short-term money market rates** remained close to the policy interest rate in the second quarter of 2018. However, **short-term government bond yields** continued to rise to the level closer to the policy rate (Chart 2.5). This was attributable to a higher supply of treasury bills in March and bonds issued by the Bank of Thailand since May. Foreign investors also reduced their holdings of short-term bonds given concerns on emerging markets and trend of baht depreciation in the recent period. Meanwhile, **medium- and long-term government bond yields** increased mainly due to external factors (Chart 2.6), following an increase in 10-year U.S. treasury yields in line with better-than-expected US economic outturns and a continued increase in global oil prices. Such improvement was also supported by domestic factors including recent economic and inflation outturns which were better than market expected. This resulted in a rise in medium- and long-term government bond yields before declining somewhat as U.S. treasury yields declined. Such decline was due to concerns over the euro area economy from political uncertainties and lower-than-expected economic outturns.

Chart 2.5 Short-term interest rates remained close to policy rate, except short-term government bond yields which stabilized at the low level.

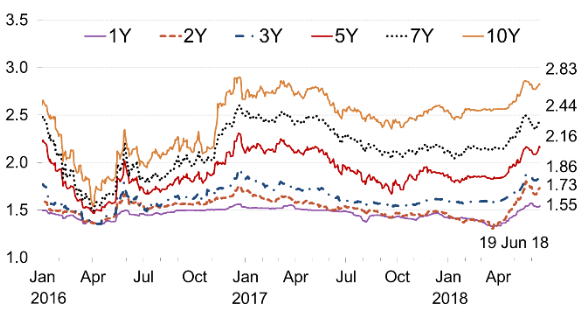
Short-term rates in financial markets



Sources: Bank of Thailand and Thai Bond Market Association (Thai BMA)

Chart 2.6 Movements in medium- and long-term government bond yields were driven mostly by external factors

Government bond yields

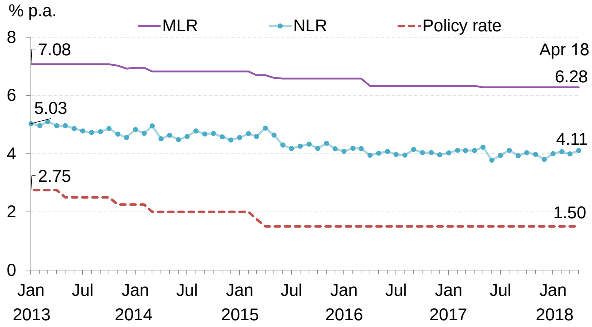


Source: Thai Bond Market Association (Thai BMA)

Corporate bond yields stabilized at low levels in tandem with credit spread[1/] which was largely unchanged. Meanwhile, **financing costs through commercial banks**, as reflected in the new loan rate (NLR)[2/], remained at a low level, indicating financial conditions that were accommodative (Chart 2.7).

Char 2.7 New Loan Rate (NLR) stabilized at low level

New Loan Rate



Source: Bank of Thailand

[1/] Credit spread is the difference between corporate and government bond yields with the same tenure, reflecting an assessment on corporate bond issuers' default risks.

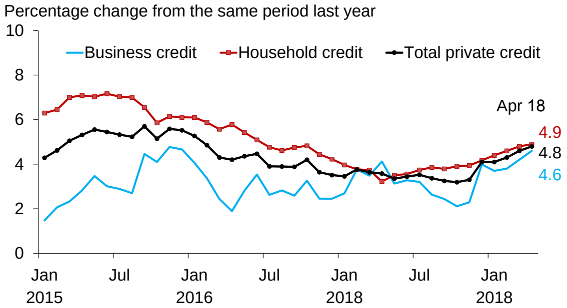
[2/] NLR is calculated based on a weighted average of interest rates for new loan contracts extended by 14 Thai commercial banks (excluding consumer loans and loans to financial intermediaries). The data covers loans of value of 20 million baht or higher for all purposes and terms and includes both secured and non-secured loans. Moreover, interest rates used in the calculation refer to the mid-rate between the lowest and the highest rates in each loan contract.

Private credit extended to both business and household accelerated, together with improvements in credits extended to SMEs observed in more businesses, reflecting a more broad-based economic recovery.

Private credit[3/] continued to accelerate in the first quarter and in April 2018, by expanding at 5.0 percent in April 2018 from the same period last year (Chart 2.8), higher than 4.3 percent observed at the end of the fourth quarter of 2017. Business credit growth accelerated from the end of last year, especially loans extended to SMEs with relatively large credit lines, and was more broad-based across several types of businesses such as real estate, construction, and warehouses. Meanwhile, loans extended to large corporates improved in several businesses such as real estate, sugar industry, petrochemical and chemical products. In addition, household credit accelerated across all loan purposes, particularly auto leasing which continued to accelerate in line with demand expansion and new car launches. Furthermore, consumer and mortgage loans continued to expand.

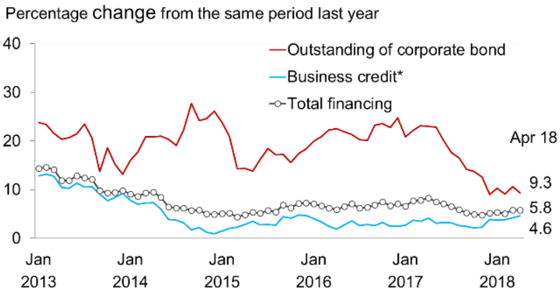
The net issuance of corporate bonds continued to increase in the first quarter of 2018 from the same period last year as observed in funding of commercial banks and businesses in the financial, food and beverages, and real estate sectors. Net issuance of corporate bonds expanded 9.3 percent in April from the same period last year mainly due to funding of businesses in transport and construction material sectors (Chart 2.9). **Funding through the equity market** continued to increase in the first quarter of 2018 and in April 2018, especially in businesses related to petrochemical and chemical products, technology, and real estate.

Chart 2.8 Private credit accelerated from both business credit and household credit
Growth of private credit



Note: Private credit includes credit to other depository corporations (ODCs) namely commercial banks, specialized financial institutions, finance companies, saving cooperatives, and money market mutual funds
Source: Bank of Thailand

Chart 2.9 Overall financing continued to expand
Growth of corporate bond outstanding and business credit



Note: *Business credit covers lending activities of Other Depository Corporation (ODCs)
Sources: Thai Bond Market Association (Thai BMA) and Bank of Thailand

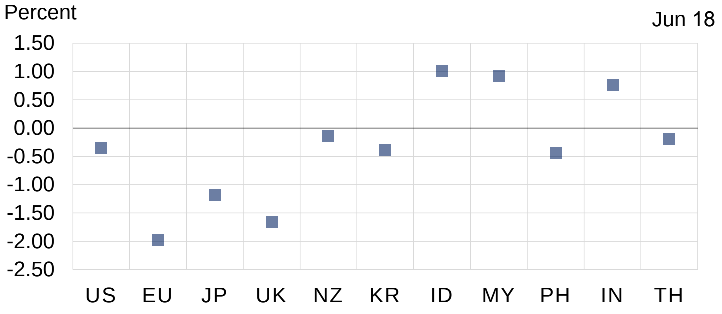
Going forward, financial conditions were expected to remain accommodative as reflected in the real policy interest rate which remained at a low level and was moderate compared with other countries (Chart 2.10). Meanwhile, financing costs through commercial banks, as reflected in the new loan rate (NLR), would stabilize at a low level. Nevertheless, the Credit Condition Survey[4/] indicated that financial institutions would be more vigilant in extending credit to SMEs in the second quarter of 2018 from rising concerns on credit quality.

[3/] Outstanding credit of other depositary corporations (ODCs), namely commercial banks, specialized financial institutions, finance companies, savings cooperatives, and market mutual funds.
[4/] Survey of credit conditions for the fourth quarter of 2017 and outlook for the first quarter of 2018.

Meanwhile, financial institutions would still maintain caution in extending household credit in all purposes, except for credit card loans and auto leasing extended to risky customers.

Chart 2.10 Thailand's real policy rate* remained low and was moderate compared with other countries

Real policy rates*



Note: *Calculated from policy rate subtracted by one-year-ahead inflation expectation according to a survey by Consensus Economics (as of 11 June 2018)

Sources: Bloomberg, Consensus Economics, calculation by Bank of Thailand

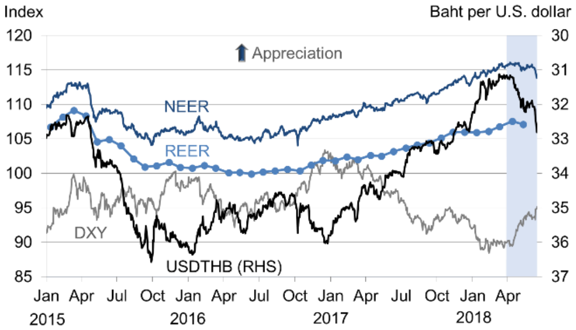
The baht weakened against the U.S. dollar and the nominal effective exchange rate also depreciated.

In the second quarter of 2018, **the baht depreciated against the U.S. dollar** relative to the end of previous quarter (Chart 2.11). The baht depreciation was mainly due to the strengthening of the U.S. dollar since April, driven by improved economic outlook of the US relative to other countries, particularly the euro area. As a consequence, investors anticipated a faster-than-assessed pace of policy rate hike in the US. Meanwhile, the European Central Bank signaled to maintain the degree of monetary policy accommodation for an extended period. Moreover, investors were concerned over intensifying trade retaliations between the US and major advanced economies, as observed in greater capital outflows from emerging market economies including Thailand, especially from countries with vulnerable economic fundamentals such as Argentina and Turkey. However, the impact of capital outflows on the Thai economy was largely limited thanks to strong external stability. In addition, there were additional depreciation pressures on the baht owing to seasonal factors in the second quarter from repatriation of dividends of foreign companies and foreign investors from Thailand. As of June 19, 2018, the baht closed at 32.81 baht per U.S. dollar, depreciated 5.0 percent from the end of the previous quarter.

The nominal effective exchange rate (NEER) stood at 113.82 on June 19, 2018, a 1.5 percent depreciation from the end of the previous quarter, as the baht depreciated against most trading partner currencies, except the euro and currencies of emerging market economies other than Asia (Chart 2.12). This was partly due to a gradual increase in the policy rate of some central banks in the region. As of the end of May 2018, **the real effective exchange rate (REER)** slightly rose 0.2 percent from the end of the previous quarter as inflation in Thailand increased at a faster pace relative to trading partners. In the period ahead, exchange rates would likely remain volatile due to uncertainties surrounding international monetary and fiscal policies, trade protectionism measures, geopolitical risks, and outlook of oil prices.

Chart 2.11 The baht depreciated against the U.S. dollar as the U.S. dollar strengthened

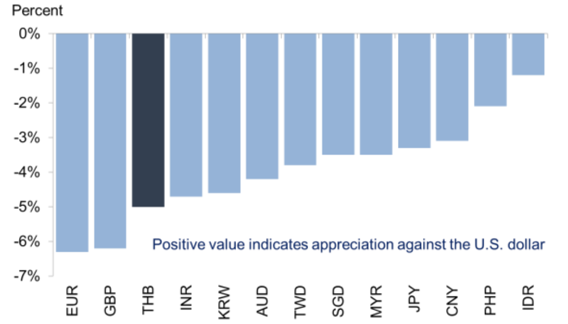
USDTHB, NEER, DXY



Source: Bank of Thailand and Reuters (data as of 19 June 2018)

Chart 2.12 Major currencies and most regional currencies depreciated against the U.S. dollar.

Currency changes against the U.S. dollar (19 Jun 18 compared to 30 Mar 18)



Source: Bank of Thailand and Reuters (data as of 19 June 2018)

Financial stability remained sound overall. However, there remained risks in certain pockets warranted monitoring including a continued search-for-yield behavior, volatilities in global financial markets which might affect financing cost through bond markets and rollovers of short-term corporate bonds, deterioration in credit quality of certain households and businesses, and an oversupply of property in the real estate market in certain price ranges and areas which were at a high level.

Thailand's financial stability remained sound as reflected in sustained current account surplus and a high level of foreign exchange reserves which would provide cushion against volatilities of economic and financial conditions in both domestic and foreign countries. In addition, financial positions of financial institutions and insurance businesses remained strong and high levels of capital buffers of commercial banks would be able to cushion against risks should credit quality deteriorated. Risks related to leveraging of the private sector continued to decrease overall, as reflected in the downward trend of debt to GDP of non-financial corporates. This was on account of a continued economic expansion and a smaller growth of corporate and household debts relative to the previous 2-3 years. However, the Committee assessed that there remained pockets of risks to be monitored going forward. These risks were summarized as follows.

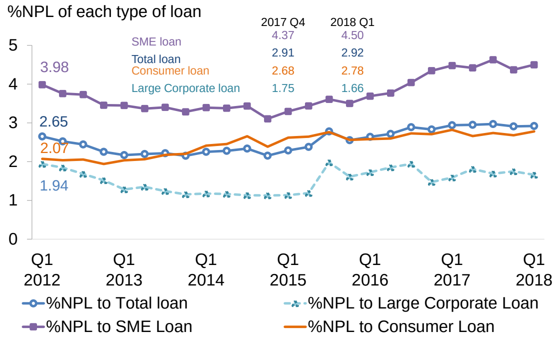
(1) The continued search-for-yield behavior could lead to underpricing of risks, although overall systematic risks remained limited. However, given a prolonged period of low interest rates, there remained several issues to be closely monitored. Such issues included, for example, (1) an overseas investment through foreign investment funds (FIF) that remained at a high level, despite some slowdown since the beginning of 2018, due to rising costs of foreign exchange hedging and concerns over volatilities of global financial markets. Nevertheless, there remained concentration risk as investments were mainly concentrated in a few countries. In addition, (2) a continued search-for-higher-yield behavior through savings cooperatives, whose assets and deposits surged at a high rate albeit slowing down somewhat after regulatory authorities collaborated to enhance supervisory standards. Meanwhile, large saving cooperatives were more interconnected with the financial system through investments in equities, thereby increasing importance of savings cooperatives system to the financial system. Thus, the Committee would continue to closely monitor such linkages as well as developments of savings cooperatives.

(2) Volatilities of capital flows and global financial markets might trigger yield snapbacks and affect rollovers of businesses from funding through short-term bond issuances. Although most issuers raised funds through issuing debt instruments with investment grade above the A level, global policy rates outlook which was on an upward cycle could trigger yield snapbacks and might affect financial positions of some businesses that had to roll the fund over, especially bonds with investment grade below A level.

(3) Overall credit quality remained unchanged but deteriorated among some households and businesses. The non-performing loan (NPL) ratio of the commercial banking system stabilized at 2.92 percent in the first quarter of 2018 from 2.91 percent in the previous quarter. However, NPLs of consumer and SMEs loans increased to 2.78 percent and 4.50 percent respectively (Chart 2.13). This reflected increasing fragility in debt serviceability of households and SMEs, especially households with large debt burden and smaller SMEs with vulnerable financial positions. In addition, with regard to household credits extended by commercial banks, the loan to value (LTV) ratio of mortgage loans increased and credits extended to low-income borrowers also rose. This might affect debt burden of households and their debt serviceability in the period ahead. Moreover, performances and financial positions of some SMEs remained fragile, as reflected in the operating profit margin (OPM) and the interest coverage ratio (ICR) of small businesses in the first quarter of 2018 that continued to be negative[5/].

Chart 2.13 Overall loan quality remained stable, but deteriorated in some households and businesses particularly SMEs

Non-performing loan (NPL) ratio of the banking system

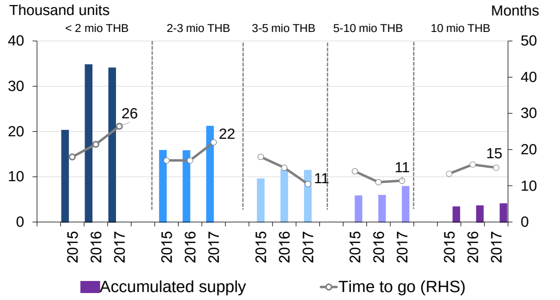


Source: Bank of Thailand

(4) An oversupply of property was observed in certain price ranges and areas. In particular, the oversupply of condominium units with price below 3 million baht remained at a high level, while the time taken for all units to be sold was relatively long (Chart 2.14). Moreover, higher demand from foreigners in recent periods might prompt developers to assess a too-high demand from foreigners and led to an increase in an oversupply of property in the future. However, such risks were still limited at present, as reflected in the survey of real estate developers selling condominium units to foreigners which revealed that developers remained cautious in launching new projects.

