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Monetary Policy Report (June 2021)

Bank of Korea

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Monetary Policy Report

2021. 6

BANK OF KOREA

Bank of Korea Mid- and Long-term Strategic Plan (BOK 2030)

- **Vision** — **The Bank of Korea**
  : Taking the lead in stabilizing and developing the national economy

- **Strategic Directions**

Agility	Pursue Innovation in a Flexible and Swift Manner
Collaboration	Bolster Synergy Through Collaboration
Expertise	Reinforce Policy and Research Capability

BANK OF KOREA

Monetary Policy Report

2021. 6

The Bank of Korea sets and implements its monetary and credit policies in order to contribute to the sound development of the national economy by pursuing price stability, and in the process pays attention to financial stability as well.

The Bank of Korea Act stipulates that the Bank of Korea, to fulfill its accountability corresponding to these mandates, should compile at least twice each year a report on the implementation of its monetary and credit policies.

In line with this the Bank of Korea prepares the Monetary Policy Report, containing the details of and backgrounds to its monetary policy decisions, the future monetary policy directions, etc., four times per year, and submits it to the National Assembly.

This June 2021 Monetary Policy Report has been drawn up to cover the time period from after the Monetary Policy Board meeting for monetary policy decision-making in February 2021 through the date of the Monetary Policy Board meeting for monetary policy decision-making in May 2021.

We sincerely hope that this Monetary Policy Report will be of help in ensuring that the public well understands the Bank of Korea's monetary policy operations, and forms rational expectations concerning the future policy directions.

<Bank of Korea Act>

Article 96 (Reporting to National Assembly)

(1) The Bank of Korea shall prepare an assessment report on progress in implementing monetary and credit policies and macro-financial stability conditions at least twice every year and submit it to the National Assembly.

(2) The Governor shall attend a meeting and answer questions, when the National Assembly or any of its committees requests him/her to attend the meeting in connection with the report submitted pursuant to paragraph (1).

This Monetary Policy Report is published in accordance with the provision of Article 96 of the Bank of Korea Act, and upon the resolution of the Monetary Policy Board.

June 2021

Juyeol Lee

Lee, Juyeol

Governor

Bank of Korea

Monetary Policy Board

Chairman	Lee, Juyeol
Member	Koh, Seung Beom
Member	Lim, Jiwon
Member	Cho, Yoon-Je
Member	Suh, Young Kyung
Member	Joo, Sangyong
Member	Lee, Seungheon

General Principles of Monetary Policy Operation

The Bank of Korea Act stipulates the goal of monetary policy as follows: “The Bank shall contribute to the sound development of the national economy through ensuring price stability, while giving due consideration to financial stability in carrying out its monetary policy.” In order to enhance the transparency, predictability and effectiveness of monetary policy, the Bank will carry out its task by setting specific targets and objectives in accordance with this goal.

☐ **(Inflation targeting)** The Bank of Korea maintains a flexible inflation targeting system to effectively achieve price stability, which is the primary objective of monetary policy. The inflation target is currently set at 2% in terms of consumer price inflation (year-on-year).

- o **(Medium-term horizon)** Since consumer price inflation is affected not only by monetary policy but also by various other factors at home and abroad, the inflation target is meant to be achieved over a medium-term horizon, in consideration of price changes owing to transitory and irregular factors and of the lag in monetary policy transmission.

- o **(Forward-looking operation)** The Bank conducts its monetary policy in a forward-looking manner, while considering symmetrically the risks of inflation remaining persistently above or below the target.

    - The path of convergence of inflation toward the target is assessed based on a comprehensive evaluation of inflation and growth outlooks as well as their uncertainties and risks, the degree of anchoring of inflation expectations, and financial stability conditions.

- o **(Flexible operation)** The Bank conducts its monetary policy to support real economic growth to the extent that this does not hinder attaining the inflation target over the medium term.

☐ **(Consideration of financial stability)** Achieving price stability over the medium term should be based on financial stability, and the Bank pays careful attention to financial stability conditions in its conduct of monetary policy.

- o **(Efforts to stabilize financial market)** The Bank makes efforts to stabilize the financial market and restore the financial intermediary function in the event of financial unrest, given that it constrains the monetary policy transmission channel and undermines macroeconomic stability.

- o **(Attention to financial imbalances)** As persistent financial imbalances such as the buildup of debt could undermine macroeconomic stability, the Bank pays due attention to financial imbalances in conducting its monetary policy.

    - The Bank examines, assesses and announces financial stability conditions on a regular basis, to prevent excessive accumulation of financial imbalances that may be brought about by monetary policy implementation.

    - Since there are limits to maintaining financial stability solely through monetary policy, which affects the whole economy, monetary policy needs to be complemented by macroprudential policies to prevent accumulation of financial imbalances.

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Executive Summary

[Monetary Policy Operating Conditions]

1 A look at financial and economic conditions in Korea and abroad between February and May 2021 finds the following. The trend of recovery in the global economy accelerated, as vaccination expanded and the restrictions on economic activity were relaxed, particularly in major advanced economies. The US economy showed rapid recovery, backed by large-scale stimulus measures and the reopening of economic activity following the expansion of COVID-19 vaccinations. The euro area gradually emerged from its challenging economic situation last winter, thanks to the lifting of lockdowns following expanded vaccine rollouts. The Chinese economy sustained its trend of solid growth as domestic demand recovered in the midst of buoyant exports. Meanwhile, the trend of improvement in the Japanese economy showed signs of weakening due mainly to strengthened preventative measures in line with the resurgence of COVID-19.

Economic growth in major economies[1)]

(%)

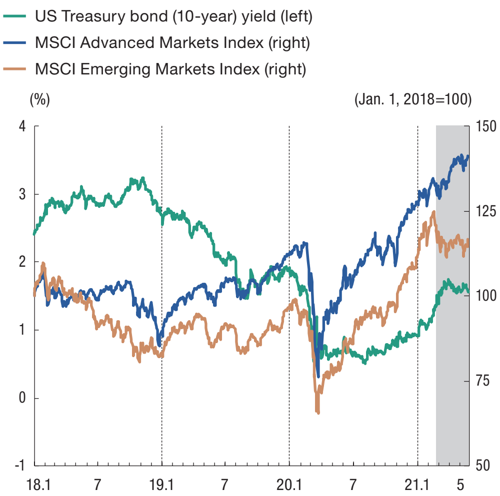
	2018	2019	2020					2021
	Year	Year	Year	Q1	Q2	Q3	Q4	Q1
US	3.0	2.2	-3.5	-1.3	-9.0	7.5	1.1	1.6
Euro area	1.9	1.3	-6.6	-3.8	-11.6	12.5	-0.7	-0.6
Japan	0.6	0.0	-4.7	-0.5	-8.1	5.3	2.8	-1.3
China	6.7	6.0	2.3	-6.8	3.2	4.9	6.5	18.3

Note: 1) The quarterly rates of growth are quarter-on-quarter (seasonally adjusted) for the US, Japan and the euro area, and year-on-year for China.

Sources: Individual countries' published statistics.

The international financial market generally remained stable. Expectations for the continuation of an accommodative monetary policy stance and announcements of large-scale stimulus measures in the United States, and expansion of the COVID-19 vaccine rollouts in major advanced economies, worked to lift investor sentiment, although the resurgence of COVID-19 in India and some other countries and concerns about inflation in the United States acted to weaken investor sentiment. The US Treasury yield increased by a large extent on expectations for strengthened economic recovery from additional stimulus and on concerns over inflation, and then retraced the rise following expectations of the US Federal Reserve's continued monetary accommodation and some weak economic indicators. Stock prices in advanced economies rose significantly on expanded vaccinations and the United States' announcements of large-scale stimulus measures, and then the upward trend slowed entering May, owing primarily to the reemergence of concerns over inflation and the perception that stock prices were overvalued. Stock prices in emerging market economies fell, due to weaker investor sentiment following rises in US long-term interest rates, and to concerns about a delay in the resumption of economic activity stemming from the resurgence of the pandemic in some countries. The US dollar strengthened relative to major currencies in March, and then weakened after April.

US long-term interest rate, share price indices of advanced and emerging markets



Source: Bloomberg.

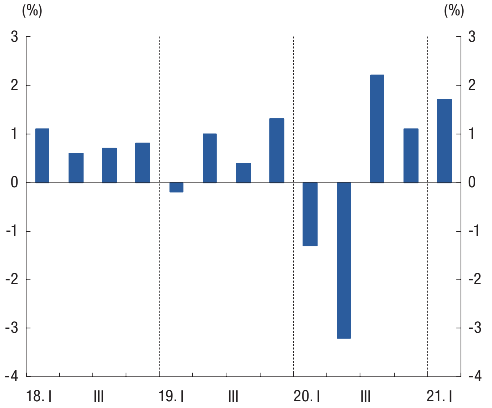
2 The trend of recovery in the Korean economy strengthened. Exports sustained their buoyancy and facilities investment continued to recover robustly, supported by the global economic recovery and improvement in the IT industry. Private consumption gradually emerged from its slump on the recovery in consumer sentiment. Accordingly, real GDP in the first quarter increased by 1.7% compared to the previous quarter.

By sector, private consumption in the first quarter emerged from its slump, led mainly by increased consumption in durable goods and face-to-face service, boosted by the relaxation of social distancing measures and improvement in consumer sentiment. Retail sales increased in April, as sales of semi-durables including clothes and non-durable goods such as cosmetics grew considerably in the preceding month, boosted by the continuation of the relaxed social distancing measures, and as sales of durables including computers and telecommunications equipment also increased. Government consumption rose in the first quarter, due to increased spending on goods stemming from purchases of quarantine goods and vaccines to deal with the pandemic, despite sluggish expenditure on national health insurance reimbursement.

Facilities investment picked up in the first quarter, as investment in machinery sustained high growth, led by special industrial machinery including semiconductor manufacturing equipment, and investment in transport equipment also increased. These ongoing movements led to an increase in the facilities investment index in April. Construction investment saw weak improvement in the first quarter. While building construction, and non-residential building construction in particular, rose, civil engineering fell slightly, affected by worsened weather conditions at the beginning of the year and a delay in supply of construction materials. The value of construction completed decreased in April, as that of civil engineering and of general civil engineering in particular fell, offsetting an increase led mainly by that of construction and of residential building construction.

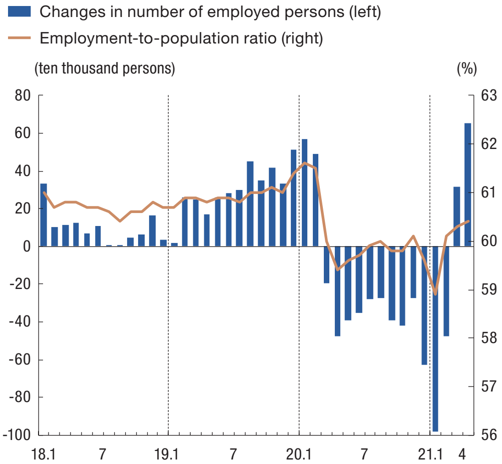
Exports (FOB basis) grew at a faster pace year-on-year in the first quarter. Exports of IT products, and those of semiconductors and wireless communications devices in particular, remained favorable thanks to strong demand for mobile devices and servers. Exports of non-IT products, led mainly by chemicals and automobiles such as electric vehicles and SUVs, increased significantly, influenced by economic recovery in major economies and rising international oil prices. After April, exports remained strong thanks to expanded growth in exports of non-IT products, such as automobiles, machinery, steel and chemicals.

Real GDP Growth[1)]



Note: 1) Quarter-on-quarter (seasonally adjusted), reflects preliminary figures.
Source: Bank of Korea

Changes[1)] in number of employed persons and employment-to-population ratio[2)]



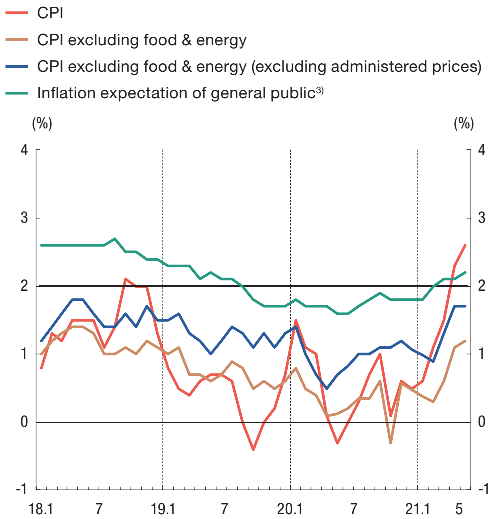
Notes: 1) Year-on-year.
2) Seasonally adjusted.
Source: Statistics Korea.

Employment conditions have continued to improve, with increasing trend in the number of persons employed expanding after March. The number of persons employed shifted to an increase year-on-year in March, due to eased social distancing measures and base effects, and grew at a faster pace by 652,000 in April. The (seasonally adjusted) employment-to-population ratio remained on the rise, showing a slight increase.

Nominal wages increased by 4.2% year-on-year in the first quarter of 2021, rising sharply from 2.0% in the fourth quarter of last year.

3 Consumer price inflation rose to the 1% level in the first quarter of this year, and then climbed further to run above 2% between April and May. This is mainly due to strong base effects in the second quarter in the midst of greater influences of supply-driven factors, such as worsened weather conditions, the spread of avian influenza, and rising international oil prices. Core inflation (excluding changes in food and energy prices from the CPI) has risen to the lower-1% level in the second quarter of this year after remaining low at the 0% level since March 2019, and core inflation excluding administered prices has gone up to the mid- to upper-1% level. The inflation expectations of the general public have risen to the lower-2% level.

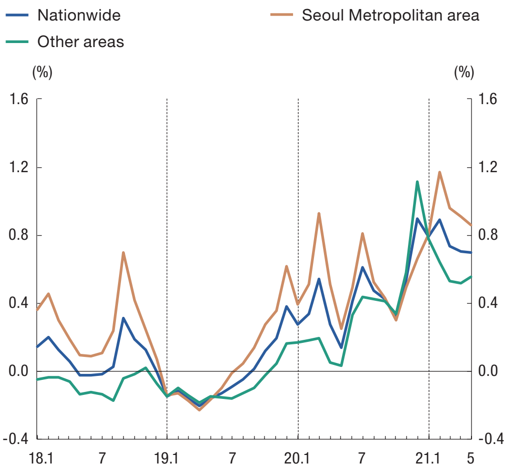
Inflation[1)2)]



Notes: 1) The bold line indicates the inflation target.
2) Year-on-year.
3) Expectations for the CPI inflation rate one year ahead.
Sources: Bank of Korea, Statistics Korea.

Housing sales prices showed a slightly decelerated upward trend month-on-month after March, but still continued to increase considerably. Leasehold (*jeonse*) deposit prices rose at a moderately slower pace after the first quarter.

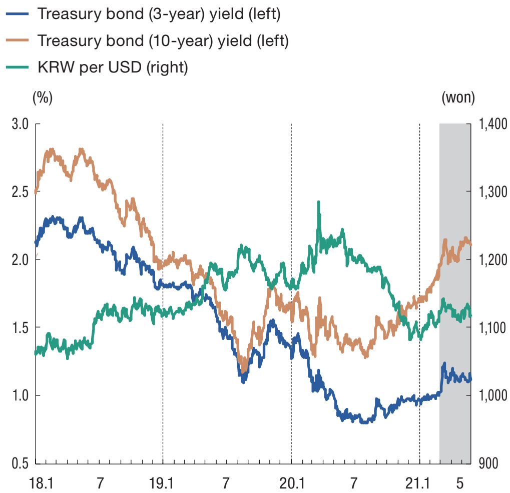
Housing sales price growth rate[1)]



Note: 1) Month-on-month.
Source: Korea Real Estate Board.

④ Korea Treasury bond yields rose significantly on expectations for domestic and global economic recovery, rising US Treasury bond yields, and net selling of Treasury bond futures posted by foreign investors. The 10-year Treasury bond yield, which has continued to rise since the second half of last year, showed an accelerated increase, and the 3-year Treasury bond yield, whose extent of increase had been relatively limited, also rose considerably. However, Treasury bond yields have fluctuated within a limited range after mid-March, in line with changes in US Treasury bond yields, and supply and demand conditions for Treasury bonds. The Korean won/US dollar exchange rate rose following a surge in US Treasury bond yields in early March, and then fell on a decelerated increase in US Treasury bond yields, strong domestic economic indicators, and wider vaccine distribution in major advanced economies. The exchange rate fluctuated in May, influenced by changes in market expectations regarding the continuation of an accommodative policy stance by the US Federal Reserve.

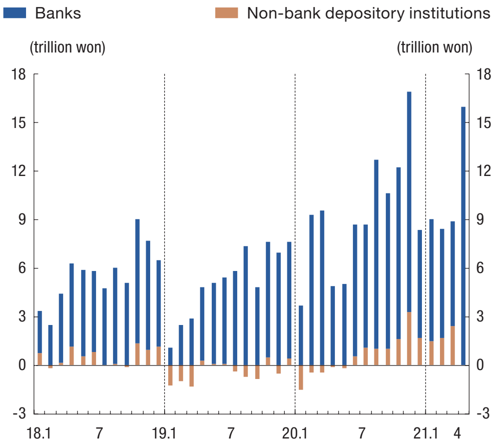
Korea Treasury bond yields and exchange rate (KRW per USD)



Sources: Bank of Korea, Korea Financial Investment Association.

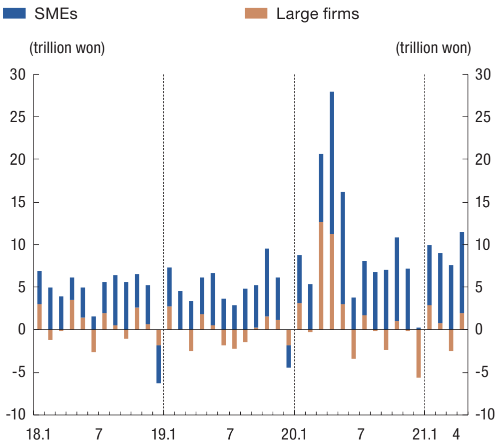
5 Household lending maintained strong growth, led by mortgage loans. However, in April, other lending soared temporarily, due mainly to demand for funds related to subscription deposits for public offerings. Corporate lending remained on the rise, led by lending to small and medium-sized enterprises. Direct funding also increased significantly, influenced by an expansion in bond issuance, and large-scale public offerings and paid-in capital increases by some corporations.

Changes in household loans[1)2)3)]



Notes: 1) Month-on-month.
2) Including mortgage transfers.
3) Figures for April 2021 are based on the Bank of Korea advance estimate for banks and have not been released for non-bank depository institutions.
Source: Bank of Korea.

Changes in corporate loans[1)2)]

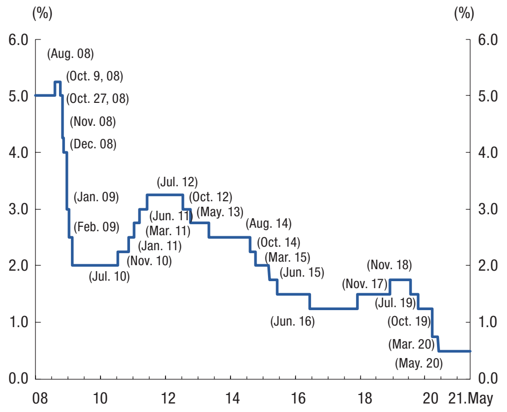


Notes: 1) Month-on-month.
2) Based on banks.
Source: Bank of Korea.

[Conduct of Monetary Policy]

6 The Bank of Korea maintained its accommodative policy stance to support the recovery of growth and to help inflation stabilize at the 2% target over a medium-term horizon, while paying attention to financial stability. In this process, it closely examined risk factors such as the global and domestic development of the COVID-19 pandemic, its financial and economic impacts, and changes in financial stability conditions. Under this policy stance, the Bank of Korea maintained the Base Rate at 0.50%.

Bank of Korea Base Rate[1)]



Note: 1) Figures in parentheses refer to the months of Base Rate adjustments.
Source: Bank of Korea.

7 A detailed look at the Base Rate decisions during this period, and the backgrounds behind them, are as follows. At the April meeting, the Board left the Base Rate unchanged at 0.50%, judging that it would be necessary to monitor the developments of the pandemic and further examine whether the trend of recovery would continue, although the domestic economy was growing faster than expected, thanks to improvement in global economic conditions. The recovery of the Korean economy strengthened somewhat. Exports sustained their buoyancy and facilities investment continued to recover robustly, while the sluggishness in private consumption eased. It was expected that the domestic economy would sustain this trend of improvement. However, it was judged that high uncertainties still remained, since the pace of the improvement would be heavily dependent upon the evolution of the resurgence of the pandemic and the progress of vaccination. Consumer price inflation rose to the mid-1% level due to an increase in petroleum product prices as well as rising prices of agricultural, livestock, and fisheries products. With respect to financial stability, household loans exhibited a sharp increase, led by housing-related loans, and housing prices continued to increase rapidly in all parts of the country.

At the May meeting, the Board decided to leave the Base Rate unchanged at 0.50%. The Board judged that there was a need to wait and observe the developments of COVID-19 and the progress of vaccination, and the resulting economic recovery, although projections of growth and inflation were revised upward, bolstered by expanded growth in the global economy. Looking at the domestic economy, exports and facilities investment sustained their buoyancy on the strengthened global economic recovery, while private consumption gradually emerged from its slump. Going forward, it was expected that these trends would continue and the recovery would strengthen. Accordingly, GDP growth this year was projected to be the 4% level, significantly above the February forecast of 3.0%. Consumer price inflation rose markedly to the lower-2% level due to the rising prices of petroleum products and agricultural, livestock, and fisheries products as well as the accelerating increase in service prices. In annual terms, consumer price inflation was expected to run at 1.8%, considerably exceeding the February forecast of 1.3%. On the financial stability side, household loan growth remained high, and housing prices continued to increase rapidly in all parts of the country. As a result, the Board saw a growing need to pay attention to the risk of a buildup of financial imbalances.

8 The Bank of Korea is using various policy instruments to promote stability and smooth credit flows in the financial and foreign exchange markets.

The Bank increased the total ceiling on the Bank Intermediated Lending Support Facility on three occasions last year (in March, May, and October 2020) by a total of 18 trillion won, out of which 16 trillion won was allocated to the Support Program for SMEs Affected by COVID-19 and the Support Program for Small Businesses that were operated on a temporary basis (originally set to expire at the end of March 2021). However, as small businesses and SMEs, especially in the face-to-face service industries, continued to have funding difficulties due to the prolonged social distancing measures this year, the Bank extended the operation period of the two programs by six months from March 25, 2021 to the end of September 2021. With such financial support from the Bank of Korea, bank loans amounting to 26.4 trillion won were extended to 117,287 establishments between March 2020 and April 2021 under the Support Program for SMEs Affected by COVID-19. As for the Support Program for Small Businesses, bank loans worth 1.6 trillion won were extended to 13,604 establishments between October 2020 and April 2021, showing steady growth in support loan performance.

Programs under the Bank Intermediated Lending Support Facility

(trillion won, %)

Program	Ceiling	Interest rate
Support Program for Trade Financing	2.5	0.25
Support Program for New Growth Engine Development and Job Creation[1)]	13.0	0.25
Program for Stabilization of SME Lending[2)]	5.5	0.25
Support Program for Regional SMEs	5.9	0.25
Support Program for SMEs Affected by COVID-19	13.0	0.25
Support Program for Small Businesses	3.0	0.25
Total	43.0[3)]	-

Notes: 1) The Support Program for High-tech and Other Start-up SMEs was expanded and reorganized as the Support Program for New Growth Engine Development and Job Creation (September 2017).
2) Includes the support that had been formerly provided under the Support Program for Facilities Investment.
3) Includes reserves of 0.1 trillion won.
Source: Bank of Korea.