Chart 2.14 An oversupply of condominium units with price below 3 million baht continued to increase while time to go appeared longer

Condominium inventory in Bangkok and vicinity and 'time to go'*



Note: 'Time to go' is the time taken for all real estate inventory to be sold out at the average sales rate per month (since projects launched) given no additional supply.
Source: AREA and calculation by Bank of Thailand

[5/] For OPM and ICR at the 25th percentile of small-sized companies listed at the Stock Exchange of Thailand

2.2 Outlook for the Thai Economy

Under the Committee's assessment, Thailand's economic growth was projected to gain further traction. The Thai economy was expected to grow at 4.4 percent and 4.2 percent in 2018 and 2019 respectively which were higher than previously assessed in the previous *Monetary Policy Report*. Key growth drivers included (1) a continued expansion of merchandise exports and tourism in tandem with global trade volume and trading partner economies, and (2) higher-than-expected private consumption and private investment growth. Meanwhile, inflation was projected to gradually trend up due to domestic demand growth and rising energy-related prices in tandem with global crude oil prices. However, inflation would slowly rise as prices of fresh food were expected to be lower than previously assessed.

Table 2.2 Forecast summary

Percent	2017*	2018	2019
GDP growth	3.9	4.4 (4.1)	4.2 (4.1)
Headline inflation	0.7	1.1 (1.0)	1.2 (1.2)
Core inflation	0.6	0.7 (0.7)	0.9 (0.8)

Note: * Outturn
( ) Monetary Policy Report March 2018
Sources: NESDB, Ministry of Commerce, Bank of Thailand's estimates

Summary of the key forecast assumptions

- Trading partner economies were projected to expand slightly faster than the previous assessment from strong growth in Asia driven by export and domestic demand.

- The federal funds rate was expected to be raised four times in 2018, more than previously expected. The Fed would raise the policy rate twice in the first half of the year and also likely increase the rate twice in the second half of the year. In 2019, the Fed was expected to raise the policy rate three times and gradually commence its balance sheet reduction according to the announced plan.

- Asian currencies (excluding the Chinese yuan) would be on an appreciating trend on the back of continued improving economic fundamentals of Asian economies. However, the appreciation would be at a smaller degree throughout the forecast horizon compared to the previous assessment given stronger-than-expected U.S. dollar in the second quarter of 2018. Positive perceptions on the U.S. economy strengthened the dollar more than expected.

- The Dubai crude oil price was revised up throughout the forecast horizon due to supply-side factors, especially a continued decline of crude oil inventory and investor concerns on short-term oil supply. Nevertheless, the Dubai oil price would gradually trend down to an equilibrium level in line with global economic fundamentals in the period ahead. However, oil prices would not be significantly lower than the current price due to growing demand following expanded global economy.

- Farm income was revised down from the previous estimate due to a decline in agricultural prices as a result of higher output such as rubber, palm oil and livestock. Nonetheless, rice prices would improve thanks to higher external demand.

- Public spending at current prices was revised down in 2018, while the spending in 2019 was slightly adjusted upward. Public consumption was lowered throughout the forecast horizon mainly due to the change in the government budget structure for the fiscal year 2019, with a larger share of capital spending compared to the previous assessment. Public investment in 2018 was revised downward due to delayed investment by some state-owned enterprises following difficulties in accessing construction sites and some construction problems. In 2019, public investment was revised upward due to the following reasons. First, a larger share of the government budget for fiscal year 2019 was allocated toward capital spending compared with the previous announcement. Second, some investment spending would be carried over from 2018. Third, disbursement plans for the dual-track railway project became more certain.

Table: Summary of forecast assumptions

Annual percentage change	2017*	2018	2019
Dubai crude oil price (U.S. dollar per barrel)	53.1	69.2 (62.4)	68.3 (63.0)
Farm income (% YoY)	1.4	2.8 (3.1)	2.1 (2.2)
Government consumption at current price (billion baht)1/	2,532	2,669 (2,676)	2,819 (2,838)
Public investment at current price (billion baht)1/	926	1,028 (1,038)	1,115 (1,092)
Fed funds rate (% at year end)	1.38	2.38 (2.13)	3.13 (2.88)
Trading partners' GDP growth (% YoY)2/	3.9	3.8 (3.7)	3.6 (3.6)
Regional currencies (excl. China) vis-à-vis the U.S. dollar (index)3/	155.7	149.9 (148.0)	149.1 (147.0)

Notes: 1/ Assumption includes spending on infrastructure investment plans
2/ Weighted by each trading partner's share in Thailand total exports
3/ Increasing index represents depreciation, decreasing index represents appreciation
* Outturns
( ) Monetary Policy Report March 2018

Merchandise exports continued to expand across various product categories and almost all export destinations.

The value of merchandise exports was projected to continue expanding and record at 9.0 and 5.0 percent growth in 2018 and 2019 respectively, up from the previous estimates of 7.0 and 3.6 percent growth respectively in the previous *Monetary Policy Report*. Growth would be observed in terms of price and volume. Export prices would trend up in line with crude oil prices, especially for commodities and oil-related products. Export volume would continue to expand across various product categories—particularly electronics, auto parts, and processed agricultural products (Chart 2.15)—and almost all export destinations (Chart 2.16), in tandem with expansion in global trade volume and trading partner economies. **However, the value of merchandise exports in 2019 was expected to exhibit a slower growth due to the following reasons**. First, global trade and trading partner economies would slow down after accelerating in earlier periods owing to economic stimulus measures in the U.S. and Japan whose effect was expected to end in 2019. In addition, Chinese economic structural reforms would slow down the Chinese economy. Second, high levels of exports in 2018 would cause a high base effect due to the fact that a number of industries relocated their production to Thailand and started exporting in 2018, for example, hard-disk drives and cellphones.

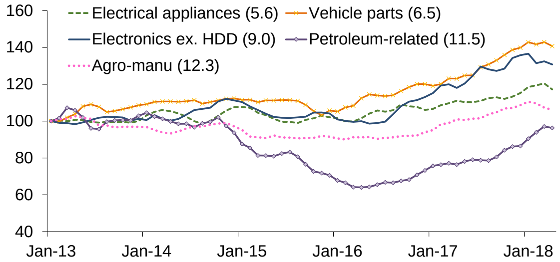
Nevertheless, the Committee assessed that intensifying trade retaliation between the U.S. and major economies, which would put pressures on investment and international trade, could directly and indirectly affect Thai exports. The effects, however, would differ according to product categories. Thus, the Committee would closely monitor developments of trade policy and negotiations while assessing potential impacts on the supply chain as well as Thai businesses. The effects could possibly impact several dimensions of the Thai economy through intentional trade, business confidence, and financial market volatilities.

Chart 2.15 Merchandise exports continued to expand across various product categories

Value of merchandise exports, by product category

Seasonally adjusted index, 3-month moving average

(January 2013 = 100)



Note: Number in () denotes share to total exports in 2017

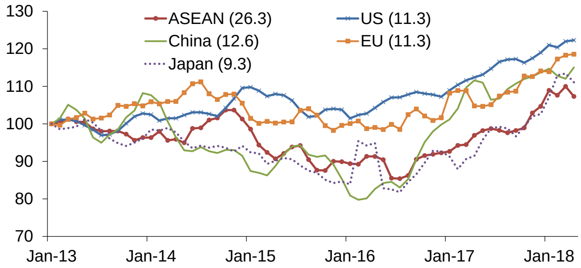
Source: Customs Department, calculation by Bank of Thailand.

Chart 2.16 Merchandise exports expanded across almost all export destinations

Value of merchandise exports, by export destination

Seasonally adjusted index, 3-month moving average

(January 2013 = 100)



Note: Numbers in ( ) represent share in total exports of year 2017

Source: Customs Department, Calculations by Bank of Thailand

Exports of services were expected to be slightly higher than the previous assessment due mainly to a greater number of foreign tourists.

Thailand's **exports of services were expected to be slightly higher than the previous assessment due mainly to a greater number of foreign tourists, albeit lower spending per head[6/]. The projected number of foreign tourists was revised up to 38.3 and 40.0 million in 2018 and 2019, respectively, up from the previous forecast of 37.6 and 39.0 million respectively estimated in the previous *Monetary Policy Report*.** Key factors supporting the tourism sector include a continued growth in the number of Chinese tourists, for both group tourists and free and independent travelers (FIT), and newly opened direct flights from second-tier Chinese cities to Thailand. However, Thailand's tourism sector would still face limitations on the capacity of major airports in accommodating the rising number of tourists. Nevertheless, recent management by airlines and airports also helped alleviate airport capacity constraints such as additional flights during off-peak times and higher utilization of regional airports.

Given improvements in the value of merchandise and services exports, the projection for the value of merchandise and services imports was revised up with higher imports of raw materials and intermediate goods, coupled with more imported capital goods and machinery in line with improving private investment. In addition, oil prices were expected to trend up. Consequently, the current account would likely record a smaller surplus than estimated in the previous *Monetary Policy Report*, registering 40.0 and 36.0 billion U.S. dollars in 2018 and 2019 respectively.

[6/] According to the survey in the first quarter and second quarter of 2018 by the Ministry of Tourism and Sports.

Private consumption would expand at a higher rate than the previous assessment.

Private consumption would gain further traction in the period ahead, driven mainly by non-farm households, especially middle- and high- income households whose earnings continued to rise. Meanwhile, earnings of low-income households started to improve following stronger employment particularly in construction and services sectors. Farm income expanded on the back of higher production while agricultural prices of certain crops that lingered at low levels would remain a major drag on farm income. Moreover, government measures—such as the social welfare card project (second phase), the community enterprise development project, and agricultural reform project—would support purchasing power going forward. However, elevated household debt would cause households to allocate part of their income for debt repayment. In addition, ongoing structural changes in the labor market would continue to weigh on private consumption growth. For instance, increased adoption of automation in place of human labor in the production process could lead to labor migration toward the services sector. Consequently, workers might earn less owing to lower pay in most services sector jobs relative to the manufacturing sector. As a result, this factor would remain a drag on private consumption growth.

Public spending remained a driver of economic growth, with some investment projects postponed to 2019.

Public spending would continue contributing to economic growth. Public consumption was expected to steadily increase despite smaller projected outlays due to the change in the government budget structure for fiscal year 2019, with a larger share of capital spending compared with the previous announcement. Although there was additional fiscal budget in 2018, this would not compensate for the moderation in public consumption due to the change in the 2019 budget structure. Public investment in 2018 was revised downward due to delayed investment of some state-owned enterprises. For example, the Bang Pakong power plant construction by the Electricity Generating Authority of Thailand faced difficulties in accessing construction sites while the Airport of Thailand Public Company Limited (AOT)'s Suvarnabhumi Airport development project phase 2 also had some construction problems. In any case, public investment in 2019 was revised up due to the following reasons. First, a larger share of the government budget for fiscal year 2019 was allocated to capital spending compared with the previous announcement. Second, some investment spending would be carried over from 2018. Third, disbursement plans became more certain for the State Railway of Thailand's Den Chai-Chiang Rai-Chiang Khong dual-track railway project. In addition, the impact from the enforcement of the Public Procurement and Supplies Management Act, B.E. 2560 started to dissipate in line with the previous assessment.

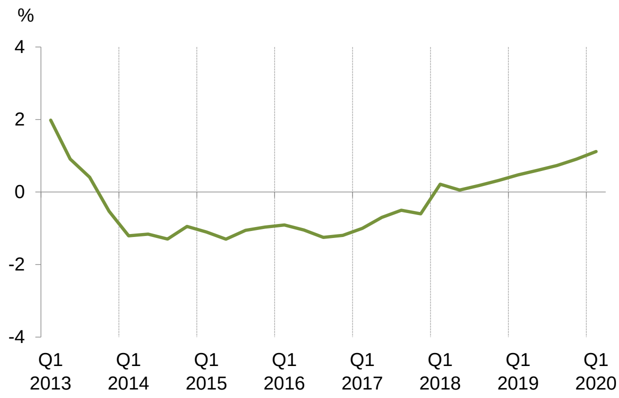
Private investment was projected to achieve higher growth than previously assessed

Private investment was projected to achieve higher growth than previously assessed, in line with growth of merchandise exports and private consumption, reflected by these following factors. First, capacity utilization rose across various industries, such as automobiles and food and beverages. Second, import volume of capital goods and machinery increased. Third, demand for private credits extended to businesses increased. Forth, investment plans of large corporates became more certain. Fifth, government measures such as the community enterprise development and agricultural reform projects would support low-income households. Sixth, the value of investment application submitted to the Board of Investment continued to trend up. Moreover, government infrastructure investment projects, the Eastern Economic Corridor (EEC), and public-private partnership projects (PPP) were increasingly taking shape. After the auction for mass rapid transit projects and high-speed trains connecting three airports[7/], joint investment plans by various private sector groups would shore up business confidence, foster investment climate, and attract greater foreign investment. Nonetheless, developments of such investment projects would warrant monitoring going forward.

Inflation was expected to slowly rise.

Headline inflation was projected to rise at a slightly faster pace than the assessment in the previous *Monetary Policy Report* on the back of acceleration in prices of energy-related products in tandem with global crude oil prices. However, government regulations on energy-related prices partly curbed the increase in costs of transportation and prepared food. Fresh food prices were projected to grow at lower rates following a larger-than-expected supply of meat, fruits, and vegetables. The increased supply was due to periods of favorable weather conditions and the government's water management that devoted additional irrigated water toward agricultural purposes. **Moreover, demand-pull pressures rose only slightly**. Although the output gap had already closed in the first half of 2018 (Chart 2.17), demand-pull inflationary pressures rose only slightly as benefits from economic growth were not yet sufficiently broad-based. In addition, there continued to be sales promotion offered by businesses and structural changes still put downward pressures on inflation. For instance, developments of production technology helped reduce costs of goods and services and greater competition constrained businesses from raising prices. **The Committee therefore projected headline inflation to average 1.1 and 1.2 percent in 2018 and 2019, respectively, while core inflation was projected to average 0.7 and 0.9 percent in 2018 and 2019, respectively.**

Chart 2.17 Output Gap



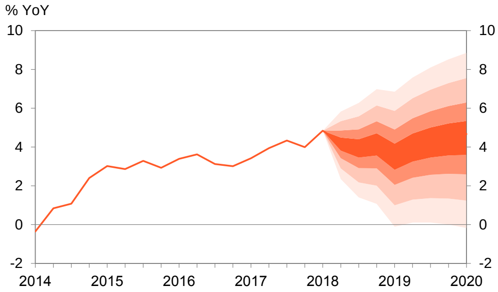
Risks to the growth projection were expected to tilt more downward than previously assessed.

Under the Committee's assessment, **risks to the growth projection were expected to tilt more downward than previously assessed**, as reflected in the fan chart that skewed downward throughout the forecast horizon (Chart 2.18). **The increased downside risks were mainly due to external factors.** First, U.S. trade protectionism measures, retaliation by major economies, and intensifying competition resulted from trade diversion could have greater-than-expected impacts on Thai exports and private investment. Second, growth of Thailand's trading partner economies might be lower than expected in case of intensifying global geopolitical tensions. Moreover, certain domestic factors also posed downside risks to the

[7/] Construction expected to commence in the latter half of 2019.

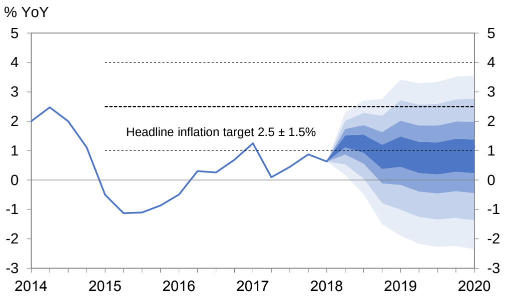
baseline projection. First, private consumption growth might be lower-than-expected as domestic purchasing power had yet to recover in a broad-based manner. Second, the enforcement of the Public Procurement and Supplies Management Act, B.E. 2560 could lead to longer-than-expected delay in budget disbursement of some government agencies. Nonetheless, **there were possibilities that the growth outturn might be higher than the baseline projection**. First, growth of trading partner economies might be higher than expected. In such case, the U.S. economy would continue to improve thanks to support from the tax reform. The Chinese economic growth could slow down at a slower pace than expected should the Chinese government implement additional economic stimulus measures, which would consequently lead to better-than-expected Asian exports growth. Second, domestic spending could be higher than the baseline assessment due to government infrastructure investment projects, public-private partnership (PPP), as well as government measures aimed at stimulating private spending. **Risks to the headline and core inflation projections were expected to tilt more downward than the previous assessment** consistent (Charts 2.19 and 2.20) with the risks to the growth forecast.

Chart 2.18 Growth forecast



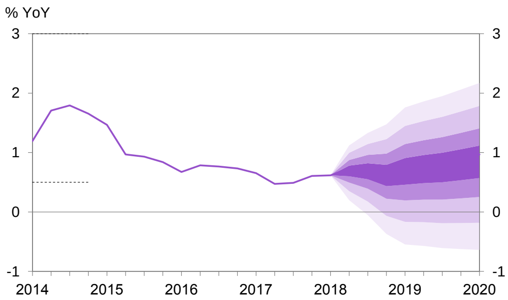
Note: Fan chart covers 90% of the probability distribution

Chart 2.19 Headline inflation forecast



Note: Fan chart covers 90% of the probability distribution

Chart 2.20 Core inflation forecast



Note: Fan chart covers 90% of the probability distribution

Table 2.3 Forecasts of GDP and components

Annual percentage change	2017*	2018	2019
GDP growth	3.9	4.4 (4.1)	4.2 (4.1)
Domestic demand	2.1	3.9 (3.6)	3.8 (3.4)
Private consumption	3.2	3.7 (3.3)	3.6 (3.3)
Private investment	1.7	3.7 (3.0)	4.4 (3.6)
Government consumption	0.5	2.7 (2.9)	2.9 (3.3)
Public investment	-1.2	8.9 (9.5)	6.5 (3.4)
Exports of goods and services	5.5	5.5 (5.2)	3.8 (3.6)
imports of goods and services	6.8	6.3 (5.5)	3.8 (3.7)
Current account (billion, U.S. dollars)	48.1	40.0 (42.2)	36.0 (39.5)
Value of merchandise exports	9.7	9.0 (7.0)	5.0 (3.6)
Value of merchandise imports	14.4	14.7 (11.5)	6.9 (5.4)
Number of foreign tourists (million person)	35.4	38.3 (37.6)	40.0 (39.0)

Note: *Outturns

( ) Monetary Policy Report March 2018

3. Monetary Policy Decision

In the second quarter of 2018, the Committee assessed the necessity to maintain monetary policy accommodation in the current context by weighing various factors in order to promote sustainable economic growth, while pursuing price stability and preserving financial stability.

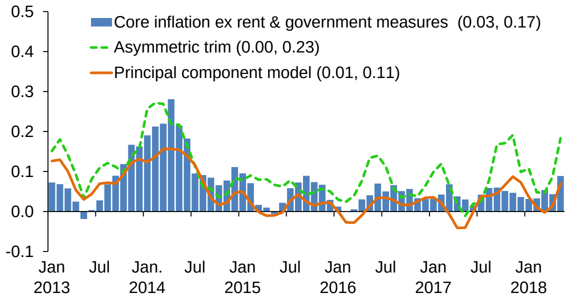
The Committee placed great emphasis on the strength and continuation of economic growth, and headline inflation that would continue to move firmly within target in a sustainable manner in the period ahead. The Committee assessed that the economy would gain further traction driven by stronger momentum from both external and domestic demand, while inflation would rise at a faster pace than expected partly owing to supply-side factors. However, risks to financial stability from a prolonged low interest rate must be monitored.

1. Supporting sustainable economic growth through monetary policy accommodation. The Thai economy was expected to gain further traction with robust growth, driven by the external sector which continued expanding in line with stronger global economic expansion, and domestic demand which gained additional momentum in almost all components. This was particularly reflected in strengthening private consumption. However, there were risks to growth from elevated household debt, subdued prices of some agricultural products, and adverse impacts facing some workers following structural changes in the labor market. Private investment was expected to continue expanding thanks to investment plans of large businesses and would be supported further from investment in the EEC and the PPP projects where the prospects became more certain. However, the progress on such investment projects in the period ahead must be monitored. Public expenditure remained a driver of economic growth despite risks of delayed disbursement than expected. In this light, the Committee viewed that the monetary policy accommodation would help support the continuation of economic growth, although the spillovers of economic expansion had yet to sufficiently extend to all economic sectors. This was due to structural problems in various dimensions currently facing the Thai economy such as a decreasing working-age population given aging, technological advancements which led to a shift in demand for labor skills and types of investment, and Thailand's educational system that was yet to produce labor to match market demand. The Committee viewed that such problems should be addressed primarily by structural reform policies in conjunction with other economic policies (Box: *Thailand's structural economic issues and economic policy coordination*). In addition, the Thai economy would still face risks from the external front that warranted close monitoring. These risks included foreign trade policies of the U.S. and possible retaliatory measures from major economies, especially from additional tariffs on imported cars and auto parts by the U.S., and geopolitical risks which might affect economies of Thailand's trading partners. Some Committee members viewed that there was a need to promptly address structural issues, especially if such risks weighed on Thai exports, so that domestic spending could once again become a key economic driver in the long run.

2. Supporting headline inflation to move within target in a sustainable manner. Inflation indicators recently pointed to a gradual increase in inflationary pressures (Chart 3.1). This was particularly observed in an acceleration of supply-side price pressures in line with energy prices, following the fast rise in global oil prices in the recent period. Such development led to a rise in headline inflation above the lower bound of target during the first two months of the second quarter of 2018. As a result, average headline inflation was forecasted to be within target in 2018 and 2019. The Committee viewed that although headline inflation was expected to rise at a faster pace than projected, it was mainly on account of oil price increases. Meanwhile, demand-pull price pressures would improve gradually. Thus, developments of inflation should be closely monitored, especially fresh food prices which were highly volatile owing to weather conditions and agricultural output. This could cause fresh food prices to rise at a slower pace than previously expected. Moreover, inflation expectations, surveyed from businesses and professional forecasters, were close to the inflation target, while long-term inflation expectations picked up from the previous quarter (Chart 3.2). In addition, the Committee viewed that demand-pull price pressures that continued to be at a low level, and structural changes such as technological developments and an expansion of e-commerce businesses, led to lower costs of production and intensified price competition. Thus, businesses faced constraints in raising prices. Furthermore, there were also other factors which might contribute to lower upward inflationary pressures than in the past. These factors included lesser impact on inflation of an increase in minimum wages, government's policy on domestic energy pricing, and the expansion of farming areas worldwide which might cause agricultural prices to remain low or rise to the lesser extent. Thus, the Committee saw the need to study the impact of such factors on inflation dynamics in further details, as this could have significant implications on inflation target setting in the future.

Chart 3.1 Underlying inflation indicators remained low reflected a gradual increase in inflation.

Percent change from previous month
(3-month moving average, seasonally adjusted)

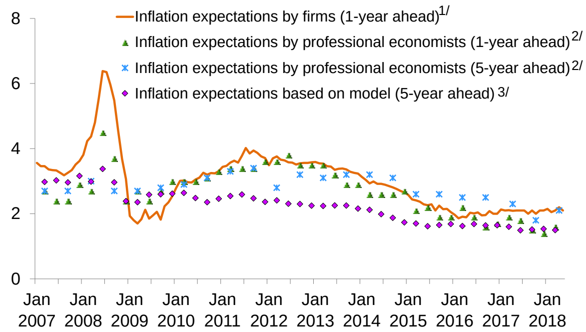


Note: Data point indicated in () where the first value is %MoM (sa, 3mma) as of May 2018, while the second value is 2004 - 2014 average; Asymmetric trim excludes goods and services with most volatile price changes, removing the bottom 10 percentile and the top 6 percentile; Principal component model calculates changes in common statistical components that attribute price movements across categories of goods and services.

Source: Bureau of Trade and Economic Indices, Ministry of Commerce, calculations by Bank of Thailand

Chart 3.2 Inflation expectations

Percent change from same period last year



Source: [1/] Business Sentiment Survey of Bank of Thailand (BSI)
[2/] Asia Pacific Consensus Forecast
[3/] Calculations based on macro-finance term structure model with bond yield and macroeconomic data

3. The buildup of risks to financial stability. The Committee viewed that financial stability remained sound overall. However, the buildup of vulnerabilities in certain pockets must be monitored as it could lead to an abrupt adjustment in the financial system in the future. Such vulnerabilities included, first, **the continued search-for-yield behavior given a prolonged low interest rate environment which could lead to increased underpricing of risks**, such as a surge in assets and deposits of saving cooperatives despite some deceleration following regulatory improvements to enhance supervision particularly on those saving cooperatives with larger asset sizes and greater interconnections with the Thai financial system. Meanwhile, investment in foreign investment funds (FIFs) continued and was concentrated in certain countries. However, investment in FIFs slowed down somewhat due to rising costs of foreign exchange hedging in recent periods. The second financial stability risk was **volatilities of international capital flows and global financial markets** which could trigger yield snapbacks and affect roll-overs of businesses that relied on financing through short-term bonds, especially those holding bonds with investment grade below A. The third financial stability risk was that, **while overall credit quality was largely stable, improvement in debt serviceability of households and SMEs was not clearly observed.** This was reflected in NPLs of those groups that remained elevated as well as the household debt to financial assets ratio that would likely trend up. Finally, **oversupply in the property market**, especially in the recent periods where developers continued to raise funds to expand their businesses, was another risk to financial stability. In addition, some financial institutions engaged in competition by extending mortgage loans with higher credit risks as well as loans with higher LTV ratios.

Nevertheless, some Committee members viewed that certain risks to financial stability might be self-correctable when the policy rate increased, while some risks might need to be addressed by macroprudential measures such as measures on credit card and personal loans under the supervision of the Bank of Thailand that were enforced since the end of 2017. Some Committee members viewed that, although macroprudential measures were appropriate tools used to curb certain risks in some economic sectors, the policy rate was an important tool preventing risks from further developing and affecting broad financial and economic stability. The policy interest rate thus should be used in conjunction with macroprudential measures.

The Committee voted unanimously to keep the policy interest rate at 1.5 percent to maintain accommodative financial conditions in order to support a stronger and continued economic growth as well as foster inflation to gradually rise and move within target in a sustainable manner, without causing the buildup of vulnerabilities to financial stability

The Committee had to weigh various factors in formulating the most appropriate course of monetary policy and voted unanimously (6 to 0, with one Committee member absent) at the meeting on May 16, 2018 and later 5 to 1 (with one member absent) at the meeting on June 20, 2018 to keep the policy rate unchanged at 1.50 percent. Monetary policy accommodation remained an important factor supporting a stronger and continued growth of domestic demand which would foster headline inflation to gradually rise and move within target in a sustainable manner. The Committee viewed that current level of policy interest rate at 1.50 percent was conducive to accommodative financial conditions as reflected in a low real policy rate. Moreover, the interest rates on new loans that continued to remain low as well as bond yields that remained accommodative despite some recent increase continued to support businesses financing. This was observed in a continued growth of commercial bank loans extended to businesses and of corporate bonds issuance. Meanwhile, one Committee voted to raise the policy rate by 0.25 percentage point to 1.75 percent at the meeting on June 20, 2018 with the view that the economic recovery was sufficiently robust and inflation was expected to remain within target throughout the projection period. Moreover, the member viewed that the prolonged monetary accommodation might induce households and businesses to underestimate potential changes to financial conditions and thus voted to raise the policy rate at this meeting in order to start building policy space for future needs.

With regard to exchange rates, the baht depreciated in recent periods as the U.S. dollar appreciated since mid-April due to (1) uncertainties on trade war between the U.S. and major advanced economies while geopolitical risks were temporarily relaxed, (2) an improved outlook of the U.S. economy, and (3) seasonal factors in the second quarter from repatriation of dividends of foreign companies and investors. Recently in June, the U.S. dollar appreciated at a faster pace as the Fed would likely raise policy rates a total of four times this year. As a result, the baht as well as other regional currencies weakened against the U.S. dollar. However, the baht was least affected compared with other emerging market currencies with vulnerable economic fundamentals. Nevertheless, the Committee assessed that the impact of the baht movements differed among businesses and households, where the impacts could be either positive or negative depending on whether the baht appreciated or depreciated. Exchange rate policy should therefore take into consideration impacts on various parties involved (Box: *The impact of exchange rates of the Thai economy*). Going forward, the baht would likely be volatile given uncertainties on the conduct of monetary and fiscal policies of major advanced economies. The Committee would thus continue to closely monitor developments in the foreign exchange market and impacts on the economy.

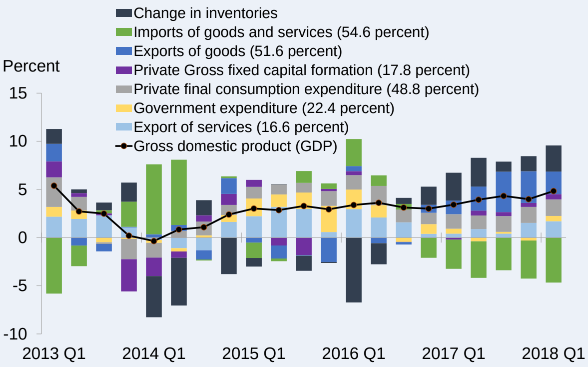
The Committee saw the need to carefully consider policy options in the context of the Thai economy. Hence, although some central banks of major economies and regional countries began to reduce the degree of monetary policy accommodation, the context of the Thai economy was different—in particular, given that Thailand's external stabilities remained sound and were able to cushion against international capital flow and global financial market volatilities. In addition, risks to financial stability that were partly due to a prolonged low interest rate environment were still at manageable levels. In this light, the Committee considered all policy tradeoffs and viewed that monetary policy accommodation could be maintained at the current level.

Looking ahead, the Committee viewed that monetary policy accommodation would be a key factor to support a stronger growth of domestic demand which could foster headline inflation to gradually rise and move within target in a sustainable manner. However, should economic expansion continue, and inflation move more firmly within target, the need for currently extra accommodative monetary policy would start to be reduced, and that the need for a policy rate increase in order to build policy space in the future would be increasing. The Committee would stand ready to appropriately utilize available policy tools to support a stronger economic growth while also preserving price and financial stability.

Thailand's structural economic issues and economic policy coordination

Chart 1 Thai economy continues to gain traction due to merchandise exports and exports of services and also by the recent strengthening of domestic demand.

Contribution to GDP growth by component



Note: () denotes share to GDP in 2017
Source: NESDB, calculation by Bank of Thailand

The Thai economy has rebounded and registered continued growth with key drivers from merchandise exports and tourism as well as recent gradual improvements in domestic demand (Chart 1). However, there remain questions why most people do not perceive the economy has improved despite Thailand's impressive growth outlook. The answer lies in part on Thailand's economic structure where benefits from economic growth are not yet sufficiently broad-based. This is evident as overall consumption growth is mainly driven by increases in purchasing power from medium- and high-income earners[8/]. On the other hand, low-income households remain cautious on spending because their income recovery has yet to be more robust. In theory, macroeconomic spillovers are transmitted to economic agents at the micro level through the labor market. That is, more jobs are created and income are raised, which will lead to higher consumption. Consequently, businesses will increase investment in response to demand expansion.

However, the above labor market mechanism has been constrained by ongoing structural challenges currently facing the Thai economy. Household debt remains high, while income growth does not catch up due to (1) structural problems in the labor market, (2) aging, (3) and technology advancements that alter consumption behavior, savings, and investment. If these structural challenges are not addressed today by both the private sector and coordination of government economic policies, these issues will become barriers for Thailand to achieve inclusive growth now as well as in the future.