In addition, the Bank purchased a total of 11 trillion won worth of Treasury bonds last year for financial market stability. In February this year, the Bank announced (on Feb. 26) another plan to expand outright purchases by a total of 5~7 trillion won during the first half of 2021 to prepare against the possibility of increased volatility in market interest rates, as an increase in Treasury bond issuance is expected with the government's disbursal of the fourth round of emergency relief payments. The Bank purchased 4.5 trillion won worth of Treasury bonds in total on three occasions: on March 9 (2.0 trillion won), April 28 (1.0 trillion won), and June 3 (1.5 trillion won), 2021.

On January 12, 2021, the Bank of Korea provided the second round of lending (1.78 trillion won) to the SPV (established in July 2020) purchasing corporate bonds and commercial paper to support financing of low-rated companies that face difficulties from the COVID-19 pandemic. As of end-April 2021, the SPV has purchased 3.3 trillion won worth of corporate bonds and commercial paper.

In addition, the Bank terminated the liquidity provision measure that expanded the range of eligible collateral for lending facilities on March 31, 2021 as scheduled. It had been implemented on a temporary basis (from April 2020 to March 2021) to improve collateral availability of Korean financial institutions and to expand liquidity provision channels in the domestic financial markets. The decision was made taking into account that improved liquidity conditions had reduced the need for extending the measure, adopted in response to COVID-19. In the meantime, the Bank also ended the broadening of the eligible collateral for guaranteeing net settlements and of the range of securities eligible for open market operations on March 31, 2021 as scheduled, both of which had been implemented on a temporary basis from April 2020 to March 2021.

⑨ The Bank of Korea strengthened its examinations of financial and FX market movements and financial stability conditions. At the March Financial Stability Meeting, the Bank carried out a multifaceted examination on how the changes in economic conditions brought on by the prolonged COVID-19 pandemic could affect the debt redemption capacities and financial soundness of households and businesses.

The Bank of Korea also continued to strengthen the multi-layered financial safety net, by enhancing global financial cooperation and expanding its bilateral currency swap arrangements with major central banks. When the Bank extended the currency swap agreement with Swiss National Bank in March, “vitalizing the function of financial markets” was added to the purpose of the swap agreement, on top of the existing purpose of “strengthening financial cooperation between the two countries,”and the agreement period was lengthened from 3 to 5 years. This further strengthened the safety net in the FX sector.

In addition, the Bank also made efforts to enhance stability and efficiency in the payment and settlement systems. The Bank also continued its research on Central Bank Digital Currency (CBDC) to preemptively cope with future changes in the payment and settlement environment which could see a growing need for CBDC adoption. The Bank is planning to conduct a pilot test for CBDC in a virtual environment from the second half of 2021, based on the results of the consultations completed this March. For the test, the Bank will create a cloud-based experiment environment and examine basic functions of CBDC and the possibility of its use while carrying out performance tests of related IT system. In the meantime, the Bank of Korea has closely monitored changes in the environment surrounding CBDC, while enhancing information sharing and cooperation with other central banks to share the research results of major economies.

[Future Monetary Policy Directions]

⑩ The outlooks for growth and inflation are as follows. It is forecast that GDP will record a growth rate of 4.0% this year. The Korean economy is expected to show a stronger recovery, as exports and facilities investment will continue to be robust thanks to the global economic recovery and private consumption is expected to show improvement. Private consumption is projected to show continued improvement driven by a recovery in consumer sentiment and easing of sluggishness in household income conditions. Facilities investment is forecast to continue its solid recovery, led by the IT sector. Construction investment is expected to recover, centering around building construction on the back of the increase in construction starts that began last year, and exports are forecast to show sustained strength, driven by economic recovery in major countries and continued improvement in the global IT business. It is assessed that a number of latent upside and downside risk factors to the future growth path exist. The upside risks to growth include improvement in consumer sentiment stemming from expanded vaccinations, additional economic stimulus at home and abroad, and stronger improvement in global semiconductor industries. Among the downside risks are delays in normalization of economic activities amid disruptions in vaccinations, continued setbacks in production of some manufacturers, and intensified conflicts between the US and China.

Economic growth outlook[1]

(YoY, %)

	2020[2]	2021e			2022e		
	Year	H1	H2	Year	H1	H2	Year
GDP	-0.9	3.7	4.2	4.0	3.2	2.8	3.0
Private consumption	-5.0	1.0	4.0	2.5	4.7	2.3	3.5
Facilities investment	7.1	10.7	4.3	7.5	2.8	4.2	3.5
Intellectual property products investment	4.0	3.6	5.0	4.3	4.3	3.4	3.8
Construction investment	-0.4	-1.0	3.4	1.3	2.3	2.7	2.5
Goods exports	-0.5	14.8	4.0	9.0	1.9	3.1	2.5
Goods imports	-0.1	11.0	5.9	8.3	3.0	4.0	3.5

Notes: 1) Figures are the forecast as of May 2021.
2) Reflects preliminary figures.
Source: Bank of Korea.

Consumer price inflation is forecast to rise to 1.8% this year, increasing significantly from 0.5% in 2020, as international oil prices are expected to increase at a faster rate than had been expected, and prices of agricultural and livestock products are forecast to show high growth rates. Core inflation excluding food and energy prices is forecast to increase from 0.4% last year to 1.2%. It is assessed that there is a mix of both upside and downside risks to the inflation forecast path. Upside risks to the price forecast include accelerated growth of commodity prices, a continued upward trend in agricultural and livestock product prices, and a stronger recovery in consumer demand with expanded vaccinations. Among the downside risks are a worsening of the demand slump stemming from the resurgence of COVID-19 and delays in electricity and gas fee increases.

Inflation outlook[1]

(YoY, %)

		2020	2021e			2022e		
		Year	H1	H2	Year	H1	H2	Year
CPI inflation		0.5	1.7	2.0	1.8	1.3	1.4	1.4
Core inflation	CPI excluding food & energy	0.4	0.8	1.6	1.2	1.7	1.2	1.4
	CPI excluding agricultural products & oil	0.7	1.2	1.8	1.5	1.7	1.3	1.5

Note: 1) Figures are the forecast as of May 2021.
Source: Bank of Korea.

11 The Bank of Korea will continue to conduct its monetary policy in order to support the economy and stabilize consumer price inflation at the target level (2%) over a medium-term horizon, while paying attention to financial stability.

The Bank will maintain its accommodative monetary policy stance for the time being. While the Korean economic recovery is expected to strengthen and inflation to remain at a high level for some time, there are underlying uncertainties surrounding the path of COVID-19 and inflationary pressures on the demand side are forecast to be modest. In this process the Bank will assess developments related to COVID-19 and economic developments in major countries, while paying closer attention to the buildup of financial imbalances such as fund flows concentrated in asset markets and household debt growth.

I

Monetary Policy Operating Conditions

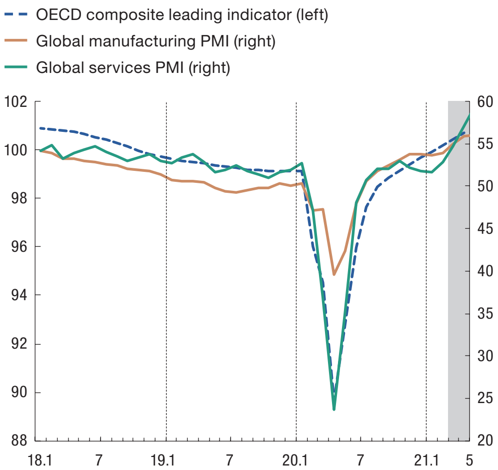
1. Global Economy

Global economic recovery strengthens

Recently, the trend of economic recovery in the global economy accelerated, as vaccination expanded and restrictions on economic activity were relaxed, particularly in major advanced economies. The global PMI[1], an indicator of global economic trends, far exceeded the 50-point benchmark, and the OECD composite leading indicator remained on an upward path as well. Global trade continued its trend of recovery, led by trade in goods.[2]

By country, the US economy showed rapid recovery[3] on the back of large-scale stimulus measures and the reopening of economic activity following the expansion of COVID-19 vaccinations. The euro area gradually emerged from its challenging economic situation[4] of last winter, thanks to the lifting of lockdowns following increased vaccinations. The Chinese economy sustained its trend of solid growth[5] as domestic demand recovered in the midst of buoyant exports. Meanwhile, the trend of improvement in the Japanese economy showed signs of weakening[6], due mainly to strengthened preventative measures in line with the resurgence of COVID-19. With the exception of China, other emerging market economies witnessed relatively slow recovery compared to advanced economies. The ASEAN+5 countries saw sluggish domestic demand due to the resurgence of COVID-19, despite their robust exports. India's economy maintained modest improvement in the first quarter, but is likely to slow in the second quarter[7], affected by the resurgence of the pandemic.

Figure I-1. Composite leading indicator[1] and global PMIs



Note: 1) The composite leading indicator includes OECD member countries and six emerging countries (China, Brazil, India, Russia, Indonesia, and South Africa).
Sources: OECD, Bloomberg.

1) The global all-industry PMI turned to an increase starting from January this year (52.3) and came to 58.4 in May.
2) Global trade volume in goods (based on CPB imports) in March this year was up by 11.4% year-on-year, a greater increase compared to that (5.3%) of the previous month.
3) Individual consumer spending in the US declined by 1.3% in February but surged by 4.1% in March.
4) The euro area economy showed negative GDP growth in the first quarter, but retail sales in the area rose for two straight months (4.2% in February and 3.3% in March) and industrial production turned to an increase (-1.2% in February and 0.1% in March) as well.
5) In China, exports increased substantially in April, driven by integrated circuit and furniture exports, and retail sales also maintained favorable movements (34.2% growth in March and 17.7% in April).
6) Japan's economic growth rate in the first quarter was negative again (-1.3%) for the first time in three quarters. Its economy is expected to show a gradual recovery thanks to rising overseas demand and the expanded vaccine rollout.
7) India saw large increases in industrial production (22.4%) in March and exports (195.7%) in April, but the all-industry PMI (48.1) in May fell below the benchmark (50).

Table I-1. Economic growth in major economies[1)2)]

(%)

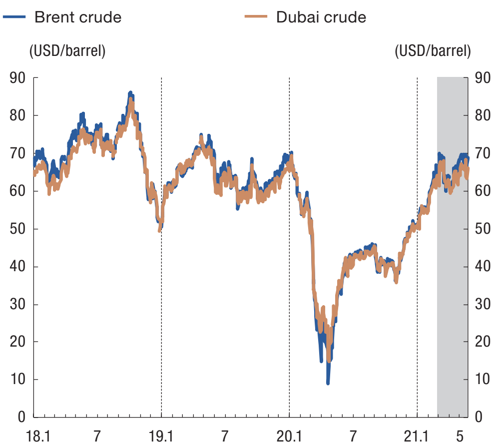
	2018 Year	2019 Year	2020 Year	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1
World	3.6	2.8	-3.3	-	-	-	-	-
Advanced economies	2.3	1.6	-4.7	-	-	-	-	-
US	3.0	2.2	-3.5	-1.3	-9.0	7.5	1.1	1.6
Euro area	1.9	1.3	-6.6	-3.8	-11.6	12.5	-0.7	-0.6
Japan	0.6	0.0	-4.7	-0.5	-8.1	5.3	2.8	-1.3
Emerging market and developing economies	4.5	3.6	-2.2	-	-	-	-	-
China	6.7	6.0	2.3	-6.8	3.2	4.9	6.5	18.3
India[3)]	6.5	4.0	-7.3	3.0	-24.4	-7.4	0.5	1.6
ASEAN-5[4)]	5.3	4.9	-3.4	1.5	-8.5	-4.0	-2.5	-0.7
Brazil	1.8	1.4	-4.1	-0.3	-10.9	-3.9	-1.1	1.0
Russia	2.8	2.0	-3.0	1.4	-7.8	-3.5	-1.8	-1.0

Notes: 1) Based on the IMF statistics, except in the cases of individual countries, the euro area and ASEAN-5 which are based on their own published statistics.
2) The quarterly rates of growth are quarter-on-quarter (seasonally adjusted) for advanced economies, and year-on-year for the others.
3) The annual growth rates are based on the fiscal year (April of the current year to March of the next year).
4) Indonesia, Thailand, Malaysia, the Philippines, and Vietnam.
Sources: IMF, individual countries' published statistics.

International oil prices rise to the mid-60 dollar range

International oil prices (based on Dubai crude oil) recently rose to the mid-60 dollar range per barrel. International oil prices slightly declined in March due to mounting concerns over delayed recovery in crude oil demand in line with the resurgence of COVID-19 in Europe. Entering April, however, the prices showed an upward trend backed by rising expectations for a rebound in demand, thanks to the implementation of economic stimulus packages in the Unite States as well as progress in vaccine rollouts in Europe.

Figure I-2. International oil prices



Sources: Bloomberg, Reuters.

International financial market generally stable

The international financial market generally remained stable. Expectations for the continuation of an accommodative monetary policy stance and announcements of large-scale stimulus measures[8)] in the United States, and expansion of the COVID-19 vaccine rollouts in major advanced economies, worked to lift investor sentiment, although the resurgence of the pandemic[9)] in India and some other countries and concerns about inflation in the United States acted to weaken it.

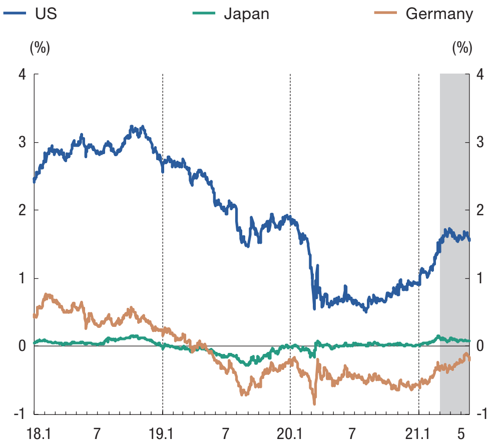
8) The Biden administration implemented a sixth economic stimulus package amounting to 1.9 trillion dollars (on March 11) and unveiled its 4 trillion dollar physical and human infrastructure investment plan (the American Jobs Plan and American Families Plan) as well.

9) Number of new COVID-19 cases (daily average, 1,000 cases): for India, 12.5 in February → 34.0 in March → 220.5 in April → 332.9 between May 1 and 26; for Japan, 1.6 in February → 1.3 in March → 3.8 in April → 5.3 between May 1 and 26 (source: World Health Organization).

US Treasury yields increased by a large extent in March on higher expectations for economic recovery from additional stimulus and on concerns over inflation, and then decelerated in April following expectations for the US Federal Reserve's continued monetary accommodation and some weak economic indicators. Government bond yields in Germany fell due to movement restrictions caused by the resurgence of COVID-19 in March, but rebounded on heightened[10)] expectations of economic recovery in line with the expansion of vaccinations from April onward.

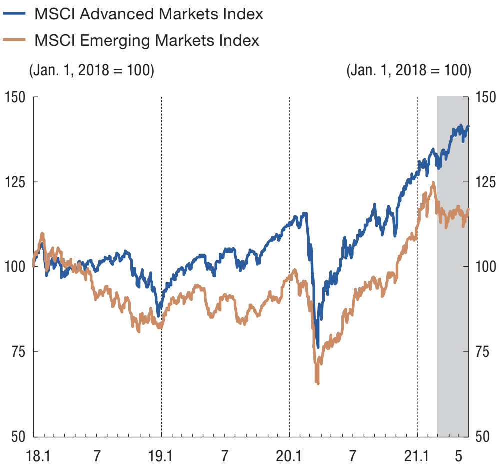
stimulus measures and announcements of infrastructure investment in the United States, and favorable corporate earnings reports.[13)] However, the stock price rally decelerated in May owing to renewed concerns about inflation and the perception that stock prices were overvalued. Meanwhile, stock prices in emerging economies fell due to weakened investor sentiment following rises in US long-term interest rates, and to concerns about a delay in the reopening of economic activities stemming from the resurgence of the pandemic in some countries.

Figure I-3. Long-term market interest rates[1)] in major economies



Note: 1) Treasury bond (10-year) yields.
Source: Bloomberg.

Figure I-4. Share price indices of advanced and emerging markets



Source: Bloomberg.

Stock prices in major advanced economies rose considerably[11)], due to expanded vaccinations[12)] in major developed economies, the implementation of large-scale economic

Volatility in US stock prices decreased on favorable corporate earnings reports and expectations of the continuation of an accommodative monetary policy stance by the US Federal

10) The Federal Ministry for Economic Affairs and Energy revised its 2021 economic forecast upward (3.0% → 3.5%) (Apr. 27, 2021).

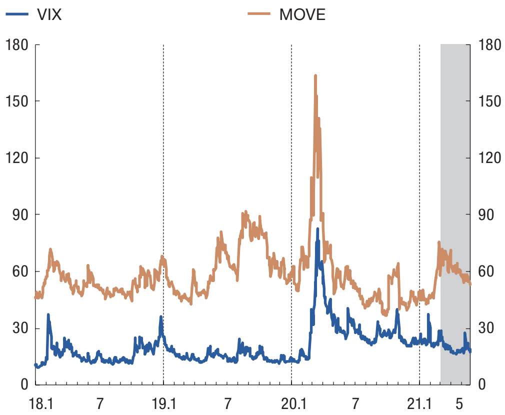
11) The MSCI Developed Markets Indexes hit record highs 13 times between March 1 and May 26, 2021.

12) Vaccination rate (%, the share of people who received at least one shot per 100 of the total population): for the United States, 14.9 at end-February → 29.2 at end-March → 43.3 at end-April → 49.4 on May 26; for Germany, 5.0 → 11.9 → 27.7 → 41.3; for France 4.6 → 12.9 → 23.3 → 35.9.

13) Among the S&P 500 companies that had released their net income for the first quarter 2021, approximately 87% exceeded market expectations.

Reserve, and then expanded temporarily in May due to the reemergence of concerns[14] over inflation. Meanwhile, volatility in US interest rates surged temporarily in March, affected by the rapid rises in long-term rates owing to the heightened expectations for the US economic recovery and concerns over inflation, but declined considerably after April in line with the US Federal Reserve's reaffirmation of continued monetary easing.

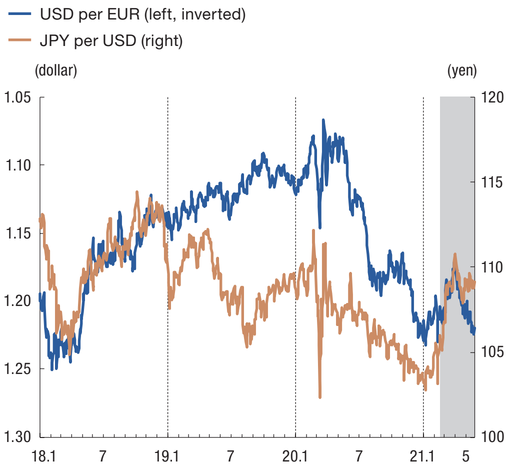
Figure I-5. Volatility Index (VIX) and Merrill Lynch Option Volatility Estimate (MOVE) Index[1)]



Note: 1) Volatility indices for US equity and Treasury bond prices.
Source: Bloomberg.

The US dollar strengthened against major currencies in March but weakened after April. It appreciated against the euro in March owing to stronger expectations for the US economic recovery and rises in long-term interset rates, but weakened after April in reflection of expectations of improvement in economic activity in line with the expansion in vaccine rollouts in the euro area. The US dollar strengthened against the Japanese yen but the extent of strengthening narrowed after April, affected by the fall in US Treasury bond yields due to the prospect of continued monetary accommodation by the US Federal Reserve.

Figure I-6. Major exchange rates[1)]



Note: 1) Based on the New York market rate at 16:30.
Source: Reuters.

14) In the United States, the CPI (YoY) recorded 4.2% in April, highly exceeding market expectations (3.6%) (May 12, 2021).

2. Real Economy

(1) Economic growth

Domestic economy expands recovery trend

The trend of recovery in the Korean economy strengthened. Exports sustained their buoyancy supported by the global economic recovery and improvement in the IT industry, and facilities investment remained robust. Private consumption gradually emerged from its slump on the recovery in consumer sentiment. Accordingly, real GDP in the first quarter this year grew by 1.7% compared to the previous quarter (1.9% year-on-year).

Table I-2. Major economic growth indicators[1)]

(%)

	2018	2019	2020[2)]					2021
	Year	Year	Year	Q1	Q2	Q3	Q4	Q1[2)]
Real GDP	2.9	2.2	-0.9	-1.3 (1.5)	-3.2 (-2.6)	2.2 (-1.0)	1.1 (-1.1)	1.7 (1.9)
(Private consumption)	3.2	2.1	-5.0	-6.6 (-4.8)	1.2 (-4.2)	0.2 (-4.5)	-1.3 (-6.6)	1.2 (1.2)
(Government consumption)	5.3	6.4	5.0	1.6 (6.8)	1.0 (6.2)	0.1 (4.6)	-0.4 (2.3)	1.6 (2.3)
(Facilities investment)	-2.3	-6.6	7.1	0.1 (7.4)	0.7 (4.5)	5.8 (10.7)	-0.6 (6.1)	6.1 (12.4)
(Construction investment)	-4.6	-1.7	-0.4	0.1 (4.4)	-2.9 (-0.4)	-3.9 (-1.5)	3.5 (-2.9)	1.3 (-1.8)
(Goods exports)	3.3	-1.1	-0.5	-0.5 (6.4)	-16.2 (-11.9)	18.1 (-0.3)	5.4 (3.8)	2.1 (6.4)
(Goods imports)	2.0	-2.5	-0.1	-1.4 (2.6)	-4.3 (-5.6)	6.6 (0.3)	1.7 (2.3)	5.3 (9.2)

Notes: 1) Quarter-on-quarter (seasonally adjusted); figures in parentheses are non-seasonally adjusted year-on-year rates.
2) Reflects preliminary figures.
Source: Bank of Korea.

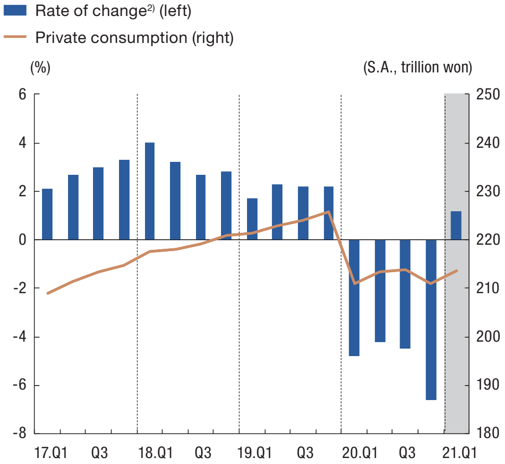
Private consumption improves and government consumption increases

Private consumption (GDP basis) improved in the first quarter, with a quarter-on-quarter increase of 1.2% (1.2% year-on-year), driven by the relaxation of social distancing measures (on February 15) and improvement in consumer sentiment. By type, goods consumption grew, led by durable goods such as home appliances, while service consumption emerged from its slump, led by the rise in some face-to-face services in line with increased outside activities. The Retail Sales Index by Statistics Korea rose by 2.3% (8.6% year-on-year) in April from the previous month. Boosted by the continuation of the relaxed social distancing measures, sales of semi-durables including clothes and non-durable goods such as cosmetics grew considerably as in the previous month, and sales of durables including computers and telecommunications equipment also increased.

Government consumption in the first quarter rose by 1.6% compared to the previous quarter (2.3% year-on-year). Expenditure on national health insurance payouts[15)] was low, but spending on goods[16)] surged due to purchases of protective equipment and goods, and vaccines to deal with the pandemic.

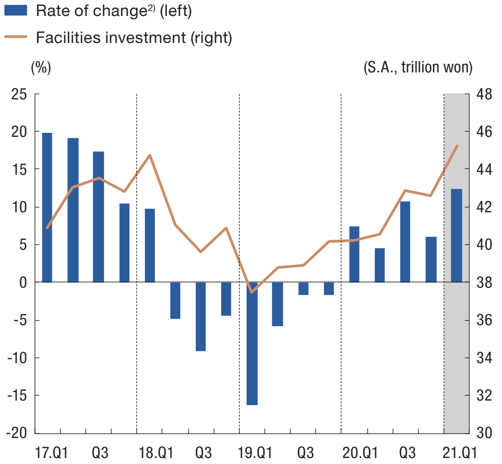
15) Health insurance payouts declined by 1.5% year-on-year in the first quarter.
16) The central government's personnel and goods expenses grew by 7.0% year-on-year in the first quarter.

Figure I-7. Private consumption trend[1)]



Notes: 1) Reflects preliminary figures.
2) Year-on-year.
Source: Bank of Korea.

Figure I-8. Facilities investment trend[1)]



Notes: 1) Reflects preliminary figures.
2) Year-on-year.
Source: Bank of Korea.

Facilities investment robust

Facilities investment was robust in the first quarter, with the increase of 6.1% (12.4% year-on-year) from the previous quarter. By sector, investment in machinery sustained high growth, supported by special industrial machinery including semiconductor manufacturing equipment, and investment in other transport equipment also increased. In April, the Estimated Index of Equipment Investment compiled by Statistics Korea also rose by 3.5% from the previous month (16.8% year-on-year). Investment in machinery went up, led by special industrial machinery including semiconductor manufacturing equipment, while that in transport equipment also increased, driven by other transport equipment such as aircraft.

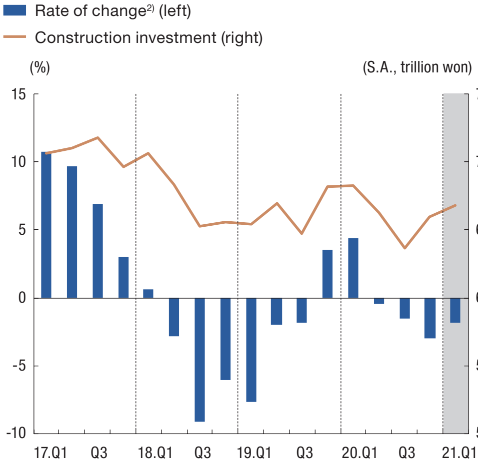
Improvement in construction investment is limited

Construction investment saw weak improvement in the first quarter, with an increase of 1.3% from the previous quarter (-1.8% year-on-year). Building construction rose, particularly for non-residential building construction, with a strong number of construction commencement.[17)] Civil engineering fell, however, affected by worsened weather conditions at the beginning of the year as well as disruptions[18)] in the supply of construction materials. The value of construction completed released by Statistics Korea decreased by 0.8% in April compared to the previous month (-1.8% year-on-year). Construction of buildings increased, centered on residential buildings, on the back of booming pre-sold apartments, while civil engineering declined, led by general civil engineering, on the reduction in SOC budget execution.

17) The area of new construction commencement rose by 17.8% year-on-year in the first quarter.

18) According to the Construction Association of Korea, construction has been halted or delayed at some construction sites since last November, affected by disruptions in supply of construction materials including concrete piles (PHC).

Figure I-9. Construction investment trends[1)]

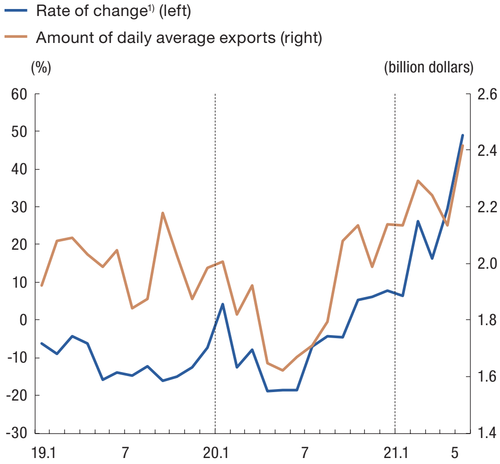


Notes: 1) Reflects preliminary figures.
2) Year-on-year.
Source: Bank of Korea.

Export boom continues, current account surplus widens

Exports (customs-clearance basis) grew at a faster pace[19)] year-on-year in the first quarter. Exports of IT products, and those of semiconductors and wireless communications devices in particular, remained favorable, thanks to strong demand for mobile devices and servers. Notably, in January this year, exports of wireless telecommunication devices and display panels surged on the back of early rollout[20)] of smartphone models. Exports of non-IT products, especially automobiles such as electric vehicles and SUVs, increased significantly, influenced by recovery in major economies, while chemical products also saw a faster export growth due to the rise in international oil prices. After April this year, exports remained strong thanks to expanded growth in exports of non-IT products, such as automobiles, machinery, steel and chemicals.

Figure I-10. Daily average exports calculated on customs clearance basis



Note: 1) Year-on-year.
Source: Korea Customs Service.

Imports (customs-clearance basis) turned to an increase[21)] in the first quarter. Imports of raw materials switched to an increase, affected by the rise in international oil prices. Imports of both capital goods and consumer goods grew at a faster pace, led by semiconductor equipment and durable goods, respectively. Imports after April also increased, led by commodities due to their rising prices.

The current account surplus widened year-on-year in the first quarter this year compared to the first quarter of last year (12.9 billion dollars). The goods account surplus widened, supported by a surge in exports thanks to global economic recovery and improvement

19) Growth rate (YoY) for exports (customs-clearance basis): 11.4% (daily average of 6.4%) in January 2021 → 9.3% (26.1%) in February → 16.4% (16.4%) in March → 41.2% (29.5%) in April → 45.6% (49.0%) in May.

20) As the launch of Samsung Electronics' Galaxy S21 was moved up from March to January 2021, wireless communication device and display panel exports rose by 57.9% and 32.2% year-on-year, respectively.

21) Growth rate for imports (customs-clearance basis): 3.6% (daily average of -1.0%) in January 2021 → 14.1% (31.7%) in February → 18.7% (18.7%) in March → 33.9% (22.7%) in April → 37.9% (41.2%) in May.

in the IT sector. The services account deficit narrowed, backed by expanded supply capacities of domestic shipping companies and improvement in the transportation account due to an increase in transportation charges. The primary income account surplus widened.

Table I-3. Current account

(billion dollars, %)

	2019	2020					2021		
	Year	Year	Q1	Q2	Q3	Q4	Q1	Apr.	May.
Current account	59.7	75.3	12.9	6.1	24.0	32.2	22.8	..	..
Goods	79.8	81.9	15.6	9.5	26.2	30.6	19.6	..	..
Exports[1]	542.2	512.5	130.2	110.3	130.1	141.9	146.4	51.2	50.7
(Rate of change[2])	-10.4	-5.5	-1.9	-20.3	-3.5	4.1	12.5	41.2	45.6
Imports[1]	503.3	467.6	121.5	108.4	114.1	123.7	136.1	50.8	47.8
(Rate of change[2])	-6.0	-7.1	-1.9	-15.8	-8.7	-1.7	12.0	33.9	37.9
Services	-26.8	-16.2	-6.1	-3.5	-4.3	-2.3	-1.4	..	..
Credit	103.8	90.1	23.2	20.2	20.9	25.8	25.4	..	..
Debit	130.7	106.3	29.3	23.7	25.2	28.1	26.8	..	..
Primary income	12.9	12.1	3.7	0.1	3.1	5.2	5.7	..	..
Secondary income	-6.1	-2.5	-0.3	0.0	-1.0	-1.2	-1.2	..	..

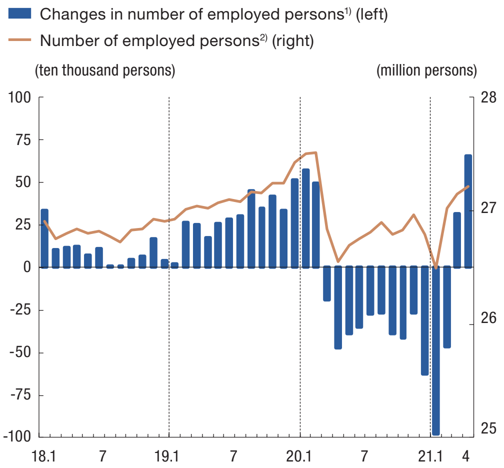
Notes: 1) Customs-clearance basis.
2) Year-on-year.
Sources: Bank of Korea, Korea Customs Service.

(2) Employment

Employment slump eases

The employment slump eased, with the increase in the number of persons employed expanding after March. The number of persons employed shifted to an increase[22] year-on-year in March (+314,000) due to eased social distancing measures[23] and base effects of the sharp decline last year, and increased at a faster pace by 652,000 in April.

Figure I-11. Number of employed persons



Notes: 1) Year-on-year.
2) Seasonally adjusted.
Source: Statistics Korea.

By industry, the increase in the number of persons employed accelerated in the service industries, especially face-to-face services[24], public administration, health and social welfare services. The number of employed persons in accommodation & food services decreased at a much slower pace in March, and shifted to an increase in April. The number of the employed in health and social welfare services increased at a quicker pace, thanks to government policies to support employment. The number of employed persons in the

22) On month-on-month terms (seasonally adjusted, 10,000 persons), the number of employed persons has continued to rise since February (+53.2 in Feb. → +12.8 in Mar. → +6.8 in Apr.).

23) After having been lowered on February 15 (to level 2 in the Seoul Metropolitan area and to level 1.5 in other areas), the level of social distancing measures has remained the same for more than three months as of the end of May.

24) The face-to-face service industry includes wholesale & retail trade, accommodation & food, educational services, arts, sports & leisure-related services, repair and other personal service industries.

manufacturing sector shifted to a rise in April thanks to improved business conditions, and that in the construction industry increased at a faster pace. Meanwhile, payroll growth in the non-farm private sector, which excludes the agricultural & fishery and public sectors, turned positive in March, and rose at faster pace in April.[25]

Table I-4. Changes in the number of employed persons by industry

(YoY, ten thousand persons)

	2019	2020				2021		
	Year	Year	Q2	Q3	Q4	Q1	Mar.	Apr.
Changes in number of employed persons	30.1	-21.8	-40.7	-31.4	-44.1	-38.0	31.4	65.2
Manufacturing	-8.1	-5.3	-5.5	-5.7	-10.7	-2.8	-1.1	0.9
Construction	-1.5	-0.4	-6.1	0.9	4.5	3.4	9.2	14.1
Services	34.8	-21.6	-35.3	-27.8	-41.8	-37.9	26.2	50.7
(Wholesale&Retail)	-6.0	-16.0	-16.2	-17.0	-18.4	-19.3	-16.8	-18.2
(Transportation& Warehousing)	2.5	5.1	4.5	4.6	2.7	4.2	7.2	10.7
(Accommodation& Food)	6.1	-15.9	-19.3	-20.6	-23.4	-20.9	-2.8	6.1
(Education)	3.6	-8.6	-9.6	-10.9	-10.3	-4.2	3.2	6.6
(Personal services)	-0.3	-4.4	-8.2	-2.4	-4.3	-8.6	-7.1	-3.0
(Public administration)	-3.3	3.6	-2.2	5.7	12.2	5.1	9.4	8.0
(Health)	16.0	13.0	12.4	15.2	8.8	6.3	17.1	22.4

Source: Statistics Korea.

By employment status, the number of regular workers continued to increase, and the number of temporary and daily workers rose substantially after March. The number of self-employed workers has decreased[26] at a slower rate.

Table I-5. Changes in the number of employed persons by employment status

(YoY, ten thousand persons)

	2019	2020				2021		
	Year	Year	Q2	Q3	Q4	Q1	Mar.	Apr.
Changes in number of persons employed	30.1	-21.8	-40.7	-31.4	-44.1	-38.0	31.4	65.2
Wage and salaried worker	35.7	-10.8	-26.2	-15.1	-33.0	-20.6	45.5	72.8
(Regular workers)	44.4	30.5	38.1	24.1	1.9	10.9	20.8	31.1
(Temporary & Daily workers)	-8.7	-41.3	-64.3	-39.3	-34.9	-31.5	24.6	41.7
Self-employed workers	-5.6	-11.0	-14.5	-16.3	-11.1	-17.4	-14.1	-7.7
(Self-employed businesses with employees)	-11.4	-16.5	-18.4	-16.9	-14.0	-13.6	-9.4	-6.5
(Self-employed businesses without employees)	8.1	9.0	8.1	6.5	7.4	3.0	1.3	2.7
(Unpaid family workers)	-2.4	-3.5	-4.1	-5.9	-4.4	-6.8	-6.0	-3.9

Source: Statistics Korea.

By age, the number of employed senior persons (aged 60 and over) continued to rise, and the number of employed youth (aged between 15 and 29) and of those in their 50s increased at a faster pace after March. In the case of employed persons in their 30s and 40s, the decline slowed.

Table I-6. Changes in the number of employed persons by age group

(YoY, ten thousand persons)

	2019	2020				2021		
	Year	Year	Q2	Q3	Q4	Q1	Mar.	Apr.
Changes in number of persons employed	30.1	-21.8	-40.7	-31.4	-44.1	-38.0	31.4	65.2
Aged 15-29	4.1	-18.3	-19.9	-19.5	-26.5	-10.3	14.8	17.9
Aged 30-39	-5.3	-16.5	-18.4	-22.8	-22.7	-22.7	-17.0	-9.8
Aged 40-49	-16.2	-15.8	-18.6	-17.4	-17.0	-15.4	-8.5	-1.2
Aged 50-59	9.8	-8.8	-14.3	-11.1	-11.1	-9.9	1.3	11.3
Aged 60 and over	37.7	37.5	30.5	39.4	33.2	20.2	40.8	46.9

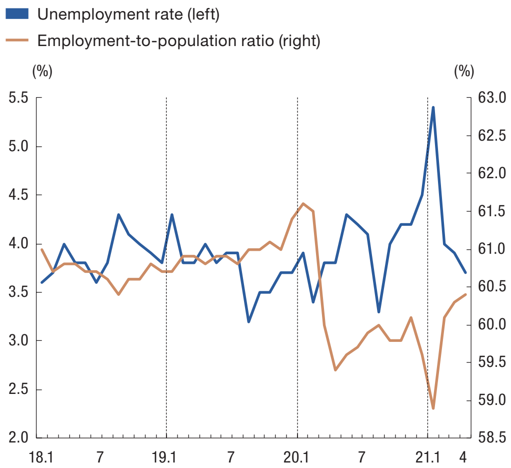
Source: Statistics Korea.

25) Changes in the number of employed persons apart from the agricultural & fisheries, public administration, and health sectors (YoY, 10,000 persons): -91.4 in January → -63.5 in February → +7.4 in March → +35.0 in April.

26) Changes in the number of self-employed workers (YoY, 10,000 persons) : -22.3 in Jan. 2021 → -15.9 in Feb. →-14.1 in Mar. → -7.7 in Apr.

The employment-to-population ratio (seasonally adjusted) continued to rise, increasing slightly from 60.3% in March to 60.4% in April. The unemployment rate (seasonally adjusted) declined to 3.7% in April, after recording the highest level in January (5.4%) since the spread of COVID-19. The number of temporarily absent workers[27] declined to 403,000, similar to the level seen in 2019. The extended unemployment rate (labor underutilization indicator 3)[28], which includes time-related underemployed persons and the potential labor force, recorded 13.8%, down by 1.1%p year-on-year.

Figure I-12. Employment-to-population ratio[1] and unemployment rate[1]



Note: 1) Seasonally adjusted.
Source: Statistics Korea.

Table I-7. Major and ancillary indicators related to employment

(ten thousand persons, %)

	2019	2020				2021		
	Year	Year	Q2	Q3	Q4	Q1	Mar.	Apr.
Changes in the number of persons employed	30.1	-21.8	-40.7	-31.4	-44.1	-38.0	31.4	65.2
Employment-to-population ratio[1]	60.9	60.1	59.6	59.9	59.8	59.8	60.3	60.4
(Based on people aged between 15 and 64)	66.8	65.9	65.5	65.6	65.6	65.6	66.1	66.4
Labor force participation rate[1]	63.3	62.5	62.1	62.2	62.5	62.5	62.7	62.7
Rate of change in number of economically active population[2]	1.0	-0.6	-1.3	-0.9	-1.0	-0.6	1.3	2.3
Unemployment rate[1]	3.8	4.0	4.1	3.8	4.3	4.4	3.9	3.7
Labor underutilization indicator 1[3]	6.4	7.8	8.7	7.6	7.7	9.1	8.3	7.9
Labor underutilization indicator 2[4]	9.3	10.0	10.4	9.7	9.9	11.7	10.6	10.1
Labor underutilization indicator 3[5]	11.8	13.6	14.4	13.5	13.6	15.6	14.3	13.8
Temporarily absent workers	40.7	83.7	107.8	77.3	57.2	67.2	42.7	40.3

Notes: 1) Seasonally adjusted.
2) Year-on-year.
3) (Unemployed persons + time-related underemployed persons) / economically active population.
4) (Unemployed persons + potential labor force) / (economically active population + potential labor force).
5) (Unemployed persons + time-related underemployed persons + potential labor force) / (economically active population + potential labor force).
Source: Statistics Korea.

27) They are defined as people with jobs or business establishments who are unable to work due to temporary illnesses, accidents, annual leave, education, etc., but are able work again if the reasons for temporary absence are resolved.

28) The extended unemployment rate encompasses the unemployed, those working part-time and searching for good jobs at the same time, and potential job seekers who are not seeking work but want to work.

<table>
<tr><td rowspan="3">Employment indicators</td><td colspan="3">Economically active population</td><td colspan="3">Economically inactive population</td></tr>
<tr><td colspan="2">Employed persons</td><td rowspan="2">Unemployed persons</td><td colspan="2">Potential labor force</td><td rowspan="2">Others</td></tr>
<tr><td>Others</td><td>Time-related under-employed persons</td><td>Unavailable jobseekers</td><td>Available potential jobseekrs</td></tr>
<tr><td>Range of labor underutilization indicators</td><td colspan="6">Labor underutilization indicator 1
Labor underutilization indicator 2
Labor underutilization indicator 3</td></tr>
</table>

Notes: 1) Those who work less than 36 hours per week but want to and can work additional hours.
2) Those seeking work for the last four weeks but unavailable to work during the surveyed week.
3) Those not seeking work for the last four weeks but want to work and available to work during the surveyed week.

Increase in nominal wages accelerates

Nominal wages rose by 4.2% year-on-year in the first quarter of 2021, rising sharply from 2.0% in the fourth quarter of last year. The wages of regular employees picked up 4.2% year-on-year as special wage payments surged[29)] amid continued increases in fixed wages. The wage growth of temporary and daily workers slowed to 5.1%.

Figure I-13. Nominal wage growth[1)]

Note : 1) Based on firms with one or more permanent employees.
Source: Ministry of Employment and Labor.

Table I-8. Nominal wage growth by category

(YoY, %)

	2019	2020					2021
	Year	Year	Q1	Q2	Q3	Q4	Q1
Total wage[1)]	3.4	1.1	-0.1	1.2	1.1	2.0	4.2
Regular workers	3.1	0.4	-0.7	0.1	0.6	1.7	4.2
(Fixed wages)	4.1	2.2	2.4	1.8	2.1	2.6	2.7
(Excess wages)	2.7	-0.9	1.5	-7.4	-0.1	2.5	1.2
(Special wages)	-2.8	-9.9	-14.9	-11.3	-7.5	-4.6	13.2
Temporary & daily workers	6.2	7.8	7.2	9.4	7.2	7.4	5.1

Note: 1) Based on firms with one or more permanent employees.
Source: Ministry of Employment and Labor.

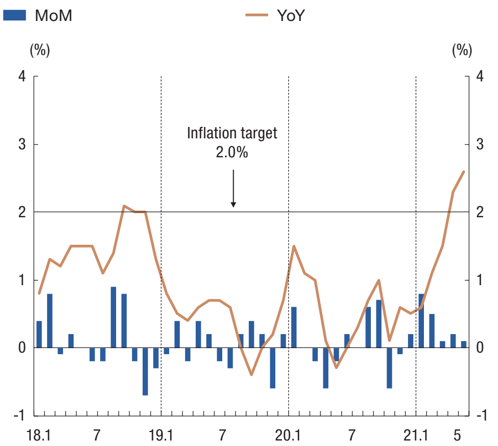
29) Special wages rose 13.2% year-on-year in the first quarter of 2021, owing to the base effect of the plunge last year, and to increased payments of bonuses in the financial, insurance and manufacturing industries.

3. Prices

Consumer price inflation rises above 2%

Consumer price inflation rose to the 1% level in the first quarter of this year, and climbed further to above 2% between April and May. This is mainly due to strong base effects in the second quarter in the midst of greater influences of supply-driven factors, such as worsened weather conditions, the spread of avian influenza, and rising international oil prices.

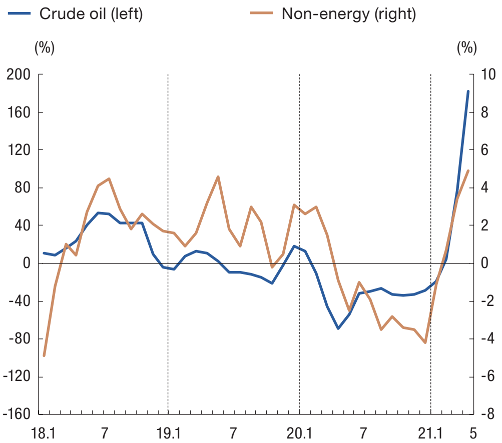
Figure I-14. CPI inflation



Sources: Bank of Korea, Statistics Korea.

Looking at overseas factors affecting consumer price inflation, the rise in crude oil import prices[30] accelerated greatly amid a continued hike in international oil prices[31], affected by the base effect of the oil price plunge last year. The prices of non-energy imports, which affect domestic industrial product prices indirectly, shifted to an increase[32] this year as the rise in commodity prices accelerated[33] despite the continued strengthening of the won.[34]

Figure I-15. Import prices (Korean-won basis)[1]



Note: 1) Year-on-year.
Source: Bank of Korea.

As for domestic factors, inflationary pressures on the demand side steadily rose as the slump in private consumption eased affected by the easing[35] of social distancing measures in the first quarter of this year. On the cost side, wage growth across industries increased

30) International oil prices (Dubai crude oil basis, YoY) shifted from a decrease of -28.5% in the fourth quarter of 2020 to an increase of 18.6% in the first quarter of this year. The rate of increase accelerated significantly to 136.6% in April and May.

31) The rate of increase in crude oil import prices (Korean won basis, YoY) picked up greatly from 11.1% in the first quarter of this year to 181.9% in April.

32) The rate of increase in non-energy import prices (Korean won basis, YoY) shifted from -3.7% in the fourth quarter of 2020 to 1.0% in the first quarter of 2021, and accelerated to 4.9% in April.

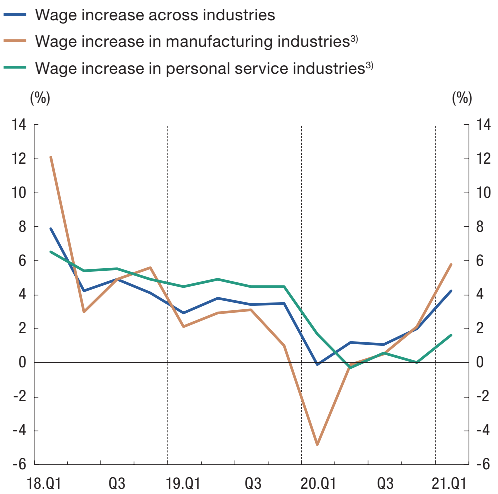
33) The rate of increase in international non-energy commodity prices (S&P GSCI basis, YoY) rose from 12.1% in the fourth quarter of 2020 to 27.7% in the first quarter, and to 52.5% in April and May.