Thailand's labor market is facing declining labor force while existing skills do not match demand in the fast-changing economy

There are three structural changes in the Thai labor market. **First, Thailand has faced labor force constraints**[9/], given there is a smaller number of young workforce while older workers increasingly retire. In fact, the Thai labor force already reached its peak in 2012 at 39.4 million. Since then, the number of the Thai labor force has slowly declined and thus Thailand becomes partly reliant on workers from neighboring countries. **Second, demand for labor has changed due to technology advancements.** In particular, as more automation and industrial robots have been used in production, demand for labor has changed in terms of both quantity and skill sets. For example, jobs declined in the electronics industry despite greater production in tandem with exports. In this light, the affected workers are mostly those with routine tasks such as those in the

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[8/] See further in Box: Assessing private consumption recovery in *Monetary Policy Report*, March 2018

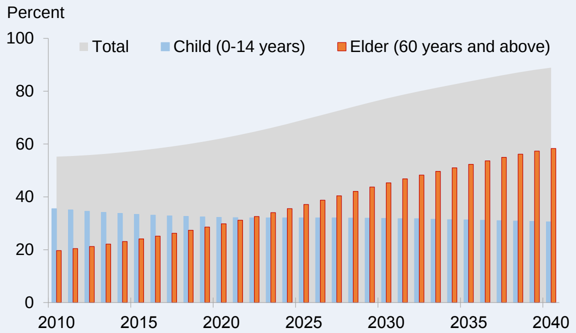
[9/] Thailand has started aging since 2004 and is expected to become an aged society in 2025. According to the definition by the United Nations, there are three stages of aging based on the ratio of the elderly to total population:
(1) an aging society consists of at least 10 percent of over 60 year olds, or at least 7 percent of over 65 year olds;
(2) an aged society consists of at least 20 percent of over 60 year olds, or at least 14 percent of over 65 year olds;
(3) a super-aged society consists of at least 20 percent of 65 year olds.

production line and machinery supervision. Moreover, demand for labor is rising for modern businesses in technology products and the services sector. Nonetheless, over 40 percent of Thai labor are in agriculture which accounts for only 9 percent of the country's GDP. **Third, the ability of Thailand's education system to produce skilled labor does not keep up with demand in the fast-changing economy.** This is reflected in new graduates now taking longer time to find a job despite no increase in the number of new graduates each year. In addition, most unemployed new graduates are in the fields of social sciences, business, and law.

Aging society and technology advancement have altered consumption, saving, and investment behaviors.

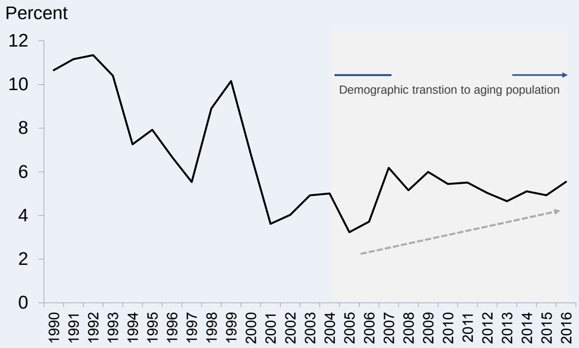
Since Thailand's enter to an aging society in 2004, a larger number of older population have increasingly relied on the working age group[10/]. The dependency ratio is expected to rise from 19.7 in 2010 to 58.3 in 2040 (Chart 2). In other words, in just around 20 years, ten working-age persons will have to take care more elderly persons—from two old-age persons in 2010 to approximately six old-age persons in 2040. As a result, Thailand will face several structural challenges as **some consumers have downsized their present consumption and instead saved more for retirement.** In fact, this is reflected by an upward trend in the savings-to-GDP ratio since Thailand entered aging society (Chart 3). This will indeed hamper the potential of private consumption growth in the long term on top of the high debt level which currently weighs on consumption. Thus, these challenges must be addressed by structural policies that aim to support private consumption to expand in a strong and sustainable manner in the long run. These may include policies to promote saving and efficient investment for better returns as well as retirement policy for various labor groups.

Chart 2 Ten working-age persons will have to take care more elderly from two old-age persons in 2010 to approximately six in 2040
Dependency ratio



Note: Dependency ratio refers to child, elder or both per 100 working age population
Youth Dependency ratio calculated as (number of children / Working age population) x 100
Dependency ratio of aging population calculated as (number of elders / Working age population) x 100
Total dependency ratio calculated as (children and elders / Working age population) x 100
Source: Estimated population for Thailand 2010-2040, NESDB

Chart 3 Demographic transition to aging population prompts households to save more for retirement
Household savings to Gross domestic product (GDP)



Source: NESDB, calculation by Bank of Thailand

The above structural challenges—declining labor force, shortage of labor whose skills are wanted by modern businesses, and falling purchasing power as a result of aging society—have made Thailand less attractive in the eyes of both Thai and foreign investors compared with other countries in the region, and **consequentially lowered investment in Thailand**. In addition,

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10/ Dependency rate of aging population is calculated from (old-age population/working-age population) x100

technology disruption has largely affected both consumption and business patterns such as shopping via social media and e-commerce platforms, ride-hailing mobile applications, and online news as opposed to press and television media. Thus, traditional businesses have to face fierce competition as well as lower investment in old businesses and technology. **Thus, businesses have adapted and invested in intangible assets** to boost efficiency such as ICT systems and software, **which requires a relatively smaller budget than investment in buildings and machines.** In addition, advanced technology enables production efficiency through automation as well as creating a sharing economy environment. As a result, **businesses do not need a large investment in machines compared with the past** to maintain the same level of production[11/]. Moreover, companies no longer have to invest in countries with low labor costs. Hence, with such investment structure, private investment in monetary terms remained in a low level relative to the past.

Structural challenges must be addressed with structural reform policy

Economic policy can be generally categorized into three groups: fiscal policy, monetary policy, and structural reform policy. **Fiscal policy** includes tax collection and public spending. In recent periods, the government has pushed large infrastructure investment projects and earmarked the budget on various economic stimulus programs, as reflected in the average budget deficit of around 2.8 percent to GDP during fiscal years 2015-2017. The government also aimed at resolving disbursement and investment delays through a disbursement acceleration measure. In addition to these policy measures, the government also supports low-income households to facilitate necessary adaptations through programs such as the government welfare card scheme and the debt relief measure for small farmers. Meanwhile, **monetary policy** entails determination of the policy interest rate, which has been maintained at an accommodative level at 1.50 percent since April 2015 to support economic growth, stabilize inflation, as well as ensure financial stability. In addition, the Bank of Thailand oversees the exchange rate to curb excessive volatility in order to enable the private sector to adjust to market conditions in a timely manner. Nevertheless, **neither fiscal nor monetary policy can entirely solve the problems currently faced by the Thai economy. Instead, structural challenges must be tackled by appropriate structural reform policy**. For instance, **first, labor policy** is a key structural policy, **which should be addressed more on the economic dimension in addition to the social, welfare, and security aspects.** In particular, policy should aim at improving labor skills to meet the demand of the modern economy. Such policy must target both potential workers who are currently in school as well as those already in the labor market in order to make a direct impact on productivity and wages. Second, **agricultural policy** involves the majority of Thailand's labor force in terms of both number of labors and geographical area. **Government price intervention may help farmers in the short run; however, a long-term solution to sustainably raising farm income must aim at increasing crop yields and reducing costs through several measures.** These include research on high-yield crops, agricultural zoning for suitable land use, water management, and publication of weather forecasts. Nonetheless, most Thai farmers are quite old and often move between the agricultural sector and other sectors. Therefore, there remains a challenge to accumulate investment as well as adopting innovation in the agricultural sector for better yield and higher income.

[11/] Based on interviews with businesses in Bank of Thailand's Business Liaison Program

The integration of economic policy for well-being in the short and long terms

Monetary policy at the current juncture remains accommodative to facilitate eased monetary and financial conditions despite tightening global monetary conditions. Fiscal policy is currently at its full capacity in stimulating economic growth through both current expenditure and capital expenditure on large infrastructure investment. Although both policies have brought back growth momentum, they are only short-term policy tools that are employed to nurture the economy during a cyclical downturn. In the long term, however, raising Thailand's economic potential requires structural reform policies. Fiscal and monetary policies alone can neither sustain continued growth in the long run nor ensure spillovers of the economic benefits across all sectors. Relevant parties involved must focus on pushing various structural reform policies to successfully take place as they will foster the Thai economy to sustainably grow both in the short and long run.

The Impact of exchange rates on the Thai Economy

The impact of exchange rates on the Thai economy can be twofold. On the one hand, an abrupt appreciation or a continued strengthening trend may weaken the country's price competitiveness or reduce export revenue in baht terms. These, in turn, affect wages in export-oriented firms and consumers' purchasing power due to their lower income, which may eventually result in slower economic growth. Nevertheless, these channels are only one side of the coin when assessing impact of exchange rates on the Thai economy. On the other hand, exchange rate appreciation helps lower producers' import costs of raw materials as well as delaying an increase in consumers' costs of living, especially when global energy prices swiftly increase. **The objective of this article is to examine the relationship between exchange rates and various economic sectors. The findings suggest that the effects of exchange rate appreciation on the overall economy are limited, yet the impact differs for each sector in the economy.** The results can be summarized in Table 1 as follows.

Table 1 A summary of the impact of exchange rates on the Thai economy

Economic Sector	Effect of a 1-percent baht appreciation	Notes
Effects on GDP	The Real Effective Exchange Rate (REER) that appreciates by 1 percent leads to a decline in GDP of around 0.02 percent within 1 year.	
1. Corporate sector		
1.1 Exports	- Export prices Increase by 0.3 percent (in U.S. dollar terms) Reduce by 0.7 percent (in baht terms) - Export volume Continuously declining and statistically insignificant effects	- Diverse impact across businesses Low value-added businesses face greater impact - Foreign demand has a greater role than exchange rates
1.2 Imports	- Import prices Increase by 0.2 percent (in U.S. dollar terms) Reduce by 0.8 percent (in baht terms) - Import volume Statistically insignificant effects	- Domestic demand has a greater role than exchange rates
1.3 Corporate profits	The impact on firm profitability differs across business characteristics and types Negative effects on export-oriented firms, but positive effects on import-oriented firms (as well as businesses with imported raw material)	
2. Household sector		
2.1 Wage, income and household earnings	Limited impact as no single sector records a positive correlation coefficient between their earnings growth and exchange rates larger than 0.3	
2.2 Inflation	Decrease by 0.03 percent due to falling energy prices	Firms' domestic price setting is influenced by factors other than exchange rates

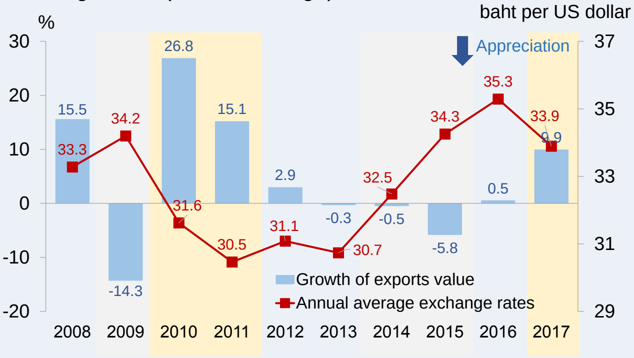
1. The impact of exchange rates on the Thai economy: the corporate sector

1.1 The relationship between exchange rates and exports

Considering the relationship between growth of export value and exchange rates over the past 10 years, **the results suggest that several periods of baht appreciation against the U.S. dollar, such as in 2010-2011 and 2017, coincided with strong export growth US** (Chart 1). Conversely, in some periods, such as in 2009 and 2014-2015, despite the weakening of the baht, export value contracted. Indeed, **in addition to exchange rates, export value may be driven by other factors as well,** for instance trading partners' income or even specific factors such as structural economic problems that could arise either domestically or externally.

Chart 1 Overall exports value appears to have no correlations with exchange rate movements

Growth of exports value (US dollar, Custom basis) relative to exchange rates (annual average)



Source: Thai Customs Department, calculations by Bank of Thailand

In order to study and compare the importance of exchange rates and other factors on exports, the analysis needs to be complemented by econometric models. The estimation results on the relationship between export volume and the Real Effective Exchange Rate (REER)[12/] show that the appreciation of REER reduces export volume in line with theories. Nevertheless, the elasticity of exports to exchange rate movements is found to be lower over time, suggesting a weaker link between the REER and export volume. In particular, **a 1 percent appreciation of the REER in the past would reduce export volume by approximately 0.6 percent[13/]. However, the elasticity now decreases to around 0.3 percent and becomes statistically insignificant during the past two years. Moreover, exchange rates have much less impact on export volume than income-related factors.**

The above findings are mainly attributed to a number of factors. **First, participation in global value chains (GVC)** in many countries is regarded by the literature in other countries as one of the main reasons explaining the reduced exchange rate effects on export volume over the recent periods. Second, **gradual adjustments of businesses** take place by enhancing value-added of products, which in turn strengthen the competitiveness of goods sold. Third, **greater use of regional currencies and the baht to settle trade transactions** by exporters in CLMV and Chinese markets secure their revenue in baht terms from U.S. dollar volatilities. This, therefore, helps mitigate the impact of exchange rates on export volume, since risks from the excessive reliance on the U.S. dollar are diversified away, thereby enabling more efficient management of revenue.

[12/] The estimate is from a short-term equation in the error correction model $\%\Delta qx\_sa_t = f(\%\Delta REER_t, \%\Delta tpgdp_t, dummy\_flood_t, dummy\_crisis_t, \%\Delta ECM_{t-1})$, exploiting quarterly data during 2000Q1 and 2017Q4. Literature in other countries often use the REER, as opposed to bilateral exchange rates vis-à-vis the U.S. dollar, to reflect actual competitiveness against all trading partners.

[13/] Estimated using quarterly data between 2000-2012

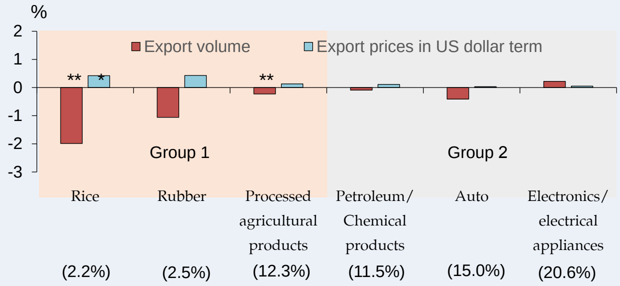
Regarding the relationship between exchange rates and export prices, **a 1 percent strengthening of the baht against the U.S. dollar is found to increase export prices in US dollar terms by only 0.3[14/] percent on average. This result suggests limited ability to pass on costs of baht appreciation to export prices in order to maintain revenue in baht terms** (incomplete exchange rate pass-through) and implies that export revenue in baht terms per a unit of goods will fall by approximately 0.7 percent. Hence, overall adverse consequences faced by exporters stem from converting their revenue to baht terms, rather than from losing their competitiveness.

According to the analyses, **the effects of exchange rates differ across industries** (Chart 2) and can be classified into two groups as follows.

1st Group: Businesses, whose export volume faces a large, adverse impact from baht appreciation, mostly belong to industries with low value-added export products such as rice and processed agricultural products. These products are less sophisticated and hence can be easily substituted. Yet, their exporters tend to raise prices to fix revenue in baht terms, while importers abroad can promptly switch to order products from competitors instead. The strengthening baht, therefore, has a large impact on export volume. Nevertheless, in the case of rubber, despite being a low value-added good given that Thailand exports primary rubber products, exchange rates unexpectedly yield insignificant effects on both export prices and volume. This is owing to the fact that export prices of rubber are determined by global prices in the futures market, as opposed to rice that is traded over the counter (OTC), i.e., directly between buyers and sellers.