34) The extent of change in the Korean won-US dollar exchange rate (YoY) expanded from -5.0% in the fourth quarter of last year to -6.7% in the first quarter of this year, and to -8.7% in April and May.

35) The government lowered the social distancing guidelines to level 2 in the Seoul Metropolitan area and to level 1.5 in the rest of the country from Feb. 15, 2021.

in the first quarter of this year, reflecting the increase in bonuses in the manufacturing sector. In the case of the personal services sector, wage growth increased slightly, mainly in the art, sports and leisure industries, but the growth is still low compared to normal years.

Figure I-16. Rate of wage increase (per employee)[1)2)]



Notes: 1) Based on firms with one or more permanent employees.
2) Year-on-year.
3) Simple average of the wage increase in the industries related to personal services such as the accommodation and food service industries.

Source: Ministry of Employment and Labor.

As for other factors, the prices of agricultural and livestock products and government policies acted to push inflation up. The prices of agricultural and livestock products rose greatly in February, affected by a poor harvest from the cold snap, and the spread of avian influenza, and remained at a high level, dropping at a slower pace than initially expected. With regard to government policies, as free high school education, which was expanded to second-year high school students from April last year, no longer acted to push inflation down from April this year, downward pressure on inflation due to the expansion of free high school education was lessened. In the meantime, the uptrend in housing rental fees accelerated, owing to increases[36)] in leasehold (*jeonse*) deposits and monthly rents (new contract basis).

Looking at changes in consumer price inflation by individual products, prices of agricultural and livestock products rose at a higher rate in the first quarter of 2021, while those of petroleum products fell at a slower pace. As for services, private service charges increased at a slightly faster pace, while the decline in public service charges slowed as temporary downward pressure on inflation from the government's telecom subsidy (fourth quarter of 2020) disappeared. In April and May, prices of agricultural and livestock products continued their high upward trend, and those of petroleum products rose significantly due to the stronger base effect of the oil price plunge last year amid rising international oil prices. Public service prices declined at a slower pace and housing rents and personal service charges increased at a faster pace.

36) The rate of increase in leasehold (*jeonse*) deposits and monthly rents (Korea Real Estate Board, relative to the last month of the preceding year) recorded 3.4% in 2020 and 1.9% in May 2021.

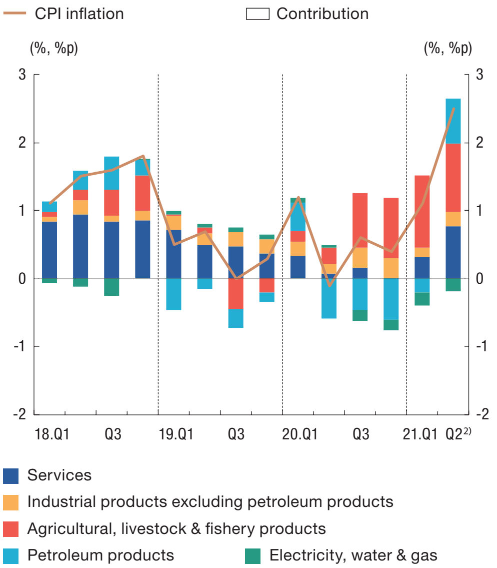
Table I-9. CPI inflation[1]

(%)

	2019	2020					2021		
	Year	Year	Q1	Q2	Q3	Q4	Q1	Apr.	May.
Consumer Price Index	0.4	0.5	1.2	-0.1	0.6	0.4	1.1	2.3	2.6
Agricultural, livestock & fishery products	-1.7	6.7	2.0	3.2	10.3	11.4	13.3	13.1	12.1
(Agricultural products)	-3.0	6.4	-0.5	-0.3	12.3	14.5	17.2	17.9	16.6
(Livestock products)	0.0	7.3	4.2	7.1	9.0	8.9	12.0	11.3	10.2
Industrial products	-0.2	-0.2	2.0	-1.4	-0.5	-0.9	-0.2	2.3	3.1
(Petroleum products)	-5.7	-7.3	10.5	-13.7	-10.7	-13.8	-4.6	13.4	23.3
(Industrial products excluding petroleum)	0.7	0.8	0.8	0.5	1.0	1.0	0.5	0.9	0.6
Electricity, water & gas	1.5	-1.4	1.5	1.3	-4.3	-4.1	-5.0	-4.9	-4.8
Services	0.9	0.3	0.6	0.1	0.3	0.0	0.6	1.3	1.5
(Housing rent)	-0.1	0.2	-0.1	0.1	0.3	0.6	0.9	1.2	1.3
(Public service charges)	-0.5	-1.9	-0.6	-1.8	-1.7	-3.5	-2.1	-1.0	-0.7
(Private service charges)	1.9	1.2	1.3	1.0	1.2	1.4	1.6	2.2	2.5
CPI for living necessities	0.2	0.4	1.9	-0.2	0.5	-0.3	1.0	2.8	3.3
CPI excluding food & energy	0.7	0.4	0.6	0.1	0.4	0.2	0.4	1.1	1.2
CPI excluding agricultural products & oils	0.9	0.7	0.8	0.5	0.8	0.7	0.9	1.4	1.5

Note: 1) Year-on-year.
Source: Statistics Korea.

Figure I-17. Contributions to CPI inflation[1]



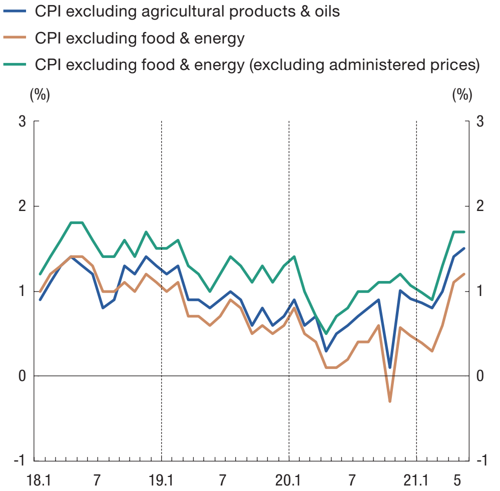
Notes: 1) Year-on-year.
2) Based on April~May 2021.
Sources: Bank of Korea, Statistics Korea.

Underlying inflation grows faster

Core inflation (excluding food and energy) has risen to the lower-1% level in the second quarter of this year, after remaining low at the 0% level since March 2019. Core inflation movements can change depending on the trend in administered prices[37], which are greatly affected by government policy. A look at core inflation excluding administered prices shows that it has gone up to the mid- to upper-1% level.

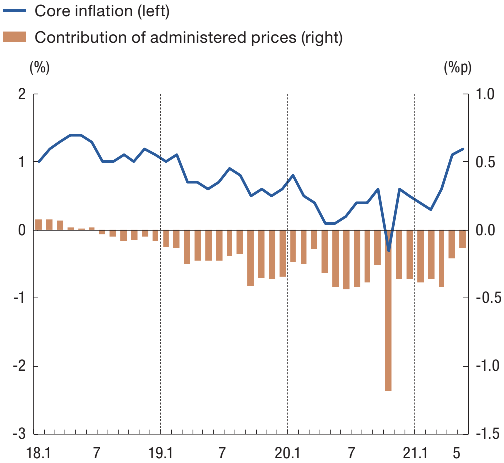
37) Administered prices refer to the prices of electricity, water and gas, public services, and school meals, which are greatly affected directly and indirectly by the government. Core inflation excluding administered prices is calculated by leaving out the administered prices from core inflation (excluding food & energy).

Figure I-18. Underlying inflation rates[1]



Note: 1) Year-on-year.
Sources: Bank of Korea, Statistics Korea.

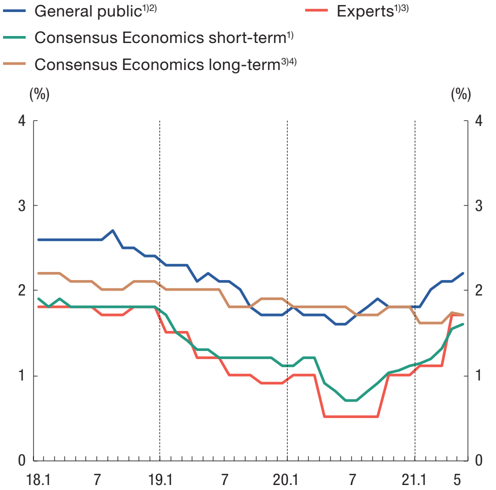
Figure I-19. Contribution[1] of administered prices to core inflation[2]



Notes: 1) Year-on-year.
2) Excluding food & energy.
Sources: Bank of Korea, Statistics Korea.

The short-term (one-year) and long-term inflation expectations of a group of experts (Consensus Economics[38]) recently rose to the mid- to upper-1% level. The short-term inflation expectation of the general public rose to the lower-2% level.

Figure I-20. Inflation expectations



Notes: 1) Expected CPI inflation rates for the next 12 months.
2) Based on new samples since September 2018.
3) Surveyed four times a year (in the first month of every quarter).
4) Expected CPI inflation rates after 5 years.
Sources: Bank of Korea, Consensus Economics.

Housing sales prices continue to rise

The upward trend in nationwide housing sales prices decelerated slightly after March, but housing price growth remained[39] considerable. By region, the high upward trend[40] was observed mainly in Gyeonggi province and Incheon in case of the Seoul Metropolitan region, and in other areas, the high growth

38) The figures are survey results of domestic and foreign investment banks, securities companies and market research institutions conducted by Consensus Economics.
39) Nationwide housing sales prices rose by 0.8% in January, 0.9% in February and 0.7% in March 2021.
40) In May 2021, housing sales prices rose by 1.0% (1.3% in March and 1.2% in April) in Gyeonggi province and 1.4% (1.3% and 1.5%) in Incheon.

trend[41] was concentrated in metropolitan cities.

Nationwide leasehold (*jeonse*) deposit prices rose at a moderately slower pace in both the Seoul Metropolitan area and other areas after the first quarter.

Table I-10. Rates of increase in housing sales and leasehold *(jeonse)* deposit prices[1]

(%)

	2019	2020				2021		
	Year	Year	Q2	Q3	Q4	Q1	Apr.	May.
Housing sales prices	-0.4	5.4	0.8	1.5	1.8	2.4	0.7	0.7
Seoul Metropolitan area	0.5	6.5	1.3	1.8	1.5	3.0	0.9	0.9
(Seoul)	1.2	2.7	0.0	1.4	0.6	1.3	0.4	0.4
Other areas	-1.1	4.3	0.4	1.3	2.0	2.0	0.5	0.6
Sales prices of apartments for reconstruction	12.3	12.6	1.8	5.3	3.3	3.1	0.8	0.6
Leasehold *(jeonse)* deposit prices	-1.3	4.6	0.5	1.3	2.1	1.8	0.4	0.4
Seoul Metropolitan area	-0.8	5.6	0.7	1.6	2.2	1.9	0.4	0.4
(Seoul)	-0.4	3.7	0.3	1.1	1.5	1.2	0.2	0.2
Other areas	-1.7	3.7	0.3	1.0	2.0	1.7	0.4	0.4

Note: 1) Compared with the last month of the preceding quarter.
Sources: Korea Real Estate Board, Real Estate 114.

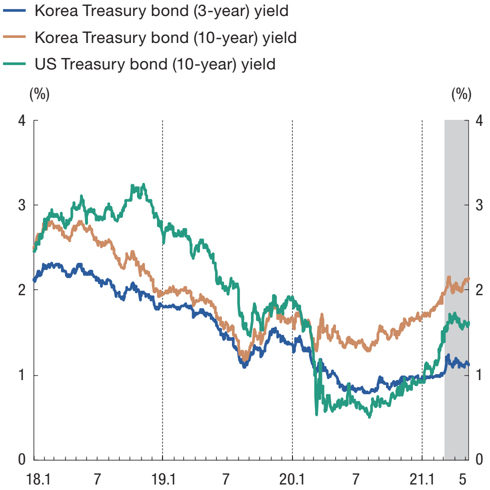
41) Housing sales prices in metropolitan cities other than Seoul rose by 0.7% in May 2021 (0.8% in March, and 0.7% in April).

4. Financial and Foreign Exchange Markets

Treasury bond yields rise sharply

Korea Treasury bond yields rose rapidly entering March, driven by multiple factors such as expectations for domestic and global economic recoveries, rising US Treasury bond yields, and net selling of Korea Treasury bond futures posted by foreign investors. The 10-year bond yield climbed more steeply to 2.15% in mid-March, continuing on an uptrend seen since the second half of 2020. The 3-year Treasury bond yield, which had climbed within a relatively limited range, rose sharply to 1.24% reflecting the pent-up upward pressures. However, Korea Treasury bond yields have fluctuated since mid-March, in line with adjustments in bond yields following a short-term rise, changes in US Treasury bond yields, and supply and demand conditions for Korea Treasury bonds (1.16% for 3-year and 2.13% for 10-year as of May 26).

Figure I-21. Korea and US Treasury bond yields



Sources: Korea Financial Investment Association, Bloomberg.

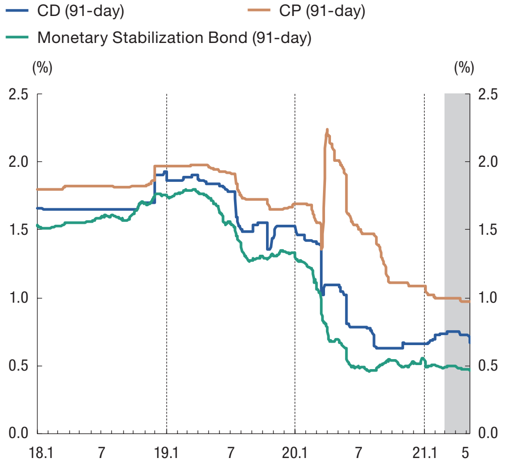
Short-term market interest rates decline

Short-term market interest rates showed a modest downturn driven by the increase in money market fund inflows. The Monetary Stabilization Bond (91-day) rate declined slightly in April, after generally remaining at the Base Rate level. CD rates (91-day) fell, affected by a drop[42)] in bank debenture yields (3-month, AAA-rated), and the increase in investment demand as a result of the tightening of RP market regulations.[43)] CP rates (91-day, A1-rated) also declined from mid-April, together with other interest rates.

42) The yield for bank debentures (3-month, AAA-rated) (average of four private bond evaluation companies): 0.73% at end-February 2021 → 0.77% at end-March → 0.68% at end-April → 0.63% on May 26, 2021.

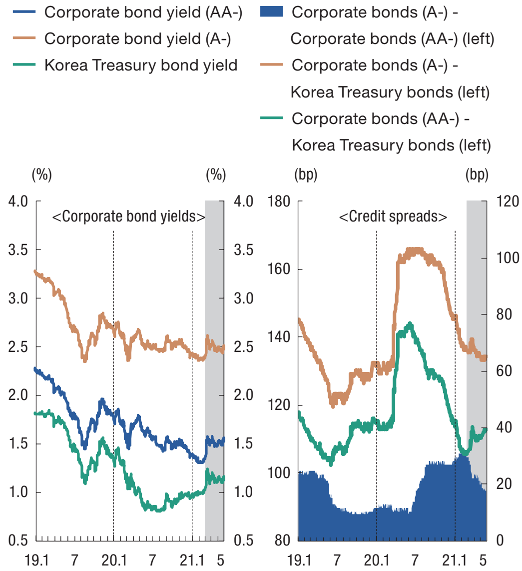
43) Starting from July 2020, RP sellers are required to hold a certain proportion of their outstanding RP in cash equivalents (cash, deposits, CD, etc). This regulation was initially implemented at a relatively lenient level (1% for overnight RP in July 2020 → 10% for overnight RP, 5% for 2~3-day RP, and 3% for 4~6-day RP from August 2020 to April 2021) to reduce the implementation burden on RP sellers, but was normalized in May 2021 (20% for overnight, 10% for 2~3-day, and 5% for 4~6-day RP).

Figure I-22. Short-term interest rates[1)]



Note: 1) Monetary Stabilization Bond rates based on average rates estimated by private credit rating agencies; CD and CP rates based on final quoted yields.
Source: Korea Financial Investment Association.

Figure I-23. Corporate bond yields and credit spreads[1)]



Note: 1) 3-year maturity basis; Treasury bond yields based on final quoted yields, and corporate bond yields on average yields estimated by four private credit rating agencies.
Source: Korea Financial Investment Association.

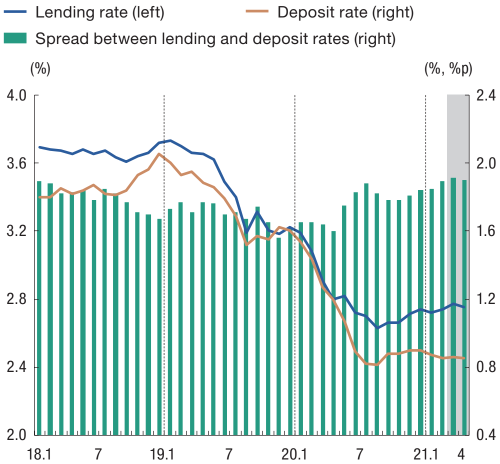
Corporate bond credit spread widens for prime while narrowing for subprime

The credit spread for corporate bonds (3-year) widened in March as the sudden fluctuations in Treasury bond yields led to a contraction in investor sentiment and a reduction in yield incentives. By credit rating, the credit spread for prime bonds (AA-rated), which had previously narrowed considerably, rose sharply from 32bp at end-February to 41bp on March 23, 2021. For subprime bonds (A-rated), which are a more attractive investment due to their higher yields, the credit spread climbed only modestly from 137bp to 140bp during the same period. Since early April when Treasury bond yields became less volatile, credit spreads have declined gradually (40bp for prime and 135bp for subprime bonds as of May 26, 2021).

Bank lending and deposit rates decline after rising

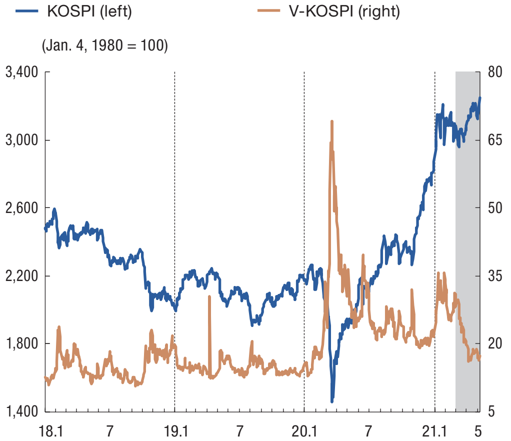
Bank lending rates (new loans basis) rose in March and fell in April, 2021. The rise in March was driven by the increase in long- and short-term market interest rates as well as banks' efforts to rein in the household debt growth. In April, however, the lending rates declined, especially those on corporate loans, affected by the fall in short-term market rates including bank debenture rates. Deposit rates (new business) climbed in March, and then dropped in April.

Figure I-24. Bank lending/deposit rates and spread



Source: Bank of Korea.

Figure I-25. KOSPI and stock volatility index



Source: Korea Securities Compution Corporation.

Stock prices fall after a steep rise

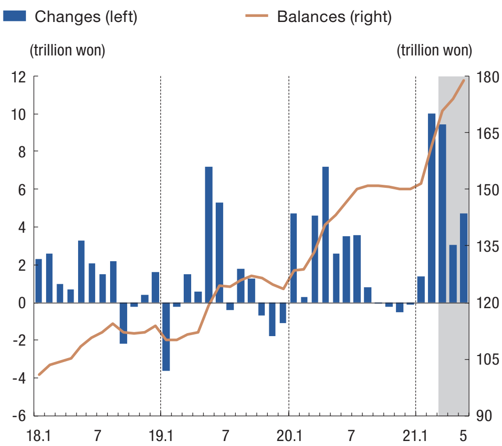
Stock prices (KOSPI) had moved at around 3,000 up until mid-March, affected by the widened volatility in the US stock market (NASDAQ), but then rose later that month, driven by buoyed investor sentiment following improved major economic indicators at home and abroad, heightened expectations for better corporate performance, and the US government's announcement of a large-scale infrastructure investment plan. The index rose further in May, setting a new record (3,249 on May 10), as expectations rose for economic recoveries at home and abroad. From mid-May on, it dropped, affected by inflation concerns in the United States and the resurgence of COVID-19 in major Asian countries. The stock price volatility index (V-KOSPI) fell to the level seen in early 2020 before the COVID-19 outbreak, reflecting eased risk aversion.

Bond investment by foreigners increases while stock investment declines

Foreigners' domestic securities investment increased overall, as a decline in their stock investment was offset by a large increase in their bond investment.

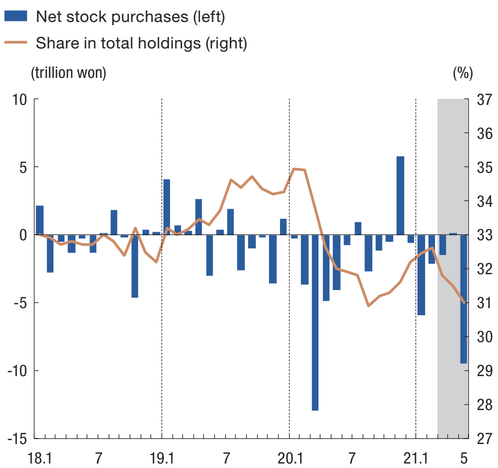
Bond investment rose sharply for two consecutive months, up by 10.0 trillion won in February and by 9.4 trillion won in March, due to relatively high domestic yields. The uptrend continued after April, though at a slower pace. Foreigners' outstanding bond holdings stood at 178.7 trillion won as of May 26, 2021.

Figure I-26. Changes[1)] in and balances[1)] of foreigners' bond holdings



Note: 1) Based on May 26 for May 2021 figures.
Source: Financial Supervisory Service.

Figure I-27. Foreigners' net stock purchases[1)2)] and share in total holdings[1)3)]



Notes: 1) Based on May 26 for May 2021 figures.
2) Sum of net purchases in KOSPI and KOSDAQ markets.
3) Based on stock market capitalization.
Source: Korea Securities Compution Corporation.

Foreigners continued to engage in net selling of stocks in March, influenced by portfolio adjustments by overseas pension funds. It then showed modest net buying in April, reflecting an easing of global risk aversion. In May, however, it shifted to large net selling, driven by US inflation concerns and the COVID-19 resurgence in major Asian countries.

Corporate lending grows in size

Indirect and direct corporate financing have continued to grow rapidly this year.

Corporate lending by banks grew at a higher rate in the first quarter, driven mainly by lending to small- and medium-sized enterprises (SMEs). SME lending increased substantially as demand from SMEs and sole proprietors for COVID-19-related funds and financial support[44)] from the government and banks continued. Lending to large enterprises turned to modest growth. Corporate lending by non-bank institutions, however, posted smaller growth. In April, corporate lending by banks increased considerably to both SMEs and large enterprises, driven by the re-extension of loans

44) The financial support program for small businesses and policy financing for small- and medium-sized and mid-market enterprises remained in place, while the maturity extension and moratorium of loans for businesses affected by COVID-19 were extended for another six months up until September 30, 2021 (announced by the Financial Services Commission on March 3, 2021).

that had been redeemed to meet quarter-end financial ratios, and by demand for loans related to value-added tax payments.

Direct funding by corporations rose sharply in the first quarter. Net issuance of corporate bonds[45] increased significantly, as investment demand remained strong and some large companies expanded their issuance. The issuance of stocks also rose steeply as a result of large-scale IPOs[46] and paid-in capital increases by some companies.

Table I-11. Corporate funding[1]

(trillion won, %)

		2019	2020					2021	
		Year	Year	Q1	Q2	Q3	Q4	Q1	Apr.[2]
Corporate loans	Total	90.2	169.6	47.2	62.9	32.9	26.6	30.1	··
	(Rate of change)[3]	(9.0)	(15.5)	(11.4)	(14.7)	(15.6)	(15.5)	(11.7)	··
	Banks	47.7	110.8	34.3	44.5	19.6	12.4	23.6	11.4
	(Large firms)	-1.8	20.9	15.6	10.9	-0.8	-4.8	0.9	2.0
	(SMEs)	49.4	90.0	18.8	33.6	20.3	17.2	22.7	9.5
	Non-banks[4]	42.5	58.8	12.9	18.4	13.4	14.2	6.5	··
Direct funding	Net corporate bond issuance[5]	15.8	15.5	2.9	7.8	3.0	1.7	7.8	3.2
	Net CP·short-term bond issuance[6]	-0.4	-0.1	7.8	-3.6	-1.6	-2.6	5.6	2.3
	Stock issuance[7]	6.3	11.0	0.7	1.7	3.5	5.1	8.9	0.2

Notes: 1) Based on changes in balances during the periods.
2) Bank of Korea advance estimates for April 2021 figures.
3) Year-on-year growth rate of loan balances.
4) Loans by mutual savings banks, credit unions, mutual credit cooperatives, community credit cooperatives, and insurance companies (including public and other lending).
5) Corporate bonds issued through public offering by non-financial corporations (excluding ABSs but including P-CBOs).
6) Based on non-financial corporations.
7) Initial public offerings and paid-in capital increases.

Sources: Bank of Korea, Financial Supervisory Service, Korea Securities Depository, Korea Credit Information Services.

Household lending continues to grow

Household lending (based on depository institutions) maintained strong growth, led mainly by home mortgage loans.

45) In terms of credit ratings, in January this year, net issuance was mainly focused on prime bonds due to solid investment demand for corporate bonds.

(trillion won)

	2019	2020					2021	
	Year	Year	Q1	Q2	Q3	Q4	Q1	Apr.
Prime bonds (rated AA and above)	9.8	10.9	3.0	6.4	2.2	-0.7	5.0	3.8
Subprime bonds (rated AA and below)	6.1	0.5	-0.1	-0.2	-0.6	1.4	2.2	-1.1

Source: Korea Securities Depository.

46) IPOs between January and April 2021 included SK Bioscience (Mar. 9~10) and SK IE Technology (Apr. 28~29, 2021).

The first quarter growth in household lending by banks was a similar level to that in the quarter before, reflecting the sustained demand for funds related to housing purchases and leasehold (*jeonse*) deposits. Other loans, however, grew at a far slower pace, affected by the government's scheme to rein in unsecured loans that took effect[47] on November 30, 2020. In April, amid the continued growth in mortgage loans, other loans soared temporarily, especially unsecured loans, due mainly to demand for funds related to subscription deposits for IPOs.[48]

Growth in household loans by non-banks slowed in the first quarter, driven by loans from credit cooperatives and community credit cooperatives.

Table I-12. Household lending by depository institutions[1)]

(trillion won, %)

	2019	2020					2021	
	Year	Year	Q1	Q2	Q3	Q4	Q1	Apr.[2)]
Total	56.3	108.1	20.3	18.3	32.1	37.5	26.3	‥
(Rate of change)[3)]	(4.9)	(9.0)	(6.4)	(6.5)	(7.8)	(9.0)	(9.3)	‥
Commercial & specialized bank loans[4)]	60.7	100.5	22.6	18.0	29.0	30.9	20.8	16.0
(Mortgage loans)[4)5)]	45.8	68.3	18.4	13.9	16.6	19.3	17.1	4.2
(Other loans)	14.9	32.2	4.2	4.1	12.3	11.5	3.6	11.8
Non-bank depository institution loans[4)]	-4.5	7.6	-2.3	0.2	3.1	6.6	5.6	‥
(Mutual credit cooperatives)	0.6	6.0	-0.9	1.1	2.1	3.7	3.8	‥
(Credit unions)	-0.8	-0.7	-0.7	-0.4	-0.1	0.5	0.0	‥
(Community credit cooperatives)	-6.8	-3.2	-1.5	-1.3	-0.8	0.4	-0.1	‥
(Mutual savings banks)	2.6	5.5	0.8	0.9	1.8	2.0	1.9	‥
(Others)[6)]	-0.1	-0.1	-0.1	-0.1	0.0	0.1	-0.1	‥

Notes: 1) Based on changes in balances during the periods.
2) Based on Bank of Korea advance estimate.
3) Year-on-year growth rate of loan balances.
4) Including mortgage transfers.
5) Including housing-related loans, such as loans for leasehold (*jeonse*) deposits, moving expenses and intermediate payments, that are not collateralized by houses.
6) Trust accounts of banks and postal savings.
Sources: Bank of Korea, Korea Housing Finance Corporation.

Korean won/US dollar exchange rate fluctuates

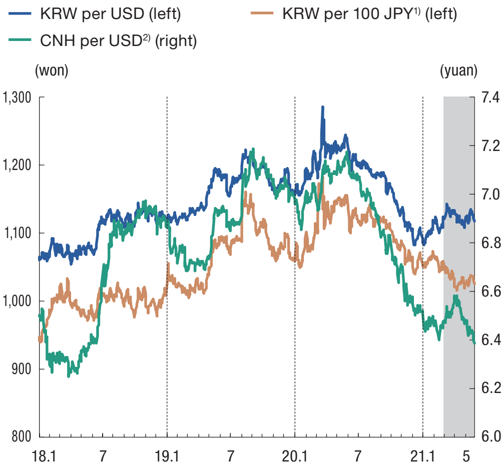
The Korean won/US dollar exchange rate fell after rising. In early March, it rose from the 1,120 to 1,140 won-per-dollar range, reflecting the global strengthening of the dollar[49]

47) In order to manage unsecured loans at an appropriate level, the government introduced regulations including a ban on large unsecured loans (exceeding 100 million won) for purchasing homes, and DSR rules applied for individual borrowers to large unsecured loans by high-income borrowers (with annual income exceeding 80 million won). (「Household Debt Management Regulations」, announced by the Financial Services Committee on November 13, 2020)
48) Credit loans temporarily increased significantly due to the demand for funds for the subscription margin for public offering shares of SK IE Technology (Apr. 28~29, 2021).
49) The global dollar appreciation was mainly attributable to the rise in the 10-year US Treasury yields from 1.4% (end-February) to 1.7% (end-March) due to the passage of the additional stimulus package by the Biden administration in the House of Representatives, inflation expectations, and the higher-than-expected non-farm payroll index in March, and the deepening of the resurgence of the COVID-19 in the euro area.

resulting from the sharp rise in US Treasury yields. It then dropped to 1,110 won-per-dollar range in April, impacted by the weakening of the US dollar following the decelerated rise in US Treasury yields, improved domestic economic indicators[50], and the wider rollout of COVID-19 vaccines and expectations for economic recovery in advanced economies. In May, the exchange rate fluctuated[51] driven by changes in market expectations about whether the US Federal Reserve will continue with its accommodative monetary policy, with concerns about US inflation resurfacing.

The Korean won/Japanese yen exchange rate showed different movement than the won/dollar rate, affected mainly by the movement of the yen/dollar rate, which was driven by the spread[52] between US and Japanese bond yields. The won/yen rate fell rapidly in March, when the yen weakened considerably[53] against the US dollar as the difference between US and Japanese yields widened in line with a sharp rise in the US Treasury yield. Entering April, the won/yen exchange rate rebounded slightly with the US Treasury yield falling, and then fluctuated driven by expectations for the global economic recovery and concerns about inflation.

Figure I-28. Exchange rates



Notes: 1) Final transaction standard rate offered to customers posted by Hana Bank during the day.
2) Based on offshore rates.
Sources: Bank of Korea, Hana Bank, Reuters.

The volatility in the Korean won/US dollar exchange rate generally moved up and down at the 2019 pre-pandemic level, except in early May when it expanded temporarily due to concerns about an early tapering of the Fed's quantitative easing in line with the reemergence of US inflation concerns.

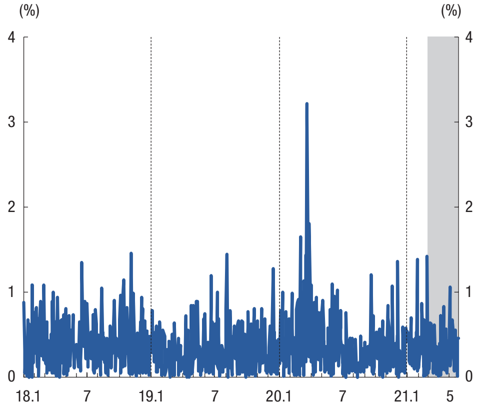
50) Real GDP (relative to the preceding quarter): 1.1% in Q4 2020 → 1.7% in Q1 2021 (preliminary, projection 1.1%).

51) The co-movement between the won/dollar and yuan/dollar exchange rates, which had strengthened in the second half of 2020 as they both fell rapidly, weakened significantly this year.

52) The spread between US and Japanese 10-year Treasury yields: 1.24%p at end-February 2021 → 1.65%p at end-March → 1.53%p at end-April.

53) As the yen/dollar exchange rate rose more steeply than the won/dollar rate in early March, the won/yen rate declined despite the rise in the won/dollar exchange rate.

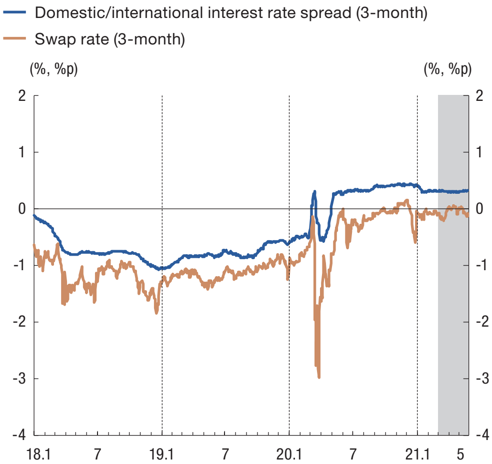
Figure I-29. KRW per USD exchange rate volatility[1)]



Note: 1) Daily change rate of the exchange rate.
Source: Bank of Korea.

The swap rate (3-month maturity) dropped temporarily, owing to concerns[54)] about the March FOMC, and then rose on favorable US dollar liquidity conditions. It fell back in May, however, as investor sentiment contracted due to inflation worries in the United States.

Figure I-30. Domestic/international interest rate spread[1)] and swap rate



Note: 1) Yield on Korean Monetary Stabilization Bonds (MSBs) (3-month) - US LIBOR (3-month).
Source: Bank of Korea.

Financial Conditions Index rises, and liquidity growth continues

The Financial Conditions Index[55)] rose considerably in April compared to January, driven by a decline in real short-term interest rates and the stock market rally. M2 (broad money) growth recorded 11.0% in March, up from 9.8% in December 2020, led mainly by faster growth in household and corporate lending.

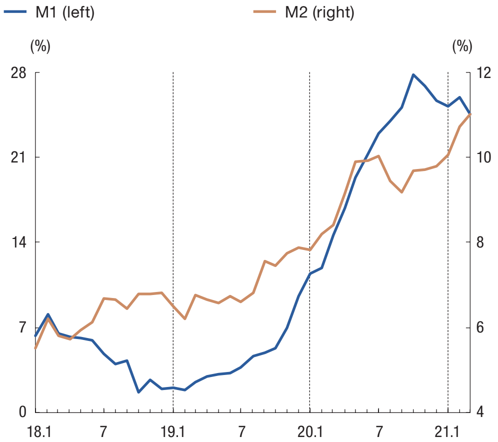
Figure I-31. Financial Conditions Index[1)]

Note: 1) If the figure is above (below) zero, the long-term equilibrium, it means that financial conditions are accommodative (tight). The analysis period is from January 2000 to April 2021.
Source: Bank of Korea.

54) There was wariness against a possible shift in the Fed's accommodative monetary policy, in line with concerns about inflation and rising long-term interest rates in the United States.

55) The Financial Conditions Index (FCI) assesses whether financial conditions are accommodative or tight, and is calculated by standardizing the weighted sum of six major financial variables that are important in assessing financial conditions, such as interest rates, exchange rates and stock prices.

Figure I-32. Growth rate of key money supply indicators[1)]



Note: 1) Period-average basis; year-on-year.

Source: Bank of Korea.

Box I-1.

Assessment of Post-COVID-19 Recovery Trend by Industry

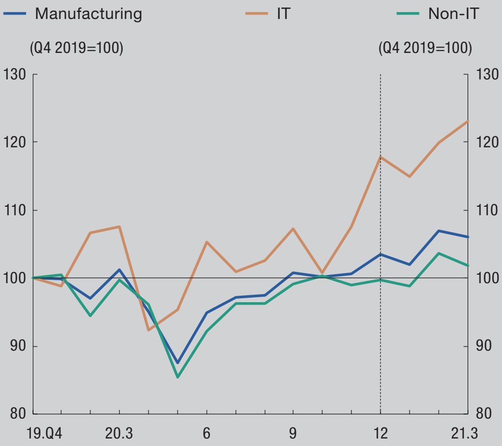
The Korean economy has recently been recovering rapidly from the slump triggered by the COVID-19 shock on the back of improvements in the global economy. Whether the recovery is underway in the broader economy or not provides an important implication to judge the anchoring of the domestic economy's growth trend.

This section analyzes the background behind the recovery of major industries after COVID-19, centering around the manufacturing and service industries[1] and the degree of their recovery, and examines[2] future conditions.

(Overall conditions by industry)

First, manufacturing production recovered to the pre-COVID-19 level in the second half of last year, driven by the IT sector boom, and has further expanded since then. The IT manufacturing sector has continued to grow, emerging rapidly from its sluggishness, as non-face-to-face activities expanded. On the other hand, the non-IT manufacturing sector showed a relatively modest recovery compared to the IT sector.

Manufacturing production



Source: Statistics Korea.

Meanwhile, service production recovered[3] to the pre-COVID-19 level in March this year, as the face-to-face service sector[4] recovered slowly. The recovery of the face-to-face service industry was delayed with the repeated resurgence of COVID-19. However, the face-to-face service industry improved after social distancing measures were relaxed in February this year, and the non-face-to-face service industry continued to record favorable growth.

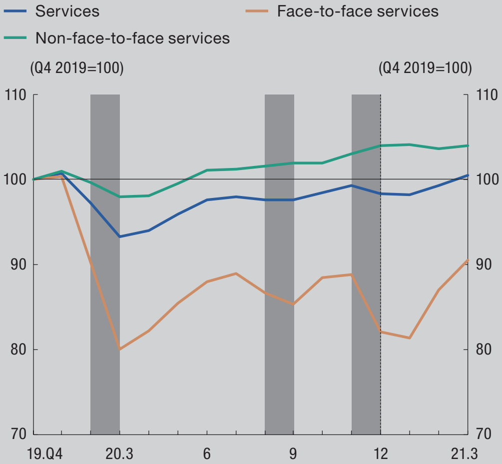
1) As of 2020, the manufacturing (24.8%) and service (57.1%) industries account for about 80% of GDP.

2) We assess recovery trends by industry, mainly using the business trend data from Statistics Korea. As these data differ from GDP statistics, a major assessment indicator for economic conditions, in terms of composition and weight, they should be interpreted with caution.

3) The production index recovered to the pre-COVID-19 pandemic level in March this year on a monthly basis, but was below the COVID-19 level on a quarterly basis.

4) The face-to-face service industry encompasses accommodation & food services, transportation & warehousing, educational services, and arts, sports & leisure services.

Service industry production[1)]



Note: 1) Shaded areas represent the period of COVID-19 spread.
Source: Statistics Korea.

(Manufacturing industry)

The IT manufacturing sector has continued on an upward trend after recovering rapidly to the pre-COVID-19 level on the back of buoyant demand for PCs, mobiles and servers. The semiconductor business has maintained high growth on global IT firms' resumption of server investment and surging demand for foundries amid a spike in demand for PCs as non-face-to-face activities such as working from home, online education, and shopping increased significantly. Chinese companies' securing[5)] of chip inventories after sanctions on Huawei had a positive impact on Korean semiconductor production. Display production had continued rising thanks to improved profitability[6)] in the LCD sector, but shifted to a decline in the first quarter of this year, as LCD panel production fell[7)] as businesses shifted to OLED. Smartphone production remained on the rise, driven by demand for replacement phones with the resumption of economic activities, and by benefits from restrictions[8)] on Huawei.

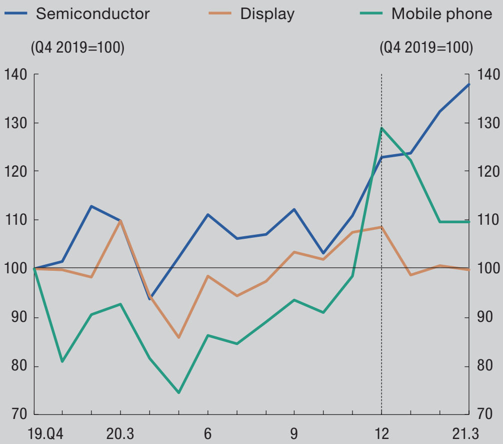
Growth rate in IT manufacturing production

(QoQ, %)

	2020				2021
	Q1	Q2	Q3	Q4	Q1
IT	4.3	-6.4	6.0	4.9	9.4
(Semiconductor)	8.1	-5.3	6.0	3.5	16.9
(Display)	2.7	-9.5	5.9	7.7	-7.1
(Mobile phone)	-11.8	-8.3	10.1	19.3	7.4

Source: Statistics Korea.

Production in IT manufacturing sectors



Source: Statistics Korea.

5) Growth rate in semiconductor exports to China (YoY, %): -6.4% between Jan. and Apr. in 2020, +13.9% between May and Dec. in 2020, and +15.8% between Jan. and Apr. 2021.

6) Prices of LCD panels for 55-inch TVs (average sales price): 109.3 dollars in Q2 2020 → 128.7 dollars in Q3 → 165.7 dollars in Q4 → 191.3 dollars in Q1 2021 (source: Omdia).

7) Samsung Display reduced its LCD production capacities to one fourth of the previous year's level (389,000 panels per month in 2020 → 94,000 panels per month in 2021).

8) Market experts expect that Chinese local companies (Oppo, Vivo, and Xiomi) will replace Huawei within China, but experts in Western Europe expect Samsung, Apple and Chinese companies to each occupy one-third of the market share in China.

The non-IT manufacturing sector continued to improve thanks to a global economic recovery and expanded infrastructure investment in major economies. It recovered to the pre-COVID-19 level in the second half of 2020. The improvement in auto sector continued, led by exports.[9] Auto exports to the US recovered rapidly on the back of improved consumer sentiment stemming from large-scale economic stimulus packages and expanded vaccinations and of growing preferences for cars after COVID-19. Domestic demand remained robust after the second quarter of last year, owing to consumption tax cuts and new car effects. Growth in the petrochemical sector expanded due to the reactivation[10] of domestic facilities whose operation had been suspended because of accidents, amid continued demand[11] related to COVID-19. The delay[12] in normalization of production facilities in the North American region also contributed to the growth in the Korean petrochemical sector.

Growth rate in non-IT manufacturing sectors

(QoQ, %)

	2020				2021
	Q1	Q2	Q3	Q4	Q1
Non-IT	-1.7	-7.1	6.6	2.5	1.7
(Auto)	-7.8	-10.4	23.0	-1.0	4.8
(Petrochemical)	-0.5	-8.3	6.1	2.7	3.6
(Machinery)	-2.6	-3.1	6.5	5.1	2.2
(Steel)	0.8	-11.1	3.0	7.9	0.4
(Shipbuilding)	-1.5	-8.0	0.4	-0.7	-12.6

Source: Statistics Korea.

The machinery sector continued to grow as infrastructure investment expanded[13] in major countries and as domestic semiconductor facilities investment[14] continued. The steel sector showed a recovery trend, as demand from downstream industries such as construction, autos and shipbuilding gradually improved with the global economic recovery, and as steel production in China decreased.[15] However, the upward trend decelerated temporarily in the first quarter, affected by reduced operating days and repair of facilities. The shipbuilding industry has been on the decline, influenced by a reduction in orders that has continued since 2018, despite a recent spike in new orders.[16] New orders fell

9) The value of automotive exports (YoY): -8.1% in Q1 2020 → -45.2% in Q2 → -4.0% in Q3 → +2.4% in Q4 → +22.1% in Q1 2021.

10) The LG Chemical production plant (in Yeosu) and Lotte Chemical production plant (in Daesan, resumed operation on Dec. 30, 2020) were reactivated in the first quarter this year.

11) The demand has been seen in products related to non-face-to-face activities, such as disposable packaging and containers (PE/PP) and electronics and IT products from increased indoor activities (ABS/PC).

12) About 60% of production was suspended in the United States due to the cold wave, and around 50% of the suspended facilities were reactivated as of the end of April.

13) Rate of growth in exports of general machinery to China: -0.7% in Q3 2020 → -0.5% in Q4 → 32.0% in Q1 2021 (source: Korea Association of Machinery Industry).

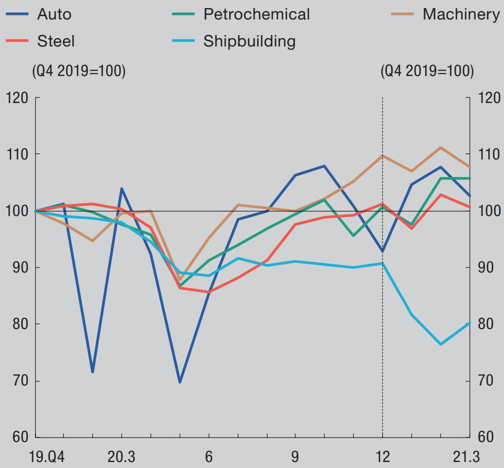
14) Semiconductor facilities investment amounted to about 12.8 trillion won in the first quarter (8.5 trillion won by Samsung Electronics, 4.4 trillion won by SK Hynix), a 54% increase from the same period of last year (about 8.4 trillion won).

15) As part of its effort to strengthen environmental policy, the city of Tangshan, the biggest steel-producing city in China, temporarily cut production in winter time (from Nov. 1, 2020 to Mar. 31, 2021), and extended the production cut period to the end of this year.

16) In the first quarter, new orders for domestic shipbuilders amounted to 5.622 million CGT, a significant increase from the same period of last year (+920.1%, around 0.55 million CGT).

gradually from 13.08 million CGT in 2018 to 9.43 million CGT in 2019, and to 8.19 million CGT in 2020. The effect of the recent hikes in orders is expected to be reflected in production after the second half of this year.

Non-IT manufacturing production



Source: Statistics Korea.

(Service industry)

The face-to-face service industry has improved gradually entering this year after remaining in a slump with the prolongation of COVID-19. The accommodation & food service industry declined sharply in December 2020 (-27.6%, month-on-month), but recovered[17)] gradually with the easing of social distancing measures from February this year. The transportation industry continued to improve as transportation of cargo increased with booming exports in line with the global economic recovery. In particular, daily average exports amounted to about 2.3 billion dollars in February this year, about a 15% increase[18)] compared to 2019 (about 2 billion dollars). The art & sports industry had been in deep slump from December last year, but showed a recovery trend[19)] as the number of viitors to amusement parks increased after social distancing measures were eased.