Chart 2 The effects of exchange rates on exports differ across industries

Sensitivity to exchange rates when exchange rates moves by one percent (data from 2002 to 2018)



Source: Thai Customs Department, calculations by the BOT

Note: (1) Price equation $\%\Delta px_t = f(\%\Delta bilatFX_t, \%\Delta other_t)$

(2) Volume equation $\%\Delta qx\_sa_t = f(\%\Delta reer_t, \%\Delta tpgdp_t, \%\Delta other_t)$

(3) * and ** indicate statistical significance levels at 10% and 5%, respectively

(4) Petroleum related consists of chemical products, petrochemical products, and petroleum products.

(5) Numbers in ( ) denote shares to total exports value in 2017

2nd Group: Businesses whose export prices and volume are not significantly affected by exchange rates. This group consists of (1) industries with high participation in GVC, including high-technology goods produced by large multinational corporations (MNCs) such as electronics, electrical appliances, and automobiles, where their raw materials contain high proportion of import content or a natural hedge[15/]; (2) businesses that export goods whose prices move along with crude oil prices such as petroleum products, chemicals and petrochemicals. These goods are commodities and their prices vary according to the global market. Hence, they are largely influenced by sentiment towards the U.S. dollar relative to major currencies rather than by the baht itself.

Exports of products from the second group amount to 40 percent of total exports in 2017 and will likely continue to rise, particularly for industries with high participation in GVC. At the same time, the share of products in the 1st group is only 17 percent. Hence, the overall impact of exchange rates on export volume is expected to decline.

[14/] The estimate is from a short-term equation in the error correction model $\%\Delta px_t = f(\%\Delta USDTHB_t, \%\Delta dubai_t, \%\Delta ECM_{t-1})$, exploiting quarterly data during 2000Q1 and 2017Q4.

[15/] Firms with a natural hedge are those with similar import and export shares, or matching shares of revenue and expenditure flows in foreign currencies. These help limit the impact from converting revenue in foreign-currency terms to baht terms.

1.2 The relationship between exchange rates and imports

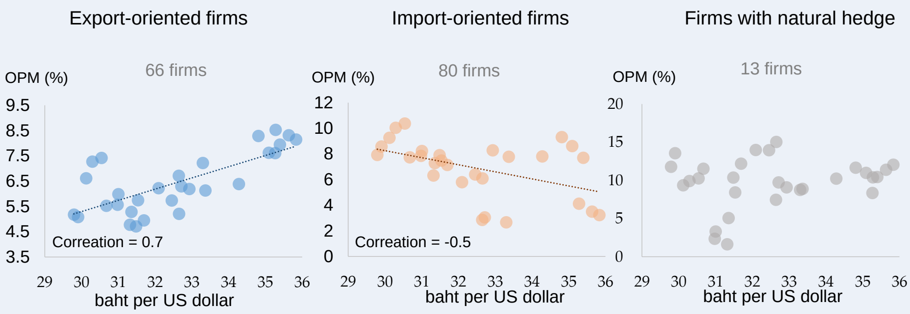
Theoretically, appreciation of the baht should lower import prices in baht terms, which in turn leads to greater demand for imports. Nevertheless, the estimates in Thailand's case show that, similar to export volume, **exchange rate appreciation does not have statistically significant effects on overall import volume (export elasticity to the REER stands at around 0.3 percent[16/]). Import volume is in fact driven by demand factors, both domestic consumption and investment, as well as export volume, rather than by exchange rates.** This is because 80 percent of Thailand's imported goods are capital goods, raw materials and intermediate goods that Thailand can neither produce nor produce enough to serve their demand. These include large industrial machinery which requires sophisticated technology, crude oil, steel and metals, and electronic parts linked with production process under the GVC[17/]. Meanwhile, the study of relationship between exchange rates and import prices shows that a **1 percent appreciation of the baht against the U.S. dollar results in an increase of import prices in U.S. dollar terms on average by around 0.2 percent.** This is owing to upward adjustments of selling prices by trading partners abroad to maintain their revenue in local-currency terms. This often occurs when the U.S. dollar weakens and implies that **import costs in baht terms per a unit of goods faced by Thai importers will decrease by approximately 0.8 percent**.

1.3 The relationship between exchange rates and corporate profits

Exchange rates yield varying effects on prices and quantity of exports and imports. As a result, their impact on corporate sector profitability differs across characteristics and types of businesses. The analysis considers the relationship between exchange rates and an operating profit margin (OPM) of firms listed on the Stock Exchange of Thailand (SET) which are classified into[18/] (1) the export-oriented group whose main revenue is derived from exports, (2) the import-oriented group whose main operating expenses are due to imports, and (3) the group with a natural hedge (Figure 3). The findings are as follows.

Chart 3 Exchange rate movements correlates with operating profit margins of firms according to business characteristics.

Exchange rates and profitability of firms listed on the Stock Exchange of Thailand



Note: The dots in each figures display average OPMs of businesses for each time period based on quarterly data during Q4/2011 – Q1/2018

Source: The Stock Exchange of Thailand and Thai Customs Department, calculations by Bank of Thailand

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16/ The estimate is from a short-term equation in the error correction model $\%\Delta qm\_sa_t = f(\%\Delta REER_t, \%\Delta domdemand\_sa_t, \%\Delta qx\_sa_t, \%\Delta ECM_{t-1})$, exploiting quarterly data during 2000Q1 and 2017Q4.

17/ Literature in other countries suggest that, in counties with extensive links with GVC, the exchange rates neither affect volume of exports nor imports.

18/ This study classifies firms into export-oriented, import-oriented and natural-hedge firms by the ratio [insert formula], where X denotes export and import value, respectively. Such ratio lies between -1 and 1. The ratio close to -1, 1, 0 implies that firms are import-oriented, export-oriented or have a natural hedge, respectively. The study focuses only on businesses with more-than-30 percent share of exports to total revenue, or with more-than-30 percent share of imports to total production costs of goods and services.

(1) **An operating profit margin of export-oriented corporates is positively correlated with the baht value. That is, their margin declines whenever the baht appreciates.** The finding is in line the conclusion from section 1.1, which shows that export-oriented firms are affected mainly through the conversion of their revenue into baht terms. Moreover, the effects of the baht value on a profit margin also depend on the prevalence of transactions to prevent exchange rate risks. It is found that industries with limited transactions on exchange rate risk management, such as textile, rubber and plastics, and machinery and equipment manufacturing industries, experience a greater impact than other industries.

(2) **For import-oriented firms whose main revenue is derived from domestic sales of goods and services, their profit margin varies negatively with the baht value. In other words, the margin rises as the baht strengthens**. Thanks to baht appreciation, such businesses can save on import costs of raw materials, capital goods and consumer goods. This in turn helps facilitate consumption and investment, particularly for investment with extensive import content. Following baht appreciation, sectors with significantly improved profit margin include wholesale and retail businesses. This is due to their business feature that serves as an intermediary to purchase goods in foreign currency and sell them locally in baht terms. Other industries include energy and electronics industries.

(3) **For firms with a natural hedge, their profit margin is found to be uncorrelated with exchange rates**, as their revenue and expenses in foreign currencies can be partly balanced out, thus limiting the exchange rate impact. **For those export-oriented corporates that are not listed on SET, since they are mostly MNCs, the correlation between exchange rates and their profit margin is also expected to be low.** Based on interviews with businesses, most MNCs have natural hedge and tend to highly and consistently engage in financial transactions that prevent exchange rate risks in compliance with their parent company's policies, or else the parent company may commit such risk-management transactions on behalf of them.

2. The impact of exchange rates on the Thai economy: the household sector

2.1 The relationship between exchange rates and household wage, salary and earnings

The relationship between household earnings and exchange rates exists if households have affiliations with businesses affected by exchange rates through import or export channels, either as business owners or as employees whose earnings are derived from wage and salary. This is because firms may reduce their production costs by cutting wages whenever their profits or revenue are adversely affected by exchange rates either from declines in export volume or revenue in baht terms. The analysis in this part will focus on the relationship between exchange rates and household earnings across business sectors that can supplement the results found in the previous section[19/].

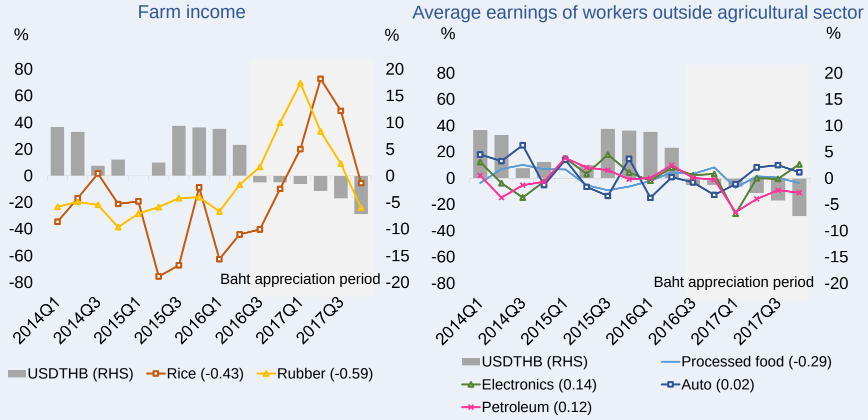
Having been on an appreciating trend since 2014, the recent baht movements are compared with household earnings, which can be classified into two groups: (1) agricultural

[19/] This study considers the relationship between exchange rates and average earnings, as opposed to employment, since Thailand's employment is, to a large extent, influenced by various structural factors. These include seasonal labor movements across agricultural and non-agricultural sectors, greater adoption of automation technology in production line, and declining labor force due to aging society.

household income and (2) average hourly earnings of non-agricultural employees[20/]. **The correlation between earnings and exchange rates is found to be weak for both groups** (Chart 4). In particular, despite the rising baht value since mid-2016, farm income still experienced high growth, while non-farm income did not show any clear relationship with exchange rates in any business sector. Furthermore, **considering a correlation coefficient between earnings growth in each sector and exchange rates since 2006, no single sector records a positive coefficient that is larger than 0.3. The result suggests a limited impact of exchange rate movements on wages.** This is attributed to the fact that, first, agricultural income usually depends on demand and supply in the global market which vary more with other factors, particularly weather conditions. For instance, droughts and floods at times affected rice and rubber, respectively. Second, other non-agricultural industries face a limited impact from exchange rates according to the analysis shown in section 1.1. Furthermore, some businesses have altered their employment patterns owing to structural changes in the labor market, especially after the minimum wage increase to 300 baht in 2013. The move has induced automobile businesses to reduce temporary workers in times when foreign demand drops. Processed food businesses have switched to hire daily workers whose earnings per hour are lower by half. In addition, the production within electronic industries has become less labor intensive due to the adoption of automation technology. Although the baht steadily weakened, growth of labor earnings did not pick up much as reflected in the low, despite being positive, correlation in certain industries. Moreover, structural issues in the labor market can explain why Thai economic recovery over the recent periods that are driven by export growth is yet to transmit clear and positive spillovers on employment. Therefore, **it may be concluded that the recent baht appreciation did not significantly influence household income but did have a greater impact on corporate profits.**

Chart 4 The correlation between household income and exchange rates is found to be weak.

Exchange rate movements and income of each industries compared with the same period last year



Note: Numbers in ( ) denote correlation values between growth of hourly wages and exchange rates based on quarterly data during 2006-2017, where the positive value indicates the baht depreciation against the US dollar.
Source: The Labor Force Survey, the Ministry of Labor, and calculations by Bank of Thailand

[20/] The data on average earnings per hour of non-agricultural workers are obtained from the Labor Force Survey. Meanwhile, income from sales of agricultural products, i.e., rice and rubber, is calculated from their prices and volume, which should reflect farmers' overall income.

2.2 The relationship between exchange rates and household expenditure

The impact of exchange rates on costs of living can be unveiled from the relationship between exchange rate movements and inflation, where the former affects the latter through altering costs of goods. For example, if the baht depreciates, import costs in baht terms will increase. Firms will, therefore, have incentives to pass such burden to consumers by raising their prices to maintain their profit margin. However, **firms' domestic price setting may be influenced by factors other than exchange rates**, such as costs of price adjustment, costs of other production factors as well as demand for goods. This again differs across product categories. In addition, firms may encounter constraints on their price adjustments, such as the influence from price policies of product owners and global market prices, as well as intensified competition among firms. Therefore, the assessment of the relationship in this part will make use of econometric models across major product categories in the inflation basket consisting of energy, fresh food and core inflation (i.e., excluding energy and fresh food) categories. A positive and statistically significant coefficient of exchange rates[21/] or the elasticity will reflect the exchange rate impact on prices of each product category.

The results show that exchange rates mainly affect energy prices (Chart 5), particularly domestic retail oil prices. This is because retail oil production relies on imported raw material to a larger extent compared with other products. In addition, the government allows pricing mechanism in the domestic retail market to reflect costs which are driven by global market prices. This is particularly the case for pricing of oil containing benzene such as gasohol 95 and 91. This results in a greater pass-through of the exchange rate impact onto retail oil prices relative to other products. Nevertheless, given the relatively small share of energy products in the inflation basket, **the elasticity of headline inflation to exchange rates is not large**. That is, if the baht strengthens by 1 percent against the U.S. dollar, headline inflation will decline by 0.03 percent. While exchange rates do not have a large impact on inflation, **the persistently appreciating baht in the recent periods helped mitigate the rise in households' overall costs of living to certain extent**. In the previous year (2017Q1-2018Q1), the baht strengthened by around 11 percent[22/] against the U.S. dollar, prompting the decline of Thailand's headline inflation by approximately 0.3 percent (Chart 6).

Chart 5 The impact of exchange rates on consumer price index by major product categories in the case when exchange rate appreciates by one percent

	Weights in the inflation basket	Average effects (%)
Energy	11.7	-0.28**
Core (Excl. government measures)	72.6	-0.01
Raw food	15.7	-0.07
Headline inflation[1/]	100	-0.03

Note: * and ** indicate statistical sigficance levels at 10% and 5%, respectively
[1/] includes only product categories with statistical significant correlations such as energy

Equations: $\%\Delta core\_nomeasure_t = f(\%\Delta core_{t-1}, \%\Delta bilatFX_t, \text{output gap}_t, \%\Delta dubai_t, \%\Delta farmprice_t)$

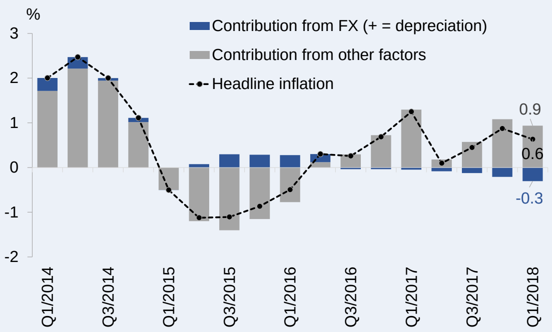
$\%\Delta freshfoodprice_t = f(\%\Delta bilatFX_t, \%\Delta farmprice_t)$

$\%\Delta energyprice_t = f(\%\Delta bilatFX_t, \%\Delta dubai_t)$

Source: The Ministry of Commerce and calculations by Bank of Thailand

Chart 6 Exchange rate movements partly helps slow down the pace of inflation growth in the recent periods

Contributions to headline inflation



Source: The Ministry of Commerce and calculations by Bank of Thailand

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[21/] Exchange rates in the model are the bilateral baht-U.S. dollar exchange rates since 80 percent of all import and export transactions made by Thai importers and exporters are settled in U.S. dollars in their settlement.

[22/] Exchange rates in the first quarter of 2017 and 2018 averaged at 35.40 and 31.53 baht per U.S. dollar, respectively.

3. The net impact of exchange rates on the Thai economy

Given the aforementioned results of the relationship between exchange rates and various economic sectors, effects of **baht appreciation are twofold with both positive and negative consequences on the overall economy**. Agents impacted by the baht appreciation can be classified into three groups. They include, first, **those adversely affected by the baht appreciation** are export-oriented firms. The strengthening baht results in a decline in their revenue in baht terms, and hence affects their profit margin. Among those who experience a greater impact than others are certain export-oriented firms that produce low value-added goods such as rice and processed agricultural products as these products can be easily substituted. Second, **those who benefit from the baht appreciation** include import-oriented firms whose expenses in baht terms fall as the baht value rises, and thus boosting their profit margin. Such businesses are in the wholesale and retail sectors. Furthermore, households do not face any large adverse effects, but instead receive benefits from a reduction in the cost of living through falling domestic retail oil prices. Third, **those unaffected by baht appreciation** are export-oriented firms whose product prices vary with crude oil prices, and export firms with a natural hedge. The latter includes, for example, industries with active participation in GVC such as electronics since their raw materials consist of high import content as well as their active management of exchange rate risks.