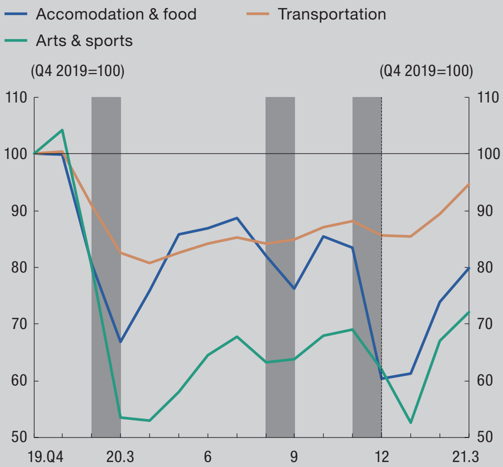
Growth rate in face-to-face service production

(QoQ, %)

	2020				2021			
	Q1	Q2	Q3	Q4	Q1	Jan.	Feb.	Mar.
Face-to-face	-9.8	-5.5	2.0	-0.5	-0.3	-1.0	7.1	3.8
(Accomodation & food)	-17.6	0.5	-0.6	-7.2	-6.4	1.3	20.8	7.8
(Transportation)	-8.6	-9.8	2.8	2.7	3.3	-0.2	4.7	5.6
(Arts & sports)	-20.6	-26.4	11.1	2.2	-3.6	-15.1	28.0	7.0

Source: Statistics Korea.

Production in face-to-face service industries[1)]



Note: 1) Shaded areas represent the period of COVID-19 spread.
Source: Statistics Korea.

17) Producer Price Index for accommodation & food services (MoM): -27.6% in Dec. 2020 → +1.3% in Jan. 2021 → +20.6% in Feb. 2021 → +8.1% in Mar. 2021.

18) Daily average export amount: 1,990 million dollars in 2019 → 2,139 million dollars in Dec. 2020 → 2,134 million dollars in Jan. 2021 → 2,293 million dollars in Feb. 2021 → 2,239 million dollars in Mar. 2021 → 2,134 million dollars in Apr. 2021.

19) Producer Price Index for arts & sports & leisure (MoM): -10.1% in Dec. 2020 → -15.1% in Jan. 2021 → +28.0% in Feb. 2021 → +7.0% in Mar. 2021.

The non-face-to-face service industry emerged rapidly from its sluggishness after the spread of COVID-19, and continued its growth trend, supported by improved consumer sentiment and robust asset markets. The wholesale & retail industry continued its recovery pace[20] as non-face-to-face sales remained strong with active online transactions. The financial and insurance industries continued to grow, led by banks and securities firms, as the increase in stock transactions[21] and lending and deposits[22] continued. The monthly average amount of lending and deposits and stock transactions recorded all-time highs in the first quarter. The real estate industry continued to decline as housing transactions fell[23] in the first quarter of this year, amid sluggish conditions in which leases continued to fall for eight consecutive months since August last year.

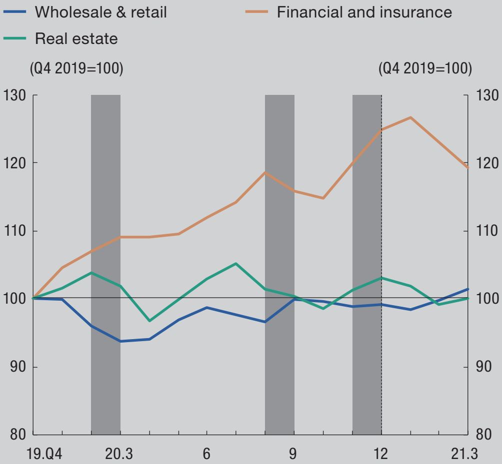
Growth rate in non-face-to-face service industry production

(QoQ, %)

	2020				2021
	Q1	Q2	Q3	Q4	Q1
Non-face-to-face	-0.5	0.0	2.0	1.4	1.1
(Wholesale & retail)	-3.4	0.0	1.6	1.1	0.6
(Financial and insurance)	6.8	3.1	5.5	3.0	2.8
(Real estate)	2.4	-2.6	2.4	-1.3	-0.6

Source: Statistics Korea.

Production in non-face-to-face service industries[1)]



Note: 1) The shaded areas represent the period of COVID-19 spread.
Source: Statistics Korea.

(Contribution to GDP growth by industry)

Looking at production trends by industry in terms of their contribution to GDP growth, it is assessed that the manufacturing industry has led the economic recovery since COVID-19 on the back of high growth in the IT sector and improved business in the non-IT sector. The manufacturing sector growth fell 9.4% in the second quarter of last year owing to falling exports stemming from the global spread of COVID-19, but recovered rapidly after the third quarter, which contributed greatly to GDP growth. On the other hand, the contribution of the service industry to growth was less than half of that of the manufacturing sector, despite its high

20) Producer Price Index for wholesale and retail services (QoQ, %): +1.1% in Q4 2020 → -0.8% in Jan. 2021 → +1.3% in Feb. → +1.5% in Mar.

21) Monthly average stock transactions funds (KOSPI and KOSDAQ, trillion won): 309.3 trillion won in Q1 2020 → 442.8 trillion won in Q2 → 588.9 trillion won in Q3 → 51.6 trillion won in Q4 → 666.8 trillion won in Q1 2021 (source: Korea Exchange).

22) Changes in monthly average lending and deposits (trillion won): 61.3 trillion won in Q1 2020 → 70.0 trillion won in Q2 → 42.3 trillion won in Q3 → 54.8 trillion won in Q4 → 79.8 trillion won in Q1 2021 (source: Bank of Korea).

23) Housing sales transactions (10,000 units): 32.5 in Q1 2020 → 29.6 in Q2 → 30.9 in Q3 → 35.0 in Q4 → 28.0 in Q1 2021 (source: Korea Real Estate Board).

proportion in GDP, as the face-to-face service industry remained sluggish.

Contribution to growth by sector[1)]

(QoQ, %p, %)

	2020				2021
	Q1	Q2	Q3	Q4	Q1
GDP	-1.3	-3.2	2.2	1.1	1.7
Manufacturing industry	-0.0 (-0.1)	-2.4 (-9.4)	1.8 (7.5)	0.8 (3.1)	1.0 (3.8)
Service industry	-1.4 (-2.5)	-0.5 (-0.8)	0.6 (1.0)	0.3 (0.6)	0.4 (0.7)

Note: 1) Figures in parentheses refer to growth rates.
Source: Bank of Korea.

(Assessment and projection)

After looking at production trends in major domestic industries since the spread of COVID-19, we found that production in most industries except for face-to-face services have risen above the pre-COVID-19 level.

Going forward, the manufacturing industry is forecast to continue growing in line with the global economic recovery, while the service industry recovers at a faster pace with improvement in the face-to-face service industry. The IT manufacturing sector is projected to grow, led by the semiconductor sector, and the non-IT manufacturing sector is expected to improve continuously on the back of growing demand for durable goods[24)] and expanded infrastructure investment[25)]. The service industry is forecast to show recovery in the second half, led by face-to-face services such as food & accommodation and transportation as vaccinations expand.

24) Projected figures for global auto demand in 2021 (YoY): +10.9% in Q3 2020 → +11.4% in Q4 → +12.2% in Q1 2021 (source: LMC Automotive).

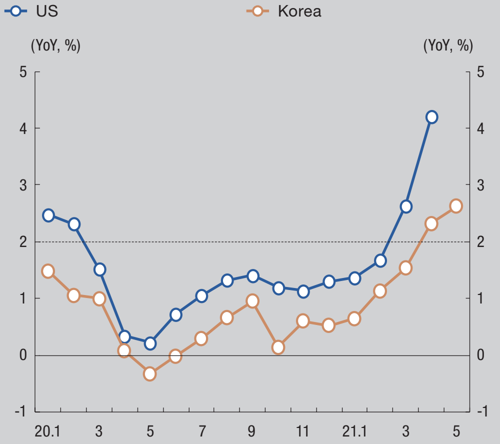
25) China plans to invest around 8,262 trillion won in areas such as 5G, data centers, rebuilding of outdated facilities in rural areas, and medium- and large-scale civil engineering over the next five years (announced in May 2020).

Box I-2.

Examination of Recent Inflation Conditions

With the possibility of higher inflation being recently raised in the US, due mainly to the large US stimulus package, the CPI growth rate in April 2021 soared[1] to its highest level (4.2%) since September 2008. Consumer price inflation in Korea also exceeded the inflation target (2%) during April and May, affected largely by rises in global oil and agricultural and livestock product prices, and inflation concerns have increased[2] accordingly. In this section, we examine the recent inflation developments and conditions and assess the future inflation trend.

Consumer price inflation in the US and Korea



Sources: Statistics Korea, U.S. Bureau of Labor Statistics.

(Recent inflation developments)

First, looking at the recent inflation developments in Korea, consumer price inflation has accelerated significantly since the beginning of this year, to stand at 2.3% in April and 2.6%[3] in May. Core inflation excluding food and energy, whose prices are highly volatile, has also risen from the 0% level since March 2019 to the lower-1% level during April and May.

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1) The PCE inflation rate that the US Federal Reserve uses to gauge its inflation target also rose significantly from 1.4% in January to 3.6% in April this year.

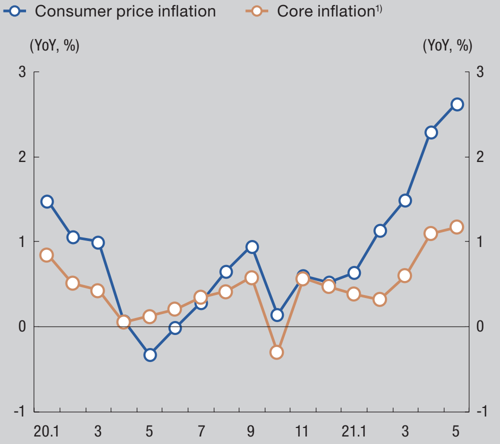
2) Major institutions have raised their forecasts for Korea's consumer price inflation this year, in reflection of the recent inflation acceleration and changes in conditions.

Forecasting institution	Bank of Korea	Korea Development Institute	Korea Institute of Finance	LG Economic Research Institute	Consensus Economics
CPI growth forecast[1]	1.3% → 1.8% (Feb. 2021) (May. 2021)	0.7% → 1.7% (Nov. 2020) (May. 2021)	0.8% → 1.8% (Dec. 2020) (May. 2021)	1.0% → 1.6% (Aug. 2020) (Apr. 2021)	1.1% → 1.7% (Feb. 2021) (May. 2021)

Note: 1) Months in in parentheses represent the timing of forecasts.
Source: Respective institutions.

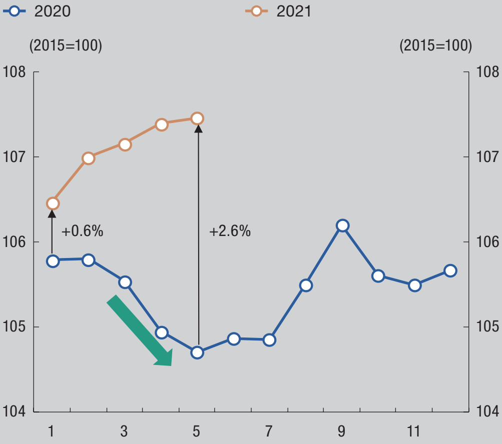
3) This is the highest level since March 2021 (2.7%).

Consumer price inflation and core inflation



Note: 1) Excluding food and energy prices.
Source: Statistics Korea.

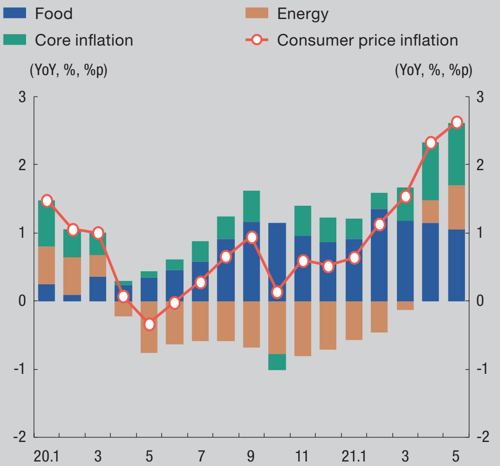
Consumer Price Index developments



Source: Statistics Korea.

The recent acceleration in inflation was driven chiefly by the supply-side factors, including the sustained strong uptrend in agricultural and livestock product prices and global oil price rises, and a strong base-period effects were also responsible.

Contribution to consumer price inflation by sector



Sources: Statistics Korea, Bank of Korea.

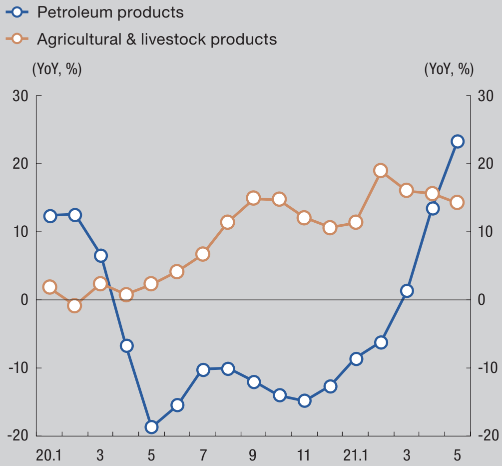
Looking at the recent inflation developments in the areas of energy, food and core inflation items, energy prices accelerated significantly, led by the continued global oil price rise and the strong base-period effect from the oil price plunge last year. Prices of petroleum products plummeted immediately after the spread of COVID-19 last spring. After the fall slowed to a smaller extent since the end of last year, petroleum product prices shifted to an increase in March 2021 and surged during April and May due to the base-period effect.

Next, prices of food, including agricultural, livestock & fishery products[4] and processed food[5], have been rising rapidly since the second half of last year, boosted by prices of agricultural and livestock products. They have maintained strong growth, affected by heavy rains during last summer and the cold waves and spread of avian influenza early this year, and have led the recent acceleration in consumer price inflation. Prices

4) Among agricultural, livestock & fisheries products, natural flowers and ginseng are excluded from the food category. According to the purpose of expenditure, food is classified as food and non-alcoholic beverages, natural flowers as entertainment and culture, and ginseng as healthcare.
5) Among processed food, alcoholic beverages, red ginseng and functional foods are excluded from the food category. By the classification of expenditure according to purpose, alcoholic beverages are classified as alcohol and tobacco, and red ginseng and health functional foods as healthcare.

of processed food, meanwhile, have sustained their relatively mild uptrend so far, despite the continued rise in international grain prices since the second half of last year.

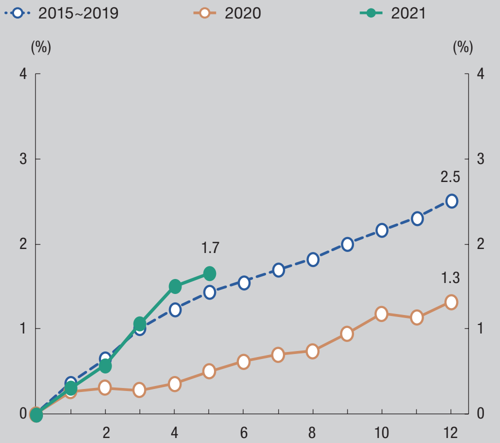
Prices of petroleum products and agricultural & livestock products



Source: Statistics Korea.

Core inflation excluding food and energy, whose prices are highly volatile, has accelerated this year, led by personal service charges, to stand at 1.1% in April and 1.2% in May. Dining-out prices, in particular, have been rising at a faster pace[6] than usual, affected largely by increasing costs of ingredients owing to soaring agricultural and livestock product prices. Housing rental fees have been accelerating gradually since the second quarter of last year, driven by the sustained increases in leasehold (*jeonse*) deposit prices and monthly rents in the housing market. The decline in public service prices has been slowing, as downward inflationary pressures from government policies such as free high-school education have been decreasing.

Growth in dining-out prices[1)2)]



Notes: 1) Excluding prices of school lunches.
2) Compared with the end of last year.
Sources: Statistic Korea, Bank of Korea staff calculations.

Administered prices[7], meanwhile, are continuing their downward trend this year, but the pace of decline has slowed[8] since April. This is attributable largely to the dissipation[9] of downward inflationary pressures from the expansion of free high-school education[10] and free school meals[11] in April and May last year. With these impacts of administered prices counted out, core inflation rises to 1.7% in May this year.

6) Eating-out prices (excluding charges for school meals) rose by 1.7% in May 2021 from the previous year-end, growing faster than in recent years (1.4% from 2015 to 2019).

7) Administered prices are a measure of inflation based on items such as public services, electricity, water and gas, and school meals that are affected directly and indirectly by government policy, and have continued to fall since 2018.

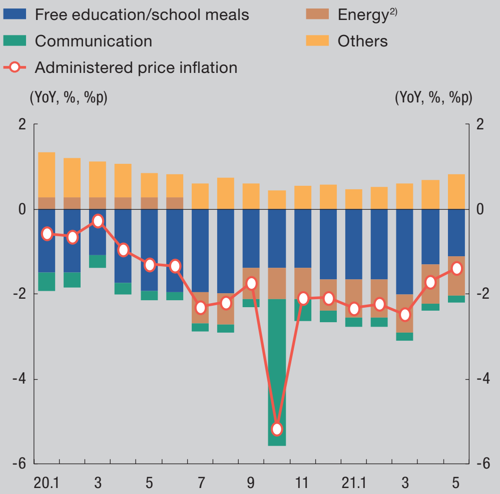
8) The decline in administered prices (YoY) slowed from -2.3% during the first quarter of this year to -1.5% during April and May.

9) It takes a year for downward pressures on the year-on-year inflation rate to dissipate.

10) Free high-school education was expanded in April last year to include students in their second year in addition to those in their third year.

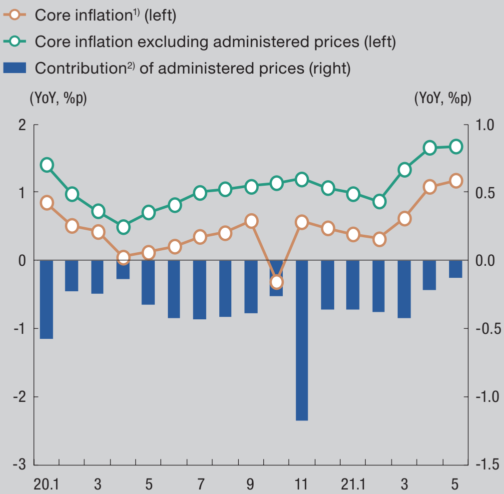
11) Free high-school meals were expanded in May last year to include students in their second year in Seoul and Busan and those in their third year in Daegu and Gyeongbuk province.

Major factors[1] causing changes in administered prices



Notes: 1) Contribution of each factor/item to administered prices.
2) Electricity, city gas and district heating charges.
Source: Statistics Korea.

Core inflation excluding administered prices



Notes: 1) Excluding food & energy.
2) Contribution of administered prices to core inflation.
Sources: Statistics Korea, Bank of Korea.

(Examination of major inflation conditions)

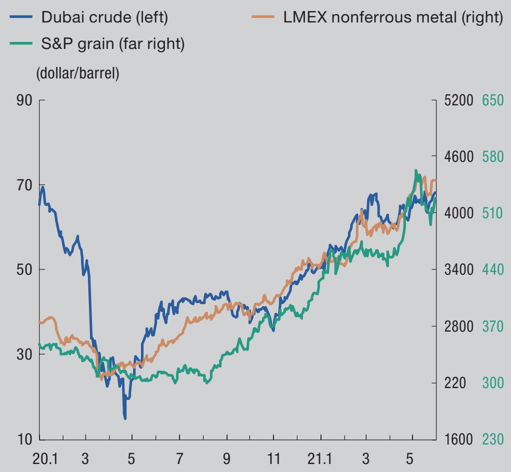
We examine major conditions that affect future inflation trends, such as conditions for commodity and agricultural & livestock prices that have been leading the recent inflation acceleration, as well as the possibility of changes in inflationary pressures in line with economic recovery and developments of inflation expectations that will affect future trends of underlying inflation.

First, commodity prices overall have continued their upward trend since the second half of last year. The larger increases in commodity prices are likely to cause producer prices to rise, leading to higher consumer prices with a time lag. Global oil prices plunged significantly in the spring last year due to the COVID-19 shock and then rebounded, and have continued to rise[12] this year boosted by the global economic recovery. Prices of other commodities, such as nonferrous metals[13], iron ore[14] and lumber[15], exhibited faster growth, influenced chiefly by the global economic recovery and supply disruptions. International grain prices, which usually affect prices of processed food with some time lag, have remained on the rise since the second half of last year, affected mainly by unusual weather patterns, restrictions on labor force mobility since the outbreak of COVID-19, and higher logistics costs. Major institutions (including the IMF, WB and Oxford Economics) forecast commodity prices to remain high for some time due to supply and demand imbalances and then stabilize gradually next year when supply

12) The US EIA recently upgraded its oil price forecast (based on Brent crude) for this year to 63.2 dollars (May 11, 2021) from its February forecast (53.2 dollars).
13) Prices of copper, aluminum and nickel increased, due mainly to concerns about supply disruptions and increased demand for eco-friendly infrastructure.
14) Increasing fiscal expenditures and stronger economic recoveries in major countries worked to push steel prices up.
15) Lumber prices have risen as demand for furniture and housing construction has increased significantly since the outbreak of COVID-19, particularly in the United States.

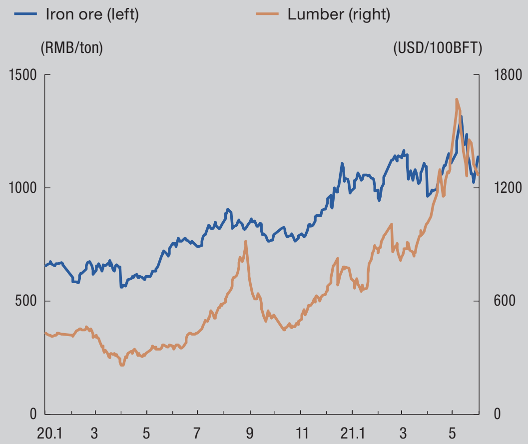
expands, but it is highly uncertain how long the prices will continue to rise.

Global oil, nonferrous metal, and grain prices



Source: Bloomberg.

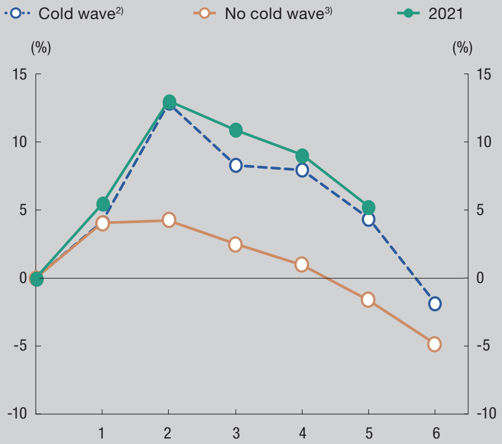
Iron ore and lumber prices



Source: Korea PDS.

Second, prices of agricultural and livestock products have decelerated at a slower pace than expected and maintained strong growth until recently. Agricultural product prices soared significantly, due to a poor harvest resulting from the heavy rains last summer and the cold waves early this year. Livestock product prices have also accelerated led by prices of eggs and chicken, affected by the spread of avian influenza. However, the sharp rise in agricultural and livestock product prices is expected to decelerate to the level of average years, as supply and demand conditions improve[16], absent further shocks.

Cold waves and agricultural product prices[1)]



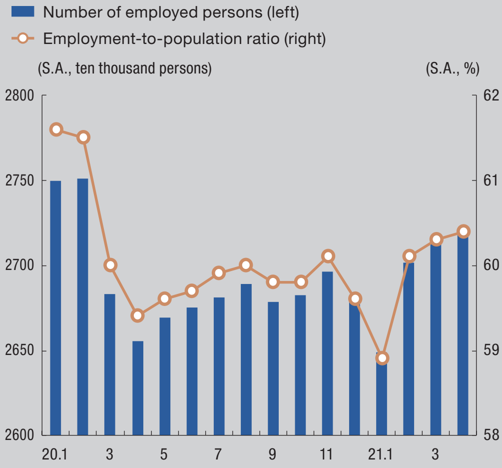
Notes: 1) Compared with the end of last year.
2) Averages for 2016 and 2018.
3) Averages for 2017, 2019 and 2020.
Sources: Statistic Korea, Bank of Korea staff calculations.

Third, the economic recovery has been strengthening this year, as exports and facilities investment remain favorable and private consumption improves with retail sales and consumer sentiment returning to their pre-COVID-19 levels. In reflection of this, major institutions raised[17] their economic growth forecasts for this year. The stronger economic recovery is expected to act

16) Concerning agricultural products, supply and demand imbalances have been easing as shipments of spring vegetables (including spring leeks, early-season onions and spring Chinese cabbages) begin in earnest, and egg prices are expected to stabilize as the number of layer chickens is increasing gradually (source: Korea Rural Economic Institute).

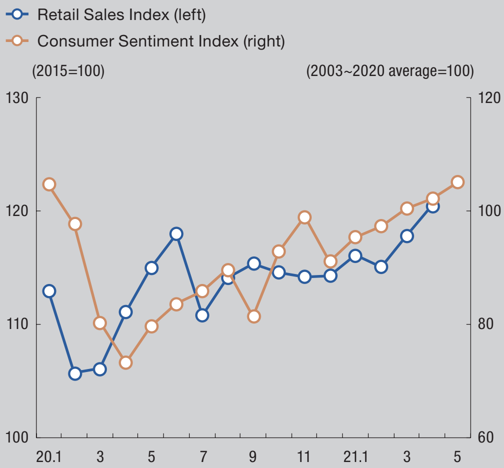
as modest inflationary pressure with a time lag. More specifically, household purchasing power has accumulated based on household savings growth[18] amid the sharp increase in fiscal expenditure to support households since the spread of COVID-19, and if pent-up consumption[19] explodes with the easing of restrictions on economic activity following the acceleration of vaccinations, there is the potential for demand-side inflationary pressures to increase faster than expected. However, while the spread of COVID-19 is not slowing down, a delay in improvement in employment conditions and a buildup of private debt[20] could work to limit inflationary pressures.

Number of employed persons and employment-to-population ratio



Source: Statistics Korea.

Retail sales and consumer sentiment



Sources: Statistics Korea, Bank of Korea.

Finally, movements of inflation expectations are likely to act as an important factor determining the future course of inflation. The recent faster rise in prices of items which are frequently purchased by households and account for large shares of their spending, such as petroleum products, could stimulate inflation expectations. In addition, the BEI rate, measures of financial market-based inflation expectations, and the inflation expectations of the general public (one-year ahead) also remain on the rise, reflecting the recently accelerated growth in prices. However, long-term inflation expectations are generally anchored at the target level, largely unaffected by fluctuations in actual inflation.[21]

17) Major institutions recently raised their growth forecasts for this year considerably.

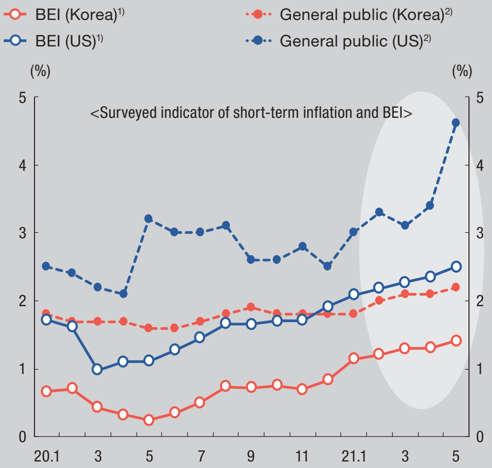
Forecasting institution	Bank of Korea	Korea Development Institute	Korea Institute of Finance	LG Economic Research Institute	Consensus Economics
GDP growth forecast[1]	3.0% → 4.0% (Feb. 2021) (May. 2021)	3.1% → 3.8% (Nov. 2020) (May. 2021)	2.9% → 4.1% (Dec. 2020) (May. 2021)	2.5% → 4.0% (Aug. 2020) (Apr. 2021)	3.4% → 4.0% (Feb. 2021) (May. 2021)

Note: 1) Months in parentheses represent the timing of forecasts.
Source: Respective institutions.

18) The household savings ratio (%, based on the surplus rate from the Household Trends Survey; including households engaged in the agriculture, forestry & fishery sector and single-person households) grew to 31.7% in the first quarter of 2020 from 24.2% in the first quarter of 2019, and remained at a high level of 31.1% in the first quarter of 2021.

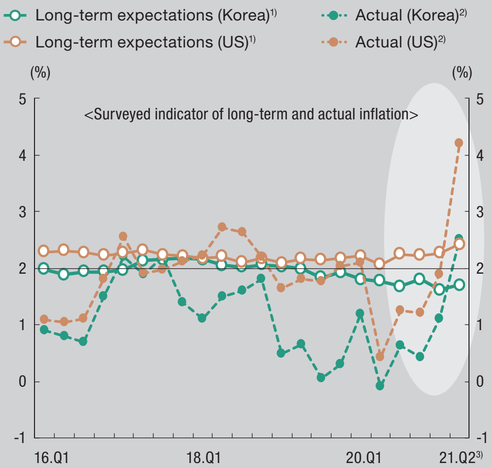
19) Expected pent-up spending in Korea is estimated at about 4% of (nominal) private consumption for 2019. Further details can be found in *Examination of Potential Pent-up Spending* (BOK Issue Note 2021-6, Bank of Korea).

Trends of financial market-based and short-term inflation expectations



Notes: 1) 10-year maturity.
2) General public (one-year-ahead).
Sources: Bank of Korea, Bloomberg, University of Michigan

Trends of long-term inflation expectations



Notes: 1) Consensus Economics inflation expectations of experts (five-year-ahead).
2) Consumer price inflation (year-on-year).
3) Actual inflation in April and May in Korea, and in April in the US.
Sources: Bank of Korea, Statistic Korea, Consensus Economics.

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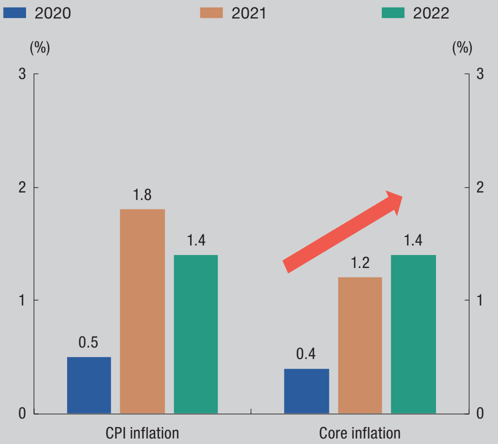
20) If households and businesses curb consumption and investment in order to reduce the debt burden that has been growing since the outbreak of COVID-19, this could act as a downward pressure on inflation.

21) In the recent controversy over inflation in the US, the anchoring of long-term inflation expectations is noted as one of factors that will make it difficult for inflation to increase steadily. In the minutes for the 2021 April FOMC meeting, a majority of FOMC members assessed that long-term inflation expectations are generally anchored at the target level, and Richard Clarida, Vice Chairman of the Federal Reserve (in May 2021) expected actual inflation to gradually decrease to the target level, as long-term inflation expectations are anchored, despite recent large rises in consumer prices stemming from temporary factors such as base effects and supply bottlenecks.

(Assessment of future inflation trends)

Looking at recent inflation trends and major conditions, prices of agricultural and livestock products will increase at a slower pace, but international oil prices are likely to go significantly higher than last year's level, and demand-side inflationary pressures to gradually rise.

Inflation outlook[1)]



Note: 1) Figures are the forecast as of May 2021.
Source: Bank of Korea.

Accordingly, consumer prices are expected to exhibit significantly faster growth from last year, standing at above the 2% inflation target in the second quarter and fluctuating at around 2% in the second half of this year. Core inflation, which was running in the 0% range for the past two years, is also expected to rise above 1% this year, and core inflation excluding administered prices is likely to show even faster growth.

Next year, consumer price inflation is expected to decline from this year due to reduced influences of supply-side factors such as oil prices and prices of agricultural and livestock products. However, core inflation is likely to sustain an uptrend on continued economic improvement.

As for the future inflation trend, uncertainties remain related to the trend of international oil prices and the evolution of the COVID-19 pandemic. Upside risks include higher rises in agricultural, livestock, and fisheries product prices and commodity prices, and stronger recovery in demand for consumption following expanded vaccinations. There are also downside risks such as a worsening of the demand slump following the resurgence of COVID-19.
Short-term inflation expectations have recently risen and supply- and demand-side inflationary pressures could be larger than expected in the process of normalizing economic activity. Therefore, the inflation trend will need to be closely watched.

Box I-3.

Drivers and Effects of Recent Rises in Long-term Interest Rates

The long-term interest rate (10-year Treasury bonds) in Korea continued to rise from July last year (the lowest rate 1.28%) for a long period of time. The pace of the rise somewhat accelerated entering this year and the rate fluctuated around over 2% since March. However, as the yields on bonds with relatively short maturities, such as 3-year Treasury bonds, rose relatively modestly, the bond yield curve steepened.

Trend of bond yields by maturity

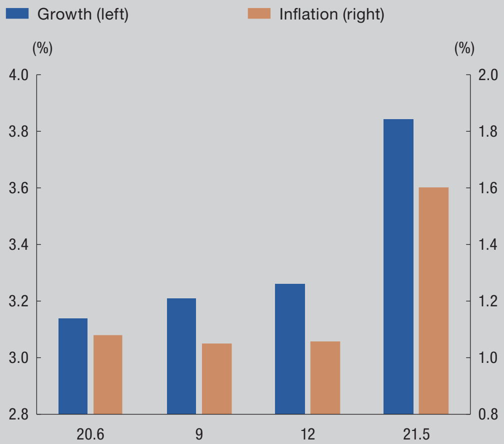
Source: Korea Financial Investment Association.

(Breakdown of factors behind recent rise in the long-term rate)

This Section shows that the recent rise in Korea's long-term interest rates is attributable to a mix of factors, such as improvement in domestic and global macroeconomic conditions, and changes in expectations about monetary policy, increases in the amount of Treasury bond issued, and rises in Treasury bond yields in major economies.

First of all, there are three main factors driving up long-term rates. They include the economic recovery at home and abroad, the faster rise in inflation, and the market expectation that the resulting adjustment in monetary policy accommodation could occur faster than expected. As the outlook for Korea's growth and inflation by major investment banks kept going up and the Bank of Korea's economic forecast released in May was also revised upward[1)] greatly from its February forecast, the three- month forward rate continued its upward trend in the interest rate swap market.

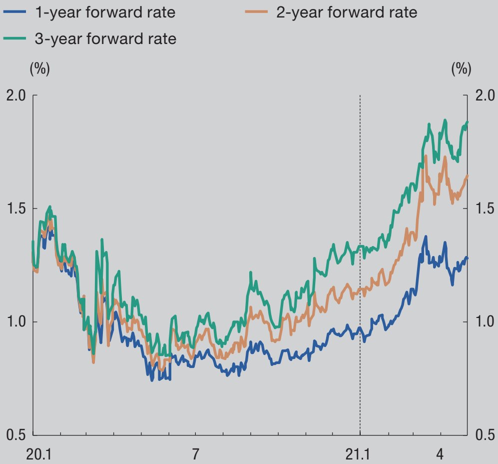
Changes in investment banks' forecasts for Korea's 2021 growth and inflation[1)]



Note: 1) Averages of investment banks' forecasts at month-end.
Source: Bloomberg.

1) The GDP growth rate and CPI inflation forecasts for 2021 were revised upwards significantly from 3.0% to 4.0%, and from 1.3% to 1.8%, respectively.

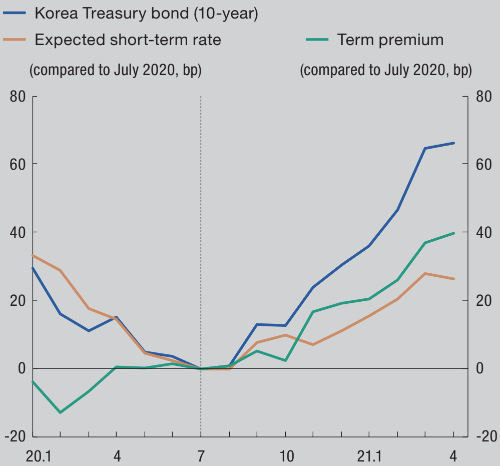
Three-month forward rates in the interest rate swap market



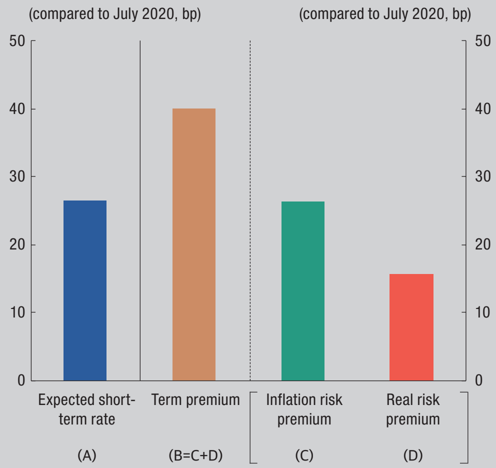
Source: Bloomberg.

Analysis of term structure long-term rate[1)]

(trend of changes)



(breakdown of factors behind rises)[2)3)]



Notes: 1) Based on zero-coupon Treasury bond (10-year) yield.
2) Changes in April 2021 compared to that of July 2020.
3) Model used by Hordahl and Tristani (2014) is employed to breakdown the term premium.
Sources: Bloomberg, Bank of Korea staff calculations.

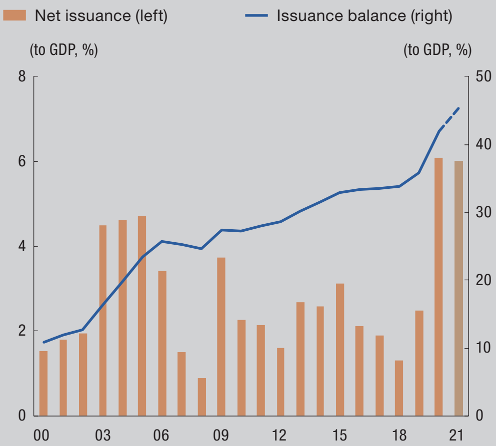
Breaking down the factors behind these changes by using an interest rate term structure model[2)] confirms that the growing upside risks to inflation and growth as well as changes in monetary policy expectations had considerable impacts on the rise in the long-term interest rates. In other words, while both the expected short-term rate and term premium have risen in tandem since last August, it is estimated[3)] that the rise in the term premium was affected by the increased inflation risks.

2) According to theory about the term structure of interest rates, long-term rates can be divided into expected short-term rate and term premium. As averages of short-term forward rates denoted in the yield curve, expected short-term interest rates can be interpreted as the average policy rates expected by market participants until maturity, while term premium reflects the inflation risks and uncertainties about the economy and supply/demand that investors expect from holding bonds over a long period. For the breakdown of factors behind long-term interest rate changes, we estimated expected short-term interest rate using the main components extracted from interest rate data sorted by maturity and calculated term premium by deducting this from the long-term rates. Considering the uncertainties of this estimation, this section is based on the average estimates of three models - the method of utilizing market interest rates by maturity only (Adrian et al., 2013), and the method of utilizing maceroeconomic and survey variables (Bauer et al., 2014; Hördahl and Tristani, 2014).

3) The rise in the term premium is estimated to have been affected by a real risk premium that reflects Treasury bond supply and demand issues and economic uncertainties, besides the inflation risks. As this section used the Hördahl and Tristani (2014) model, however, it should be noted that the estimated results can differ depending on models and periods used for analysis.

In addition, the expansionary fiscal policy such as the increased volume of Treasury bond issuance bolstered the trend of economic recovery and also acted as a factor driving up the interest rates temporarily. The volume of Treasury bond issued last year and this year represents around 6% of GDP, substantially exceeding the around 2% level seen since 2010.

Share of net issuance of Treasury bonds relative to GDP[1]



Note: 1) The figure for 2021 is based on the Treasury bond issuance plan and supplementary budget plan, and May GDP estimates.

Sources: Ministry of Economy and Finance, Bank of Korea, Yonhap Infomax.

The rises in Treasury bond yields in major economies since the latter half of last year also contributed to increases in the domestic long-term rates. We have witnessed greater effects of external factors such as Treasury bond yields of major economies on the domestic long-term rates, in line with strengthened global economic couplings since the global financial crisis, further advances in financial integration across the border, together with increased global investment on the back of the implementation of quantitative easing of major central banks.

10-year Treasury bond yields[1] (US and Korea) and foreign bond investment

Note: 1) Average monthly interest rates.

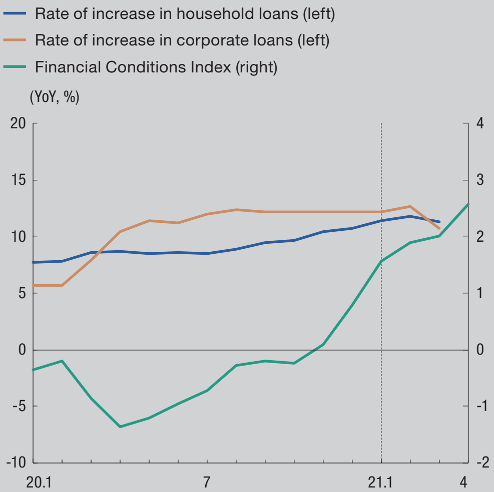
Sources: Korea Financial Investment Association, Bloomberg, Financial Supervisory Service.

(Effects of long-term rate hikes)

Given that the recent rise in the long-term interest rates is mainly driven by improvement in macroeconomic conditions, it is expected that the tightening impact on the real economy is rather limited. Basically, rise in the long-term rates serves as a tightening factor of financial conditions. However, if the rise goes hand in hand with the pickup in the economic activity, the effects of increasing long-term rates on contracting the real economy could be offset considerably as the rise in the real long-term rates is restrained due to inflation and economic players' risk preference sustains, thereby bolstering consumption and investment.

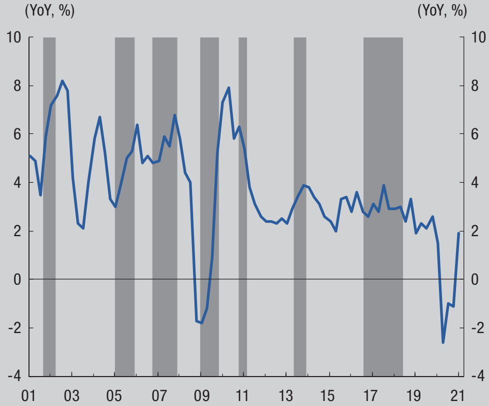
The recent domestic financial and real economic indicators have shown such trend since the rise in the long-term rates. Corporate and household credit continued to surge as the extent of increase in lending rates was not relatively high[4), and the degree of easing in the Financial Conditions Index (FCI), which takes into account short-term rates and stock prices, has also widened. This indicates that overall financial conditions remained eased despite the long-term rate hikes. In terms of the real economy, even during the past period of rising long-term rates[5], the recovery of consumption and investment was fast, and the growth was generally expanding.

Financial Conditions Index[1] and rate of increase in household and corporate loans[2]



Notes: 1) An FCI above (below) zero, the long-term equilibrium, indicates that financial conditions are accommodative (tight).
2) Based on depository institutions.
Source: Bank of Korea.

Real GDP growth rate[1]



Note: 1) Shaded areas indicate periods of long-term rate hikes.
Source: Bank of Korea.

However, in light of past cases, it is necessary to take note[6] of the developments related to the rising long-term interest rates, taking into account the possible volatility in interest long-term rates increasing over the short run, depending on economic indicators at home and abroad, monetary policy signals, and the supply and demand of Treasury bonds conditions.

4) Even the estimation using the ECB's methodology (in August 2009) shows that lending rates on household and corporate loans are affected more by changes in short-term rates such as overnight call rates than by long-term rates such as the 10-year Treasury bond yields.

(%)

	rates on corporate loans[1]	rates on household loans[1]
Treasury bond (10-year) yield	12.7	17.0
Overnight call rate	42.7	41.2

Note: 1) The degree of passalong that Treasury yield and overnight rate changes have on lending rates during given months (period from January 2001 to February 2021).
Source: Bank of Korea staff calculations.

5) It is defined as the period when the 10-year Treasury bond yield increased over 100bp for more than 6 months since 2001.

6) For the periods of long-term rate hikes in 2013 (May 2.~Dec. 5.), the US Fed's signaling of changes in its monetary policy stance (Taper Tantrum) caused the volatility of domestic long-term rates to expand amid the weaker-than-expected economic recovery (or amid the weaker economic recovery than initially expected).

Box I-4.

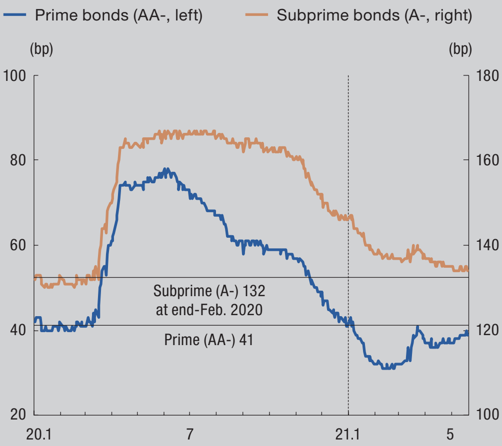
Recent Corporate Bond Market Conditions

(Overview)

Since the start of 2021, corporate bond market[1] conditions have remained sound. Major price indicators like the credit spread for corporate bonds have nearly recovered to the pre-pandemic level. The credit spread for prime bonds (AA-), which had widened temporarily in mid-March, still stood below the pre-pandemic level (41bp at end-February 2020) at 39bp as of May 21. For subprime bonds (A-), the spread narrowed to 134bp, nearly reaching the pre-pandemic level of 132bp. The re-offer yield spread between a corporate bond's re-offer yield and its average yield measured by private bond valuation companies also continued[2] to be negative, especially for subprime bonds.

In the primary market, issuance increased significantly relative to earlier years, based on high participation in the book building process. The participation rate between January and April this year recorded 523% for prime bonds (AA and above) and 605% for subprime bonds (A and below), greatly surpassing the levels seen in previous years.[3] Earlier this year, the participation rates for both prime (739% in January) and subprime bonds (869% in February) hit an all-time high since the introduction of the book building process. The volumes of issuance also grew sharply compared to earlier years for both prime and subprime bonds. The total issuance (23.8 trillion won) between January and April was the highest ever seen during that four-month period, and the net issuance during the same period (9.9 trillion won) recorded the highest level since 2009. Against this backdrop, in this section we examine the background behind the recent improvement in corporate market conditions and derive implications.

Credit spreads for corporate bonds[1]



Note: 1) Relative to 3-year Treasury yield; corporate bond yields are based on average yield estimated by four private credit rating agencies.

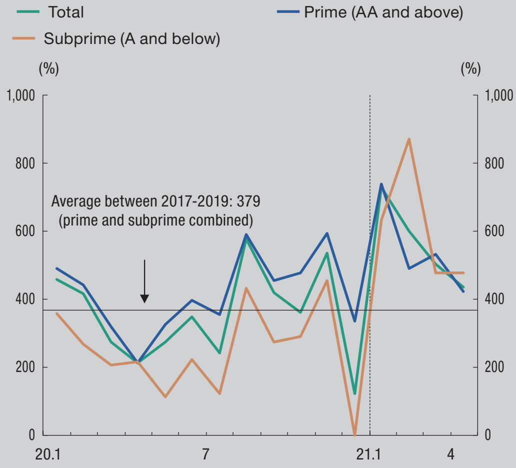
Source: Korea Financial Investment Association.

1) For analysis, this section only uses corporate bonds issued for public offering by general companies excluding financial holdings and securities companies.

2) Prime (AA and above): -12bp in January 2021 → -3bp between February and April → 0bp on May 1 to 21, Subprime (A and below): -16bp in January 2021 → -20bp between February and April → -5bp on May 1 to 21.