The impact assessment in this article mainly relies on single-equation models in order to separately identify the effects of exchange rates on different transmission channels. The sectoral assessments reveal that the baht appreciation has limited consequences on the Thai economy. The results are well in line with the estimates from a macroeconomic model that consists of a number of variables from the economic system, which suggest that **movements in exchange rates do not have much influence on overall economic growth**[23/]. The analysis hence arrives at the following policy implications:

1. **Monetary policy conduct that aims to weaken the exchange rates does not help stimulate overall export volume. Its positive impact will be limited among certain export goods.** Furthermore, the implementation of exchange rate policies to raise exports with an aim to improve employment, labor earnings and consumption may have weaker effects than in the past. This is because the positive spillovers of export growth on these variables have become limited, partly owing to a greater influence from structural factors.

2. **Measures to slow down the pace of exchange rate appreciation have a wide-ranging impact on the economy as well as several consequences.** These range from purchases of foreign currencies by the central bank to perform currency intervention to low-interest-rate policies, resulting in both winners and losers in the economy. In addition, **the impact on other policies should also be taken into consideration** For instance, the accumulation of financial stability risks following the prolonged low interest rate policy may derail public confidence and the effectiveness of central bank's policies.

3. **To mitigate the impact of baht appreciation, well-targeted policy directed at the significantly affected group is recommended. This should provide a more sustainable solution since an exchange rate weakening policy can only solve problems in the short run.** Over the recent periods, the Bank of Thailand has implemented several measures to pre-empt and mitigate the impact from volatile exchange rates. These include, promoting management of exchange rate risks by firms, providing knowledge and understanding of financial instruments to

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[23/] The sensitivity results from the macroeconomic model suggest that a 1-percent appreciation of the REER leads to a decline in economic growth of around 0.02 percent in 1 year.

businesses, i.e., importers and exporters, as well as promoting the use of regional currencies in settling international trade transactions instead of the U.S. dollar. The latter will help curb risks associated with a sole reliance on one major currency and improve resilience of the business sector. In the long run, firms should reap benefits of baht appreciation by importing raw materials and investing in machinery that cannot be produced domestically. At the same time, they should strive to improve their production efficiency or add value to products that will likely be demanded. For example, chemical-free organic rice can be exported at a higher price than normal rice. Rice and other agricultural products can be tailor-made for specific groups and customized products such as elderly patients, cosmetics and degradable plastic resin. These will help reduce the vulnerability of the economy amid exchange rate volatilities, while also enhancing the country's competitiveness in the long run.

4. Appendix

4.1 Table

Thai Economy Dashboard

Percent	2559	2560	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2018 Q1
GDP growth	3.3	3.9	3.4	3.9	4.3	4.0	4.8
Production							
Agriculture	-2.5	6.2	6.0	15.9	9.7	-1.3	6.5
Non-agriculture	3.8	3.7	3.2	3.0	4.0	4.7	4.7
Manufacturing	2.3	2.6	1.9	1.0	4.2	3.4	3.7
Construction	8.6	-2.3	3.2	-5.7	-1.6	-5.3	1.2
Wholesales and retail trade	5.3	6.3	5.9	6.0	6.4	6.9	7.0
Hotels and restaurants	9.9	8.5	5.1	7.0	6.9	15.3	12.8
Transport, storage, and communication	4.1	7.3	5.3	7.8	7.4	8.8	7.1
Financial intermediation	6.5	4.8	4.8	6.3	4.6	3.6	3.5
Real estate, renting, and business activities	3.2	4.6	3.8	4.2	4.7	5.8	4.5
Expenditure							
Domestic demand	2.8	2.1	2.0	1.8	2.5	2.0	3.3
Private consumption	3.0	3.2	3.1	2.9	3.4	3.4	3.6
Private investment	0.5	1.7	-1.1	3.0	2.5	2.4	3.1
Government consumption	2.2	0.5	-0.7	0.4	1.8	0.2	1.9
Public investment	9.5	-1.2	10.0	-6.9	-1.6	-6.0	4.0
Imports of goods and services	-1.0	6.8	5.9	7.2	6.5	7.5	9.0
imports of goods	-2.3	8.5	7.3	9.2	9.2	8.3	9.3
imports of services	4.6	-0.3	0.4	-1.0	-5.0	4.0	7.8
Exports of goods and services	2.8	5.5	2.7	5.1	6.9	7.4	6.0
exports of goods	0.3	5.6	2.8	4.9	8.2	6.6	4.7
exports of services	11.5	5.1	2.5	5.7	2.6	9.9	9.4
Trade balance (billion, U.S. dollars)	36.5	31.9	8.8	6.4	10.1	6.5	6.6
Current account (billion, U.S. dollars)	48.2	48.1	15.0	7.8	13.9	11.3	17.1
Financial account (billion, U.S. dollars)	-21.0	-18.2	-7.0	-5.7	0.5	-6.0	-0.7
International reserves (billion, U.S. dollars)	171.9	202.6	180.9	185.6	199.3	202.6	215.6
Unemployment rate (%)	1.0	1.2	1.2	1.2	1.2	1.1	1.2
Unemployment rate, seasonally-adjusted (%)	n.a.	n.a.	1.1	1.1	1.2	1.3	1.2

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

Financial Stability Dashboard

Indicators	2016	2017	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Apr	2018 May
1. Financial market sector									
Bond market									
Bond spread (10 years - 2 years)	0.6	1.1	1.1	1.1	1.0	1.0	1.2	1.2	1.1
Equity market									
SET index (end of period)	1,542.9	1,753.7	1,575.1	1,574.7	1,673.2	1,753.7	1,776.3	1,780.1	1,727.0
Actual volatility of SET index[1/]	14.2	6.5	7.0	4.8	5.8	7.9	9.4	13.3	9.7
Price to Earnings ratio (P/E ratio) (times)	18.6	19.1	17.4	16.3	17.9	19.1	18.3	18.3	17.6
Exchange rate market									
Actual volatility of Thai baht (%annualized)[2/]	4.4	3.3	3.5	3.9	2.9	2.8	4.6	3.4	4.8
Nominal Effective Exchange Rate (NEER)	106.2	110.6	108.7	109.8	111.2	112.9	114.8	115.8	115.4
Real Effective Exchange Rate (REER)	100.6	103.6	102.7	102.8	104.2	105.7	106.3	107.6	107.1
2. Financial institution sector[3/]									
Minimum Lending Rate (MLR)[4/]	6.33	6.28	6.33	6.28	6.28	6.28	6.28	6.28	6.28
12-month fixed deposit rate[4/]	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
Capital adequacy									
Capital funds / Risk-weighted asset (%)	18.0	18.2	17.8	17.9	18.4	18.2	18.1	18.3	n.a.
Earning and profitability									
Net profit (billion, Thai baht)	199.0	187.3	51.2	49.0	46.5	40.8	50.1	n.a.	n.a.
Return on assets (ROA) (times)	1.1	1.1	1.2	1.1	1.0	1.1	1.1	n.a.	n.a.
Liquidity									
Loan to Deposit and B/E (%)	96.3	96.08	95.7	96.5	96.4	96.1	95	95.1	n.a.
3. Household sector									
Household debt to GDP (%)	79.3	78.0	78.4	78.0	77.8	78.0	n.a.	n.a.	n.a.
Financial assets to debt (times)	2.7	n.a.	2.7	2.8	2.7	n.a.	n.a.	n.a.	n.a.
Non-Performing Loans (NPLs) of commercial banks (%)									
Consumer loans	2.7	2.7	2.8	2.7	2.7	2.7	2.8	n.a.	n.a.
Housing loans	2.9	3.2	3.2	3.1	3.3	3.2	3.4	n.a.	n.a.
Auto leasing	1.8	1.6	1.6	1.7	1.6	1.6	1.5	n.a.	n.a.
Credit cards	3.7	2.6	4.1	3.4	2.8	2.6	3.2	n.a.	n.a.
Other personal loans	2.9	2.5	2.8	2.6	2.7	2.5	2.7	n.a.	n.a.
4. Non-financial corporate sector[5/]									
Operating profit margin (OPM) (%)	8.2	8.3	8.5	7.3	8.5	8.1	7.9	n.a.	n.a.
Debt to Equity ratio (D/E ratio) (times)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	n.a.	n.a.
Interest coverage ratio (ICR) (times)	6.5	6.6	6.2	6.0	6.4	7.8	6.9	n.a.	n.a.
Current ratio (times)	1.6	1.7	1.7	1.6	1.6	1.7	1.7	n.a.	n.a.
Non-Performing Loans (NPLs) of commercial banks (%)									
Large businesses	1.5	1.8	1.6	1.8	1.7	1.8	1.7	1.6	n.a.
SMEs	4.3	4.4	4.5	4.4	4.6	4.4	4.5	4.7	n.a.

Note:

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

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

[3/] Based on data of all commercial banks

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

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

Financial Stability Dashboard (continue)

Indicators	2016	2017	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2018 Q1	2018 Apr	2018 May
5. Real estate sector									
Number of approved mortgages from commercial banks (Bangkok and Vicinity) (units)									
Total	61,452	62,664	12,244	15,086	16,859	18,476	15,011	4,333	n.a.
Single-detached and semi-detached houses	13,409	13,907	2,802	3,544	3,774	3,787	3,526	876	n.a.
Townhouses and commercial buildings	20,187	20,536	4,315	4,947	5,604	5,670	5,167	1,355	n.a.
Condominiums	27,856	28,221	5,127	6,595	7,481	9,019	6,318	2,102	n.a.
Number of new housing units launched for sale (Bangkok and Vicinity) (units)									
Total	110,575	114,477	28,924	25,256	35,434	24,863	25,026	1,564	n.a.
Single-detached and semi-detached houses	19,433	14,280	2,968	2,830	4,874	3,608	3,758	307	n.a.
Townhouses and commercial buildings	32,792	36,571	11,183	7,665	9,831	7,892	6,032	233	n.a.
Condominiums	58,350	63,626	14,773	14,761	20,729	13,363	15,236	1,024	n.a.
Housing price index (2009 = 100)									
Single-detached houses (including land)	130.8	130.9	128.6	129.6	131.6	133.9	137.7	136.9	n.a.
Townhouses (including land)	137.6	141.2	138.3	140.0	142.6	143.7	145.9	147.1	n.a.
Condominiums	166.2	171.0	169.8	168.8	169.8	175.4	182.3	182.0	n.a.
Land	171.2	171.7	171.3	164.2	172.9	178.3	175.7	177.5	n.a.
6. Fiscal sector									
Public debt to GDP (%)	40.8	41.2	41.7	41.3	41.9	41.2	41.2	41.0	n.a.
7. External sector									
Current account balance to GDP (%)[6/]	11.7	10.8	13.8	7.1	12.1	9.3	13.3	n.a.	n.a.
External debt to GDP (%)[7/]	32.5	35.2	33.2	34.0	35.5	35.2	35.3	n.a.	n.a.
External debt (billion, U.S. dollars)	132.2	149.0	136.2	140.3	148.1	149.0	152.2	152.2	150.2
Short-term (%)	41.2	41.9	40.5	39.4	40.9	41.9	40.9	40.9	40.3
Long-term (%)	58.8	58.1	59.5	60.6	59.1	58.1	59.1	59.1	59.7
International reserves / Short-term external debt (times)	3.2	3.2	3.3	3.4	3.3	3.2	3.5	3.5	3.6

Note:

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

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

Table: Probability distribution of GDP growth forecast

Percent	2018			2019				2020
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
> 9	0	0	0	0	1	2	3	4
8-9	0	0	1	1	2	3	4	5
7-8	0	1	4	3	5	7	8	8
6-7	3	6	9	7	10	11	11	11
5-6	17	16	17	12	14	15	14	14
4-5	35	25	22	17	17	16	15	14
3-4	30	25	20	19	17	15	14	13
2-3	12	17	14	16	14	12	11	11
1-2	2	7	8	12	10	9	8	8
0-1	0	2	3	7	6	5	5	5
(-1)-0	0	0	1	3	3	3	3	3
(-2)-(-1)	0	0	0	1	1	1	1	2
(-3)-(-2)	0	0	0	0	0	0	1	1
< (-3)	0	0	0	0	0	0	0	0

Table: Probability distribution of headline inflation forecast

Percent	2018			2019				2020
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
> 4.0	0	0	0	2	2	2	3	3
3.5-4.0	0	0	1	2	2	2	3	3
3.0-3.5	0	2	2	4	4	4	4	4
2.5-3.0	2	6	5	7	6	6	7	6
2.0-2.5	11	13	8	10	9	8	9	9
1.5-2.0	26	19	13	12	11	10	11	10
1.0-1.5	29	20	15	12	12	12	11	11
0.5-1.0	20	17	15	12	12	12	11	11
0.0-0.5	9	12	13	11	11	11	10	10
(-0.5)-0.0	2	7	11	9	9	9	9	9
(-1.0)-(0.5)	0	3	7	7	8	8	7	7
(-1.5)-(1.0)	0	1	5	5	6	6	5	6
(-2.0)-(-1.5)	0	0	3	3	4	4	4	4
< -2.0	0	0	2	4	6	7	6	7

Table: Probability distribution of core inflation forecast

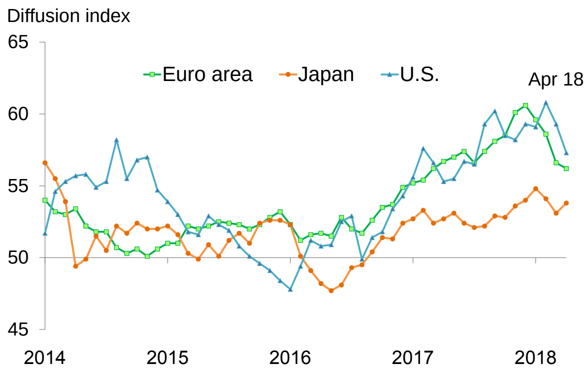
Percent	2018			2019				2020
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
> 4.0	0	0	0	0	0	0	0	0
3.5-4.0	0	0	0	0	0	0	0	0
3.0-3.5	0	0	0	0	0	0	0	0
2.5-3.0	0	0	0	0	0	1	1	2
2.0-2.5	0	0	0	2	3	4	5	6
1.5-2.0	0	2	4	9	10	11	13	14
1.0-1.5	12	20	19	22	22	22	22	21
0.5-1.0	62	45	34	28	26	25	24	23
0.0-0.5	24	27	27	22	21	20	19	17
(-0.5)-0.0	1	6	12	12	11	11	11	10
(-1.0)-(0.5)	0	0	3	4	4	5	5	5
(-1.5)-(1.0)	0	0	0	1	1	1	2	2
(-2.0)-(-1.5)	0	0	0	0	0	0	0	0
< -2.0	0	0	0	0	0	0	0	0

4.2 Data pack

Global Economy

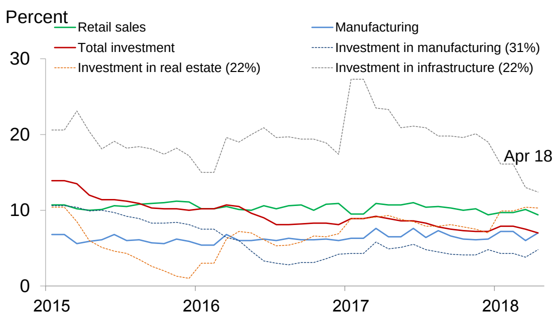
Thailand's trading partner economies continued to expand and remained a key driver of Thai exports going forward. Advanced economies temporarily slowed down in the first quarter due to unusually cold weather. Overall risks to the growth forecast tilted to the downside, in line with the previous assessment, owing to the U.S. trade protectionism measures, retaliation by major economies, and geopolitical risks. Meanwhile, headline inflation slowly trended up in tandem with oil prices, while inflation expectations remained stable. Most central banks maintained monetary policy accommodative stance. However, some central banks started to raise their policy rates following economic improvements while stabilizing financial market volatility.