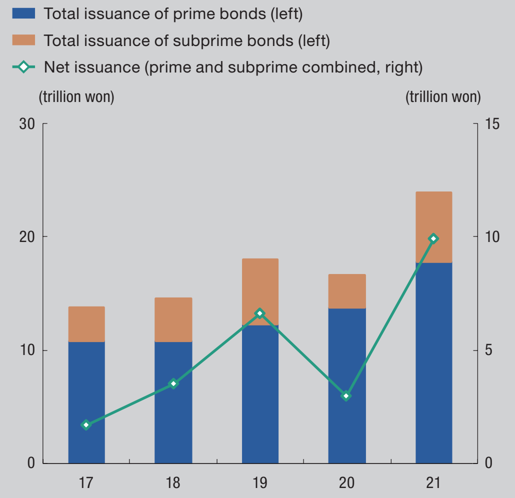
3) Prime (AA and above): 392% between 2017 and 2019 → 372% in 2020, Subprime (A and below): 393% between 2017 and 2019 → 270% in 2020.

Participation in book-building for corporate bonds[1)]



Note: 1) Amount bid in book building divided by expected issuance amount multiplied by 100.
Source: Financial Supervisory Service.

Issuance of corporate bonds (January to April)



Source: Financial Supervisory Service.

(Drivers of the corporate bond market improvement)

First, an increasing number of companies had their credit ratings upgraded driven by better outlooks for economic activity and corporate performance. A recent market survey projected that corporate bond issuers will record[4)] an operating profit[5)] of 93 trillion won this year (projected at end-April 2021), more than a two-fold increase from last year (41 trillion won). The operating profit for the first quarter[6)] this year (20 trillion won) has increased markedly in year-on-year terms (6 trillion won). In reflection of this, domestic credit rating firms have, on an increasing number of occasions, upgraded the ratings (or rating outlooks) of corporate bond issuers. The ratio of upgrades to downgrades rose from 0.3 in 2020 to 1.1 between January and May 2021 (outlooks included), which is slightly higher than the standard year average (average ratio of 1.0 between 2017 and 2019).

4) This projection is a substantial upward adjustment from last year's 79 trillion won.
5) The projection is based on the operating profits of 119 companies whose market outlooks were available on DataGuide at end-April, out of 281 companies with corporate bonds outstanding.
6) Based on the operating profits of 86 companies that held corporate bonds outstanding and announced earnings in the first quarter of 2021.

Changes in corporate bond credit ratings[1]

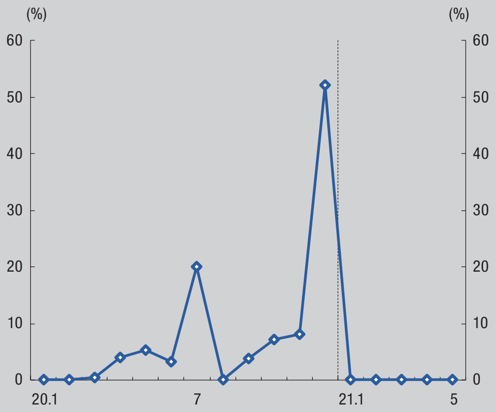
(number of rating, ratio)

		Average between 2017~2019	2020	Q1	Q2	Q3	Q4	2021	Q1	Q2[3]
Upgrade	Rating	14 (7)	11(3)	0	7	2	2	5	2	3
	Outlook[2]	26(10)	19(4)	0	8	1	10	22	8	14
	Total(A)	40(17)	30(7)	0	15	3	12	27	10	17
Down-grade	Rating	29(11)	37(17)	9	17	1	10	15	6	9
	Outlook[2]	18(6)	56(28)	1	39	9	7	9	1	8
	Total(B)	47(17)	93(45)	10	56	10	17	24	7	17
Ratio of Upgrades to Downgrades (A/B)		0.8 (1.0)	0.3 (0.2)	0.0	0.3	0.3	0.7	1.1	1.4	1.0

Notes: 1) Overlapping ratings for a single company excluded; figures in parentheses are for the period between January and May.
2) Including companies on the watchlist for consideration of up- and downgrades.
3) April 1 to May 21, 2021.
Sources: Korea Ratings, Korea Investors Service, and NICE Investors Service.

With the easing of credit risk aversion in line with improving economic activity, investment demand for corporate bonds has been solid, reflecting their high yields that exceed those of Treasury bonds. When Treasury yields soared in mid-March, investment demand for subprime bonds with higher yields than prime bonds remained strong, limiting the widening of the credit spread (maximum +3bp relative to end-February, with the credit spread for prime bonds at +9bp). This year, as of yet no bonds have remained unsold[7] even among subprime bonds, which often went unsold[8] as recently as last year. By institution, this year's increase in corporate bond holdings by securities companies (+2.7 trillion won between January and April 2021) and asset management firms (+2.0 trillion won), typically assumed to have a relatively stronger tendency to reach the hurdle rate, further implies solid investment demand for higher-yield corporate bonds.

Rate[1] of unsold corporate bonds[2]



Notes: 1) Unsold amount divided by Expected issue amount.
2) In December 2020, the rate soared as the issue amount declined sharply due to seasonal factors, although the amount of unsold bonds was lower than that in July 2020.
Source: Bank of Korea.

Considering how maturing bonds have been dealt with and the volume of such bonds going forward, rollover and redemption risks are unlikely to be large, which further supports the buoyancy of the corporate bond market. The monthly average amount of matured debt between January and May this year, totaling 3.4 trillion won (16.9 trillion won in total), was larger than the standard year average[9], but was rolled over or redeemed smoothly. The monthly average between June

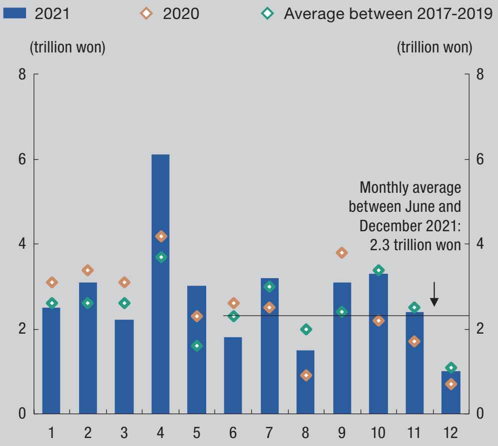
7) As a result, the volume of corporate bonds purchased by the SPV was also reduced from 650 billion won (subprime bonds amounting to 390 billion won) in Q3 2020 → 650 billion won (subprime bonds 650 billion won) in Q4 2020 → 510 billion won (subprime bonds 190 billion won) in Q1 2021 → 300 billion won (subprime bonds 140 billion won) between April 1 and May 21, 2021.

8) The bonds unsold since the third quarter of 2020 have all been subprime bonds (14 bonds unsold totaling 690 billion won in Q3 2020 → 6 bonds unsold totaling 565 billion won in Q4 2020).

9) The monthly average amount of maturing bonds between January and May stood at 2.6 trillion won from 2017 to 2019, and 3.2 trillion won in 2020.

and this coming December will be smaller at 2.3 trillion won (16.4 trillion won in total). Stripping away already refinanced debt[10], the actual amount to be rolled over or redeemed will be only about 2.1 trillion won (14.9 trillion won in total). The monthly average amount of maturing subprime bonds (rated A and below), which can face difficulty in refinancing or redemption should an unexpected negative event occur, will be around 0.6 trillion won (4.3 trillion won in total). Another driver behind the recent market improvement is the stabilized investor sentiment through the support[11] from the government and the Bank of Korea via the SPV.

Monthly amount of maturing corporate bonds



Source: Korea Securities Depository.

Estimated amounts[1] of actual rollover and redemption among maturing corporate bonds in June to December 2021

(trillion won)

		Maturing (A)	Pre-rollover (B)	Actual rollover (A-B)
Total		16.4 (2.3)	1.5	14.9 (2.1)
Credit rating	AA and above	11.8 (1.7)	1.3	10.5 (1.5)
	A and below	4.6 (0.7)	0.3	4.3 (0.6)

Note: 1) Figures in parentheses are monthly averages.
Sources: Financial Supervisory Service, Korea Securities Depository.

(Assessment)

Corporate bond market indicators such as the credit spread, the participation rate in book building, and the issuance volume have recently reached or surpassed pre-pandemic levels. Looking at the overall corporate bond market conditions including credit rating changes for corporate bond issuers, investment demand, and the amount of maturing debt going forward, the market is likely to remain stable for the foreseeable future. Past experiences show that once the business cycle moves to the expansion phase from the contraction phase, the corporate bond market generally remains stable. The credit spread continued to narrow for a considerable time during the expansion phases in 2005, 2009 and 2013 (according to Statistics Korea). Around the expansion periods in 2005 and 2009, the ratio of upgrades to downgrades for corporate debt issuers' credit ratings also increased.[12]

10) A total of 1.5 trillion won worth of corporate bonds were issued between January and May to refinance debt maturing between June and this coming December.

11) In addition to the SPV, the Bank of Korea is also providing corporate bond market support through P-CBOs and government-led banks' refinancing support programs.

12) Changes in the ratio of credit rating upgrades to downgrades: 1.0 in 2004 → 1.7 in 2005 → 2.6 in 2006, 0.6 in 2008 → 0.7 in 2009 → 1.6 in 2010.

Changes in credit spread in past expansion phases[1)]

(bp)

	2005	2009	2013
Prime	-17 (19 months)	-199 (14 months)	-11 (25 months)
Subprime	-32 (19 months)	-285 (29 months)	-2 (1 month)

Note: 1) Figures in parentheses are numbers of months for which credit spreads continued to narrow after entering expansion phases.

Source: Korea Financial Investment Association.

However, depending on COVID-19 developments, domestic and overseas economic conditions, and the movements of Treasury yields, the possibility of corporate bond market volatility increasing again cannot be ruled out completely, especially with respect to subprime bonds.[13)] In this regard, corporate bond market developments will need to be monitored continuously.

13) Companies in the sectors hit hard by COVID-19 could face greater difficulty with bond issuance, as their financial state and credit ratings are vulnerable to COVID-19 developments.

II

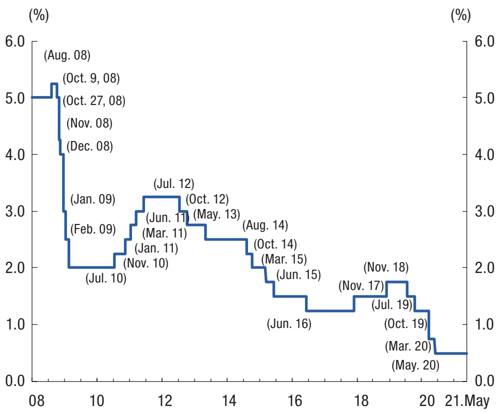
Conduct of Monetary Policy

1. Base Rate

Base Rate operated at 0.50%

The Bank of Korea maintained its accommodative policy stance to support the recovery of growth and to help inflation stabilize at the 2% target over a medium-term horizon, while paying attention to financial stability. In this process, it closely examined risk factors such as the global and domestic development of the COVID-19 pandemic, its financial and economic impacts, and changes in financial stability conditions. With this policy stance, the Bank of Korea maintained the Base Rate at 0.50%.

Figure II-1. Bank of Korea Base Rate[1)]



Note: 1) Figures in parentheses refer to the months of Base Rate adjustments.
Source: Bank of Korea.

A detailed look at the Base Rate decisions during this period, and the backgrounds behind them, are as follows. At the April meeting, the Board left the Base Rate unchanged at 0.50%, judging that it would be necessary to monitor pandemic developments and further examine whether the trend of recovery would continue, although the domestic economy was growing faster than expected, thanks to improvement in global economic conditions. The recovery of the Korean economy had strengthened somewhat. Exports had sustained their buoyancy and facilities investment continued to recover robustly, while sluggishness in private consumption had eased. It was expected that the domestic economy would sustain this trend of improvement. However, it was judged that high uncertainties still remained, since the pace of the improvement would be heavily dependent on whether COVID-19 would spread further and on the progress of vaccination. Consumer price inflation had risen to the mid-1% level due to an increase in petroleum product prices as well as rising prices of agricultural, livestock, and fishery products. With respect to financial stability, household loans had exhibited a sharp increase, led by housing-related loans, and housing prices continued to rise highly in all parts of the country.

At the May meeting, the Board decided to leave the Base Rate unchanged at 0.50%. The Board judged that there was a need to wait and observe the developments of COVID-19 and the progress of vaccination as well as the resulting economic recovery, although projections of growth and inflation were revised upward, bolstered by expanded growth in the global economy. Looking at the domestic economy, exports and facilities investment had sustained their buoyancy on the strengthened global economic recovery, while private consumption had gradually emerged from its slump. Going forward, it was expected that these trends would continue and the recovery would strengthen. Accordingly, GDP growth this year was projected to be at the 4% level, significantly higher than the February forecast of 3.0%. Consumer price inflation had risen markedly to the lower-2% level due to the rising prices of petroleum products and agricultural, livestock, and fishery products as well as the accelerating increase in service prices. In annual terms, consumer price inflation was expected to run at 1.8%, considerably exceeding the February forecast of 1.3%. On the financial stability side, household loan growth remained high, and housing prices continued to increase rapidly in both the Seoul Metropolitan area and other regions. As a result, the Board saw a growing need to pay attention to the risk of buildup of financial imbalances.

Liquidity adjustment via open market operations

The Bank of Korea seeks to ensure that the overnight call rate does not deviate too widely from the Base Rate by carrying out its open market operation instruments which include the issuance of Monetary Stabilization Bonds (MSBs), repurchase agreement (RP) transactions, and deposits with the Monetary Stabilization Account (MSA).

The total amount of liquidity adjustment needed (average balance basis) increased slightly in April, as in the first quarter, due to the expansion of the Bank Intermediated Lending Support Facility.[56] In response, the Bank expanded RP sales[57] and deposits with the MSA[58] to adjust short-term funds.

Meanwhile, the Bank of Korea provided liquidity in a flexible manner by reducing[59] the MSB issuance[60] to less than the amount initially planned, in consideration of an excess bonds supply stemming from growth in government-issued Treasury bonds.

As a result, the call rate remained generally stable around the Base Rate.

56) In quarter-on-quarter terms, the amount of the Bank Intermediated Lending Support Facility (average balance basis) in the first quarter increased by 3.1 trillion won.

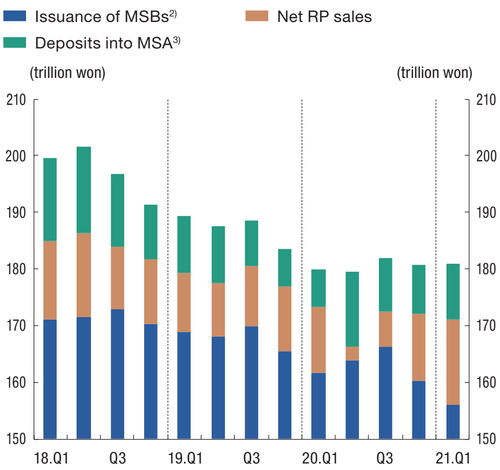
57) Average RP sales (average balance basis) rose by 3.3 trillion won in the first quarter, and by 4.1 trillion won (month-on-month) in April 2021.

58) The average MSA balance rose by 1.0 trillion won in the first quarter (QoQ), and rose by 2.5 trillion won (month-on-month) in April.

59) Auctions for MSBs were partially reduced in March from what was initially planned, for the purpose of reducing interest rate volatility. (The auction volume had been reduced to 1.1 trillion won from 2.2 trillion won for MSBs with a maturity of two years on March 17, and to 0.3 trillion won from 0.6 trillion won for those with a maturity of one year on March 22, 2021).

60) The volume of MSB issuance (average balance basis) was reduced by 4.2 trillion won (quarter-on-quarter) in the first quarter, and by 5.1 trillion won (MoM) in April.

Figure II-2. Liquidity adjustment[1] via open market operations



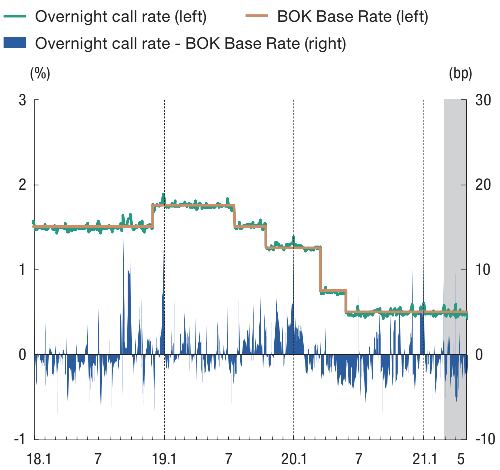
Notes: 1) Quarterly average balance basis.

2) Monetary Stabilization Bonds.

3) Monetary Stabilization Account.

Source: Bank of Korea.

Figure II-3. Bank of Korea Base Rate and overnight call rate



Source: Bank of Korea.

2. Bank Intermediated Lending Support Facility

Six-month extension of operation period of support for businesses affected by COVID-19

To ensure that banks actively lend to small and medium-sized enterprises (SMEs), the Bank of Korea operates the Bank Intermediated Lending Support Facility. The Facility supports banks by extending funds at interest rates lower than the Base Rate. The Monetary Policy Board makes adjustments to the total ceiling of the Facility when deemed necessary, taking into account the financial and economic situation as well as the financing conditions for SMEs.

The Bank of Korea increased the total ceiling of the Bank Intermediated Lending Support Facility on three occasions last year (in March, May and October 2020) by a total of 18 trillion won. Of this amount, 16 trillion won[61)] was allocated to the program that supports SMEs affected by COVID-19 and the support program for small businesses. The two programs were operated temporarily until end-March, 2021. However, as small businesses and SMEs, and those in face-to-face industries in particular, continue to face difficult financing conditions even in 2021 due to the prolongation of social distancing guidelines following the pandemic, the operation period of the programs was extended by six months to end-September 2021 on March 25, 2021.

Looking at the volume of COVID-19-related bank loans supported by the Bank of Korea, bank loans amounting to 26.4 trillion won were extended to 117,287 establishments between March 2020 and April 2021 under the Support for SMEs Affected by COVID-19 Program. As for the Support for Small Businesses Program, launched in October 2020, bank loans worth 1.6 trillion won were extended to 13,604 establishments between October 2020 and April 2021, showing steady growth in loan performance.

Such enhanced financial assistance by the Bank is assessed to reduce the interest burden of and provide greater financial access to small businesses and SMEs hit by COVID-19, while acting as a new growth engine of the Korean economy and contributing to employment.

The increased ceilings of each program under the Bank Intermediated Lending Support Facility as of May 2021 are as follows: 2.5 trillion won for the Support Program for Trade Financing; 13 trillion won for the Support Program for New Growth Engine Development and Job Creation; 5.5 trillion won for the Program for Stabilization of SME Lending; 5.9 trillion won for the Support Program for Regional SMEs; 13 trillion won for the Support Program for SMEs Affected by COVID-19; and 3 trillion won for the Support Program for Small Businesses. The total ceiling stands at 43 trillion won, which includes reserves of 0.1 trillion won. The interest rates on support programs under the Bank Intermediated Lending Support Facility are 0.25% per annum.

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61) The remaining 2 trillion won will be used to support facilities investment in startups, in businesses that create jobs, and in material, parts and equipment businesses.

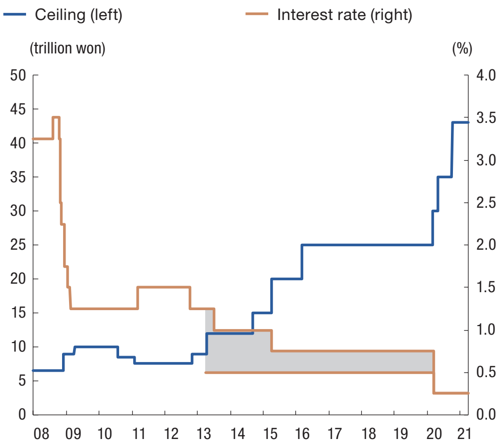
Table II-1. Programs under the Bank Intermediated Lending Support Facility

(trillion won, %)

Program	Ceiling	Interest rate
Support Program for Trade Financing	2.5	0.25
Support Program for New Growth Engine Development and Job Creation[1)]	13.0	0.25
Program for Stabilization of SME Lending[2)]	5.5	0.25
Support Program for Regional SMEs	5.9	0.25
Support Program for SMEs Affected by COVID-19	13.0	0.25
Support Program for Small Businesses	3.0	0.25
Total	43.0[3)]	-

Notes: 1) The Support Program for High-tech and Other Start-up SMEs was expanded and reorganized as the Support Program for New Growth Engine Development and Job Creation (September 2017).
2) Includes the support that had been formerly provided under the Support Program for Facilities Investment.
3) Includes reserves of 0.1 trillion won.
Source: Bank of Korea.

Figure II-4. Ceiling and interest rates of Bank Intermediated Lending Support Facility



Source: Bank of Korea.

3. Market Stabilization Measures

Conducted outright purchases of Treasury bonds

The Bank of Korea conducted outright purchases of Treasury bonds amounting to 11 trillion won to ensure stability in the financial market last year. On February 26 this year, the Bank announced another plan to expand outright purchases by a total of 5~7 trillion won during the first half of the year to deal with the possibility of higher market interest rate volatility caused in part by an increase in Treasury bond issuance in line with the government's implementation of the fourth round of emergency relief funds. Later, the Bank purchased Treasury bonds amounting to a total of 4.5 trillion won on three occasions - on March 9 (2.0 trillion won), April 28 (1.0 trillion won), and June 3 (1.5 trillion won).

Continued credit market support through corporate bond and CP purchases via SPV

On January 12, 2021, the Bank of Korea provided the second round of lending[62] amounting to 1.78 trillion won to a special purpose vehicle (SPV) which was established (in July 2020) to support low-rated companies facing difficulties from the COVID-19 pandemic.[63] As of end-April 2021, the SPV had purchased 3.3 trillion won[64] worth of corporate bonds and commercial paper (CP).

Table II-2. SPV's purchases of corporate bonds and CP[1)2)] by credit rating

(hundred million won, %)

Credit rating	Value	Share
AA(A1)	10,000	30.4
A(A2)	16,961	51.6
BBB(A3)	5,920	18.0
Total	32,881	100.0

Notes: 1) As of end-April 2021.
2) Face value basis.
Source: Bank of Korea.

Terminated temporary expansion of the scope of securities eligible as collateral

The Bank of Korea terminated[65] the expansion of the range of securities eligible as collateral on March 31, 2021, as planned. The expansion had been implemented temporarily (from April 2020 through to March 2021) to improve the collateral availability of financial institutions and expand liquidity supply channels for financial markets. The Bank took this action in consideration of a reduced need to extend the period of expansion aimed at expanding the liquidity supply base to cope with the COVID-19 crisis, thanks to recent improvements in liquidity conditions in the domestic financial market.

62) The first round of lending provided on July 23, 2020 amounted to 1.78 trillion won.
63) On December 24, 2020, the Bank of Korea extended the period of corporate bond and CP purchases by six months from January 13, 2021 to July 13, 2021, after consultation with the government and Korea Development Bank (KDB).
64) The SPV purchased corporate bonds worth 2.1 trillion won and CP amounting to 1.2 trillion won.
65) General bank debentures (including debentures issued by the National Agricultural Cooperative Federation and Nonghyup Bank), and by the National Federation of Fisheries Cooperatives and Suhyup Bank and special bonds issued by nine public organizations were excluded from the range of securities as eligible collateral.

Meanwhile, the Bank of Korea also terminated[66][67] the expansion of the range of securities eligible as collateral for guaranteeing net settlements and the range of securities eligible for open market operations on March 31, 2021 as planned. The expansion had been carried out temporarily (from April 2020 through to March 2021).

Table II-3. Changes in securities eligible as collateral in line with termination of operation period of temporary expansion

		Securities subject to termination	Eligible securities after termination