Manufacturing Purchasing Manager Index



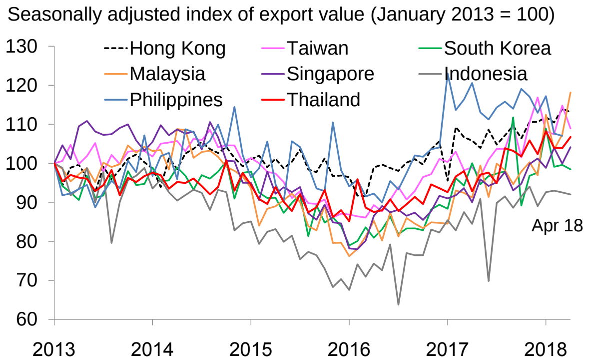
Sources: Bloomberg and Eurostat

China's economic indicators
(Change from same period last year)



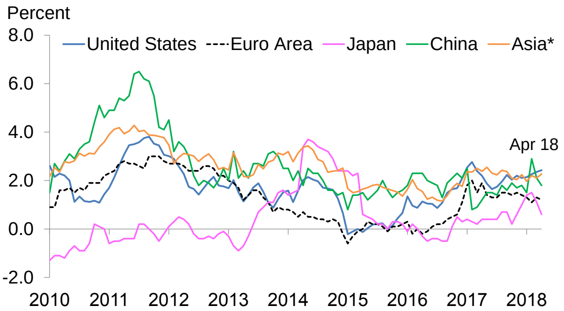
Note: ( ) denotes share to total investment
Source: CEIC

Asian exports



Source: CEIC

Inflation of Thailand's major trading partners

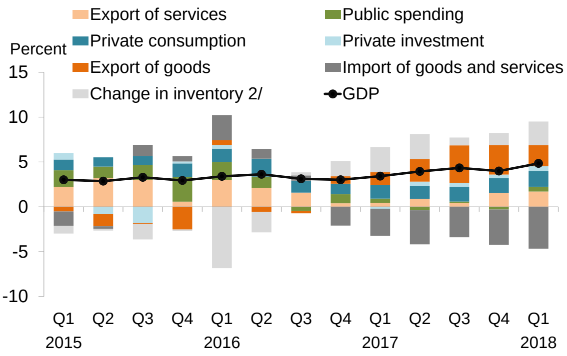


Note: * Average of headline inflation in Indonesia, South Korea, Malaysia, the Philippines, Singapore and Taiwan
Source: CEIC

Thai Economy

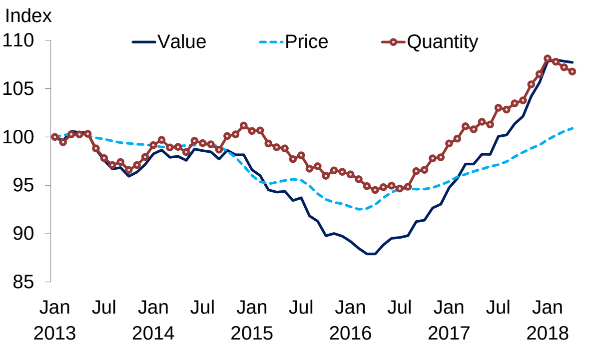
Economic growth continued to gain further traction, driven by growth in merchandise and services exports as well as gradual improvements in domestic demand. Private consumption continued to expand. Factors supporting overall purchasing power edged up somewhat albeit remaining weak. Private investment growth was more robust due to investment projects in the Eastern Economic Corridor (EEC) area and the Public-Private Partnership (PPP) which would boost investor confidence. Meanwhile, public expenditure would remain an economic driver.

Contribution to Thailand's GDP growth[1/]



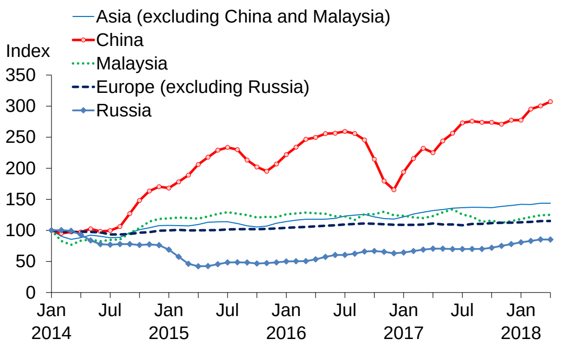
Note: [1/] Calculated by Chain Volume Measure method (CVM)
[2/] Change in inventory and statistical discrepancy
Source: Office of National Economic and Social Development Board, calculations by Bank of Thailand

Thai exports (excluding gold): value, price and quantity
(3-month moving average, seasonally adjusted; January 2013 = 100)



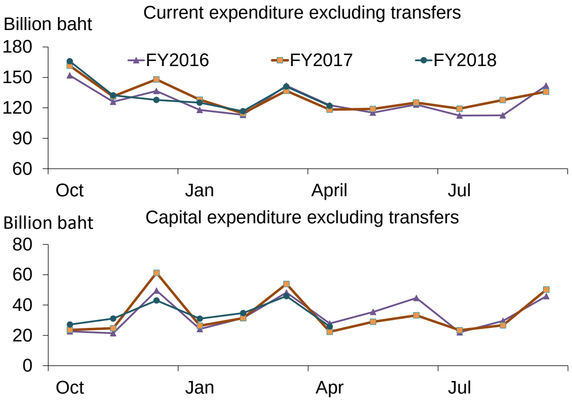
Source: Customs Department and Ministry of Commerce, calculations by Bank of Thailand

Index of foreign tourists classified by nationality
(3-month moving average, sessionally adjusted; January 2014 = 100)



Source: Department of Tourism

Public spending by central government

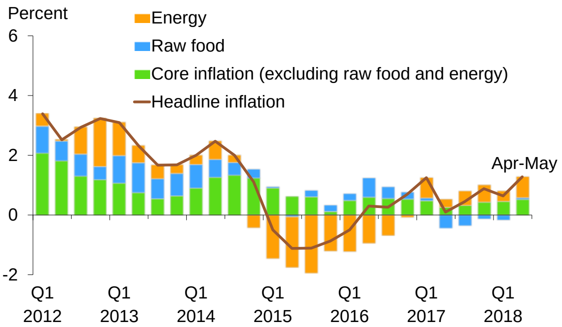


Source: Bureau of Budget, Fiscal Policy Office

Inflation

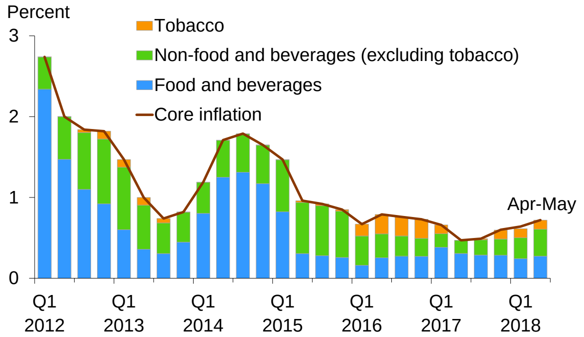
Headline inflation was expected to rise in line with energy prices. Meanwhile, core inflation would slowly increase in some categories following gradual domestic demand expansion. As a result, underlying inflation indicators edged up. Short-term inflation expectations of businesses and professional forecasters remained unchanged, while long-term (5-year-ahead) inflation expectations increased.

Contribution to headline inflation



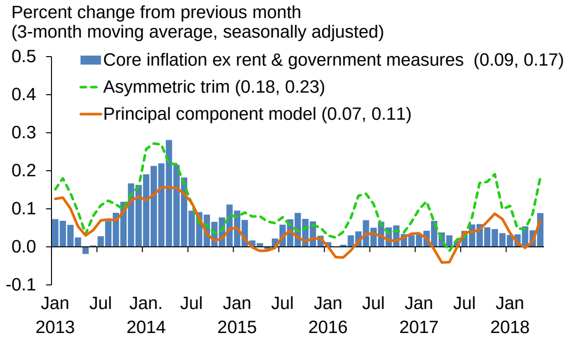
Source: Bureau of Trade and Economic Indices, Ministry of Commerce, calculations by Bank of Thailand

Contribution to core inflation



Source: Bureau of Trade and Economic Indices, Ministry of Commerce, calculations by Bank of Thailand

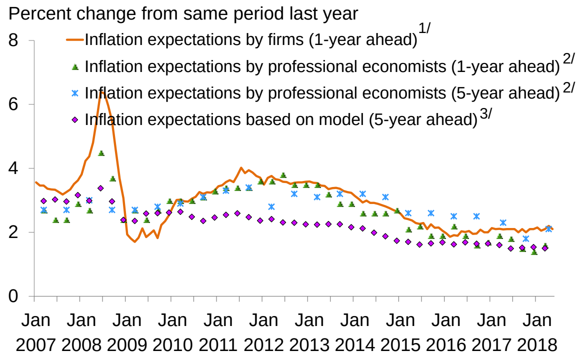
Underlying inflation indicators



Note: Data point indicated in () where the first value is %MoM (sa, 3mma) as of May 2018, while the second value is 2004 - 2014 average; Asymmetric trim excludes goods and services with most volatile price changes, removing the bottom 10 percentile and the top 6 percentile; Principal component model calculates changes in common statistical components that attribute price movements across categories of goods and services.

Source: Bureau of Trade and Economic Indices, Ministry of Commerce, calculations by Bank of Thailand

Inflation expectations

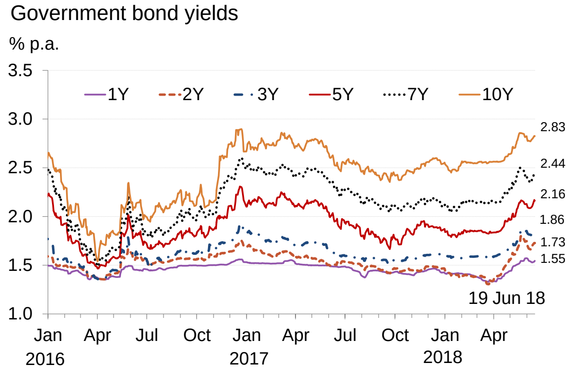


Source: [1] Business Sentiment Survey of Bank of Thailand (BSI)
[2] Asia Pacific Consensus Forecast
[3] Calculations based on macro-finance term structure model with bond yield and macroeconomic data

Financial Conditions

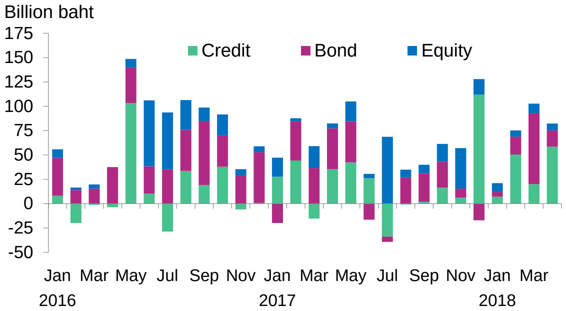
Short-term money market rates remained low, except for short-term government bond yields which rose toward the policy rate. This was due to greater supply of bonds and lower demand from foreign investors. Meanwhile, medium- and long-term government bond yields rose mainly due to external factors. Private credit accelerated on the back of both corporate and household sectors. The baht weakened against the U.S. dollar, as the dollar strengthened owing to better U.S. economic outlook relative to other countries and the Fed's signal to raise the federal funds rate in four times instead of three times in 2018. Moreover, investor had concerns on intensifying trade retaliations between the U.S. and major economies.

Movements in medium- and long-term government bond yields were driven mostly by external factors



Source: Thai Bond Market Association (Thai BMA)

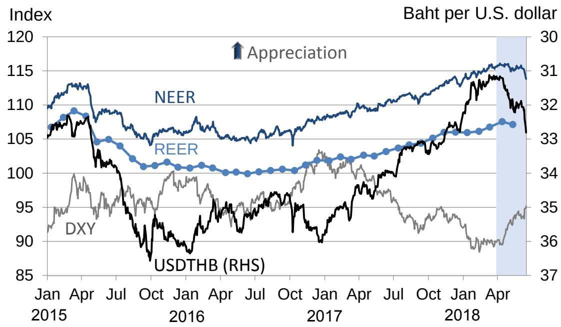
Total corporate financing by instrument*



Note: * Monthly change in outstanding of corporate loans (seasonally adjusted), corporate bonds excluding commercial banks, and newly issued equities.

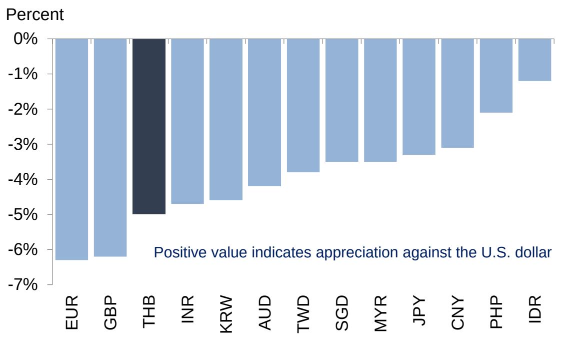
Sources: Bank of Thailand and Thai Bond Market Association (Thai BMA)

The Thai baht vis-a-vis U.S. dollar (USDTHB), Nominal Effective Exchange Rate (NEER), and the Dollar Index (DXY)



Source: Bank of Thailand and Reuters (data as of 19 June 2018)

Currency movements vis-a-vis the U.S. dollar (19 Jun 2018 compared to 30 Mar 18)

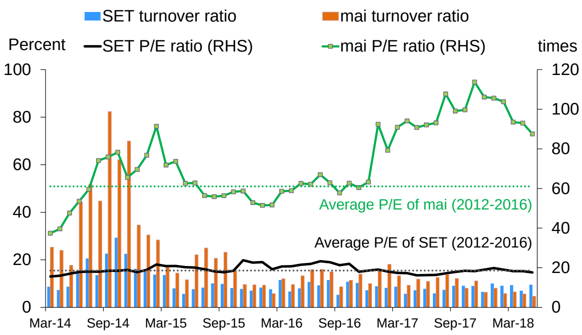


Source: Bank of Thailand and Reuters (data as of 19 June 2018)

Stability: financial markets

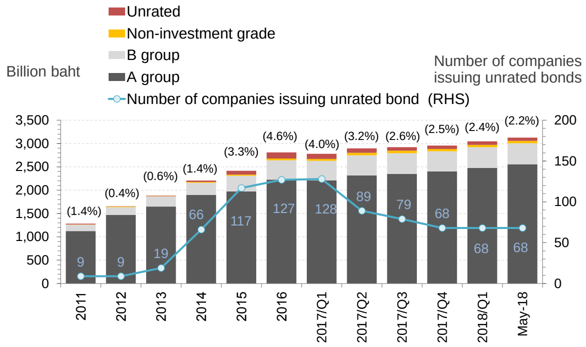
The price-to-earning (P/E) ratio of the Stock Exchange of Thailand (SET) stayed close to the historical average. The P/E ratio of the Market for Alternative Investment (mai) remained high due to poor performance of most businesses particularly the agricultural and services sectors which continued to incur losses. Meanwhile, new issuance of unrated bonds would slow down.

Current price-to-earning ratio and turnover ratio of SET and mai



Source: Stock Exchange of Thailand (as of May 2018)

Corporate bonds outstanding

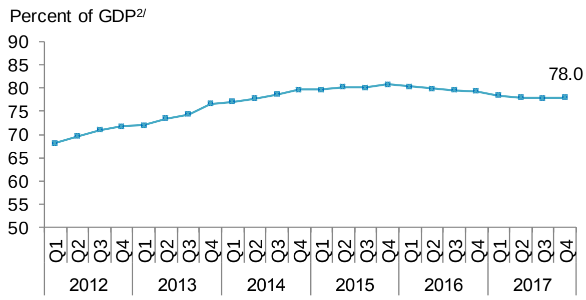


Note: ( ) represents percent of unrated bonds in total corporate bonds
Source: Thai Bond Market Association (Thai BMA)

Stability: household sector

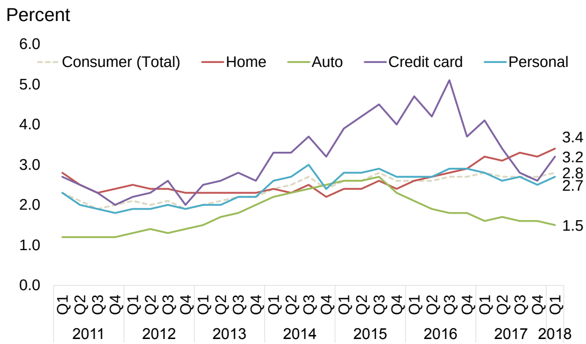
The ratio of household debt to GDP remained at a high level despite its continued declining since late 2015. Deleveraging was mostly concentrated among households in the Central and Southern regions. Meanwhile, economic growth that had yet to be broad-based partly exacerbated household debt serviceability, as reflected in a higher NPL in the household sector especially mortgage loans. This issue warranted monitoring going forward.

Household debt[1/]



Note: [1/] Loans to households by financial institutions
[2/] Calculated by averaging the 4 latest quarterly GDP
[3/] Household debt and GDP data are revised. This results in the different debt to GDP ratios compared to the last MPR.
Source: Bank of Thailand

Share of non-performing loans (NPL) in consumer loans, classified by loan type

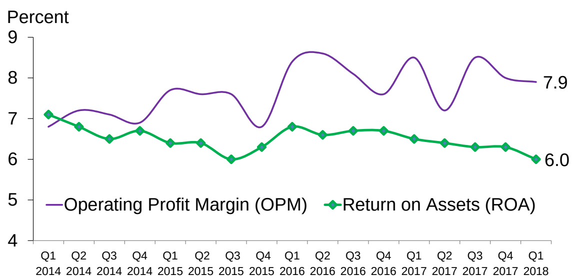


Source: Bank of Thailand

Stability: corporate sector

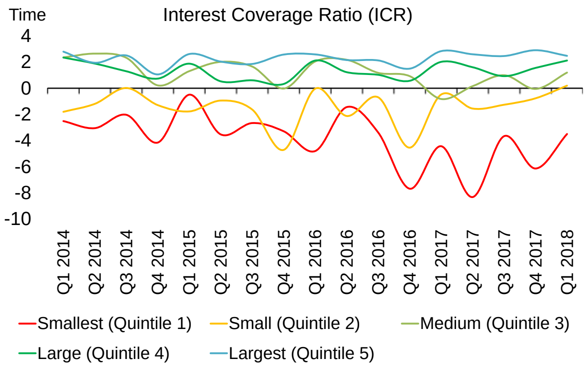
In the first quarter of 2018, overall stability in the corporate sector remained sound. Continued economic growth benefited financial positions of the corporate sector with the ratio of corporate debt to GDP steadily declining. However, improvements were still concentrated in large corporates while financial positions of smaller businesses remained vulnerable, particularly for those with continued losses. Debt serviceability of small enterprises and businesses in some sectors would warrant close monitoring.

Operating Profit Margin (OPM) and Return on Assets (ROA)*



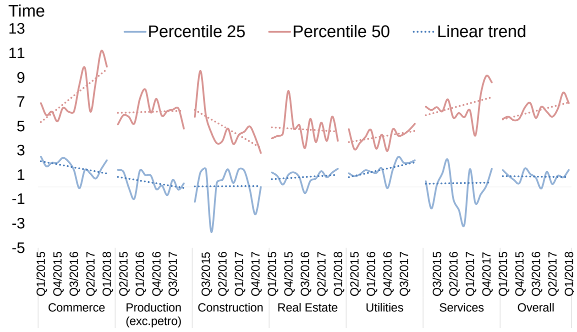
Note: * Median estimates; ROA is returns to average assets.
OPM is operating profits to total sales.
Source: Stock Exchange of Thailand, calculation by Bank of Thailand

Debt serviceability at 25th percentile of each group of firm size



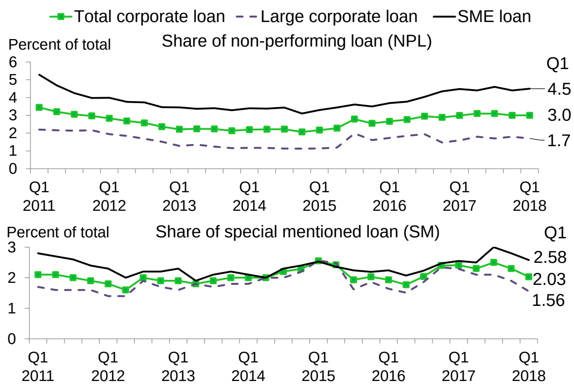
Source: Stock Exchange of Thailand, calculation by Bank of Thailand

Interest Coverage Ratio, classified by sectors



Note: * production exclude Petroleum and chemicals
Source: Stock Exchange of Thailand, calculation by Bank of Thailand

Loan quality of corporate sector

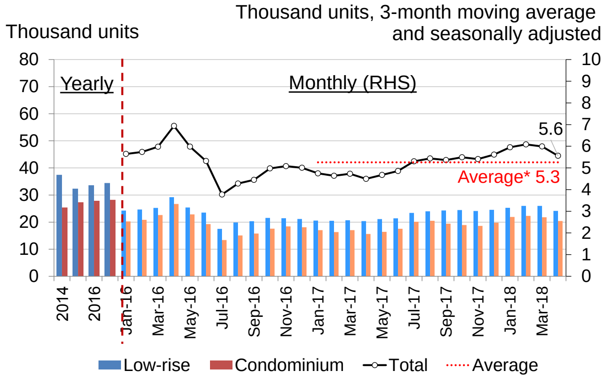


Source: Bank of Thailand

Stability: real estate

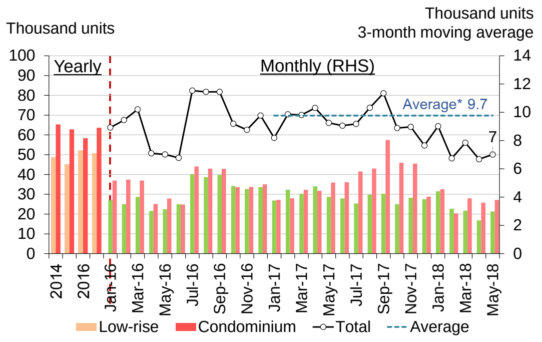
During the first four months of 2018, demand for residences expanded from the end of last year, as reflected in the number of residential units with newly approved loans that increased above the historical average. On the supply side, both newly opened low-rise and condominium residential units continued declining since last year as real estate developers focused on reducing an oversupply in the market. Meanwhile, prices of all real estate types increased from the end of 2017, consistent with higher land prices.

Residential units in Bangkok and its vicinity with approved mortgages by commercial banks



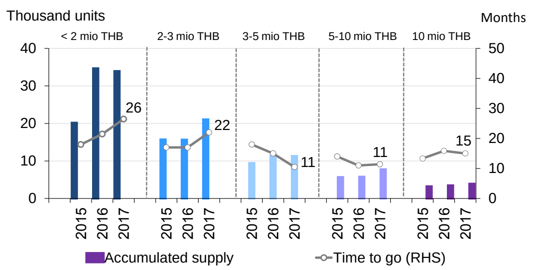
Note: *Average during 2011-2017, excluding periods with government's stimulus measures (November 2015-April 2016)
Source: Bank of Thailand

New residential projects launched in Bangkok and its vicinity



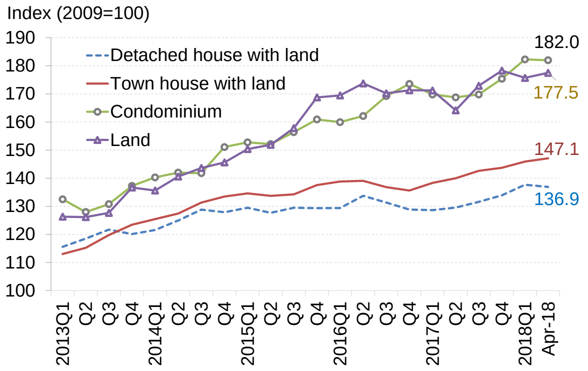
Source: Agency for Real Estate Affairs (AREA), calculation by Bank of Thailand
Note: *Average during 2011-2017, excluding the flood period (July - December 2011)

Condominium inventory in Bangkok and vicinity and 'Time to go'



Note: 'Time to go' is the time taken for all real estate inventory to be sold out at the average sales rate per month (since projects launched) given no additional supply.
Source: AREA and calculation by Bank of Thailand

Real estate price indices

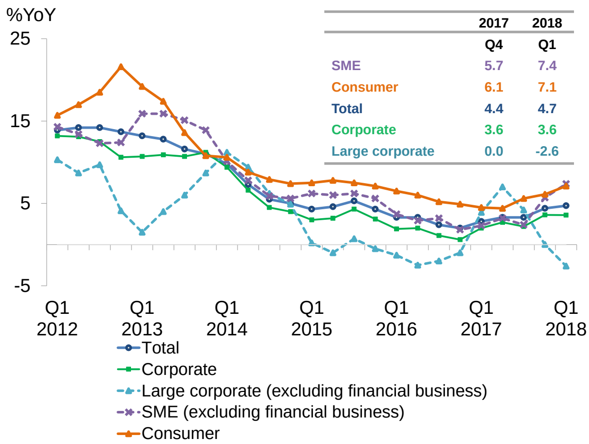


Source: Bank of Thailand

Stability: financial institutions

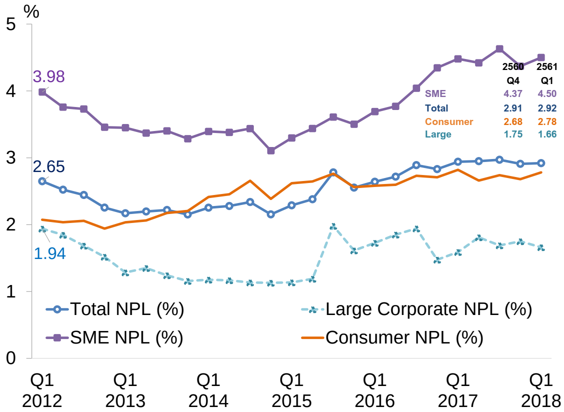
The financial system remained sound with high levels of provisions, capital buffers and liquidity, and would be able to accommodate credit growth going forward. In the first quarter of 2018, credit growth continued to expand from the end of the previous year. Business loans given to SMEs distributed to various sectors, while debt repayment was mostly made by large corporates. Consumer loans expanded for all purposes, especially for auto leasing purposes which continued to accelerate. Meanwhile, the overall NPL ratio remained stable. However, the NPL ratio increased for business loans extended to SMEs and those for consumer loans. This issue would warrant close monitoring.

Credit growth in the commercial bank system



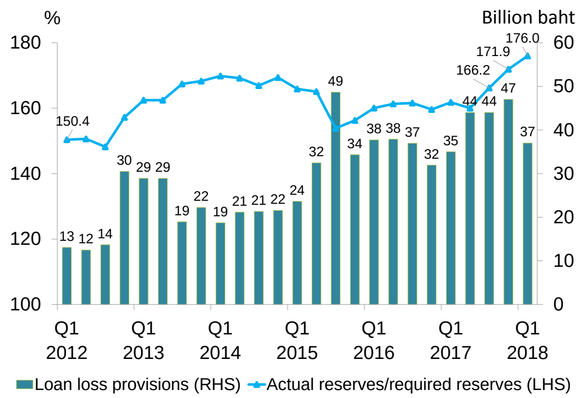
Source: Bank of Thailand

Non-performing loan (NPL)



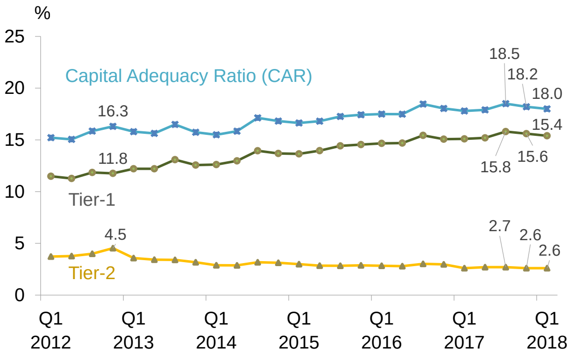
Source: Bank of Thailand

Provisions in commercial bank system



Source: Bank of Thailand

Capital buffers in commercial bank system

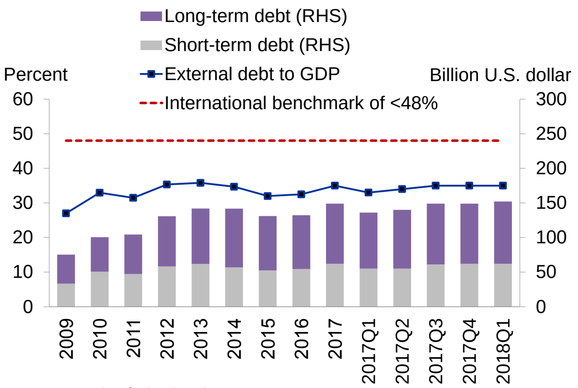


Source: Bank of Thailand

Stability: external position

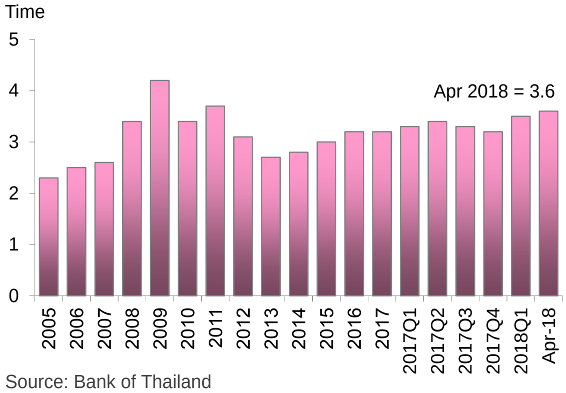
Thailand's external stability remained strong thanks to high liquidity of foreign currencies and sustained current account surplus. In addition, Thailand's debt repayment ability was adequate to cover short-term external debt. External debt was below an international benchmark and international reserves remained high.

Thailand's external debt



Source: Bank of Thailand

Reserve to short-term debt

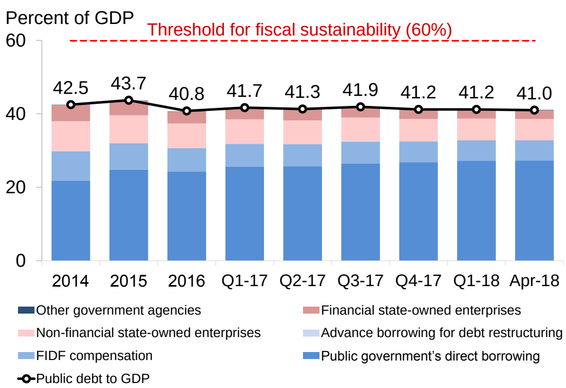


Source: Bank of Thailand

Stability: fiscal sector

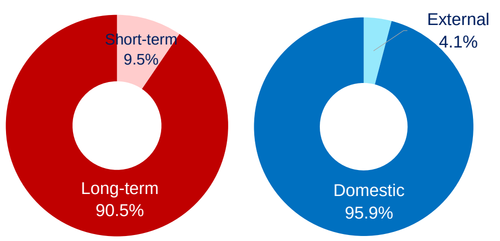
Fiscal stability remained sound. The ratio of public debt to GDP stayed below the sustainability threshold.

Public debt to GDP



Note: Calculated by GDP with Chain Volume Measure
Source: Public Debt Management Office

Outstanding debt as of April 2018



Note: Share of short-term and long-term debt calculated from remaining duration until maturity
Source: Public Debt Management Office

Pursuing Sustainable
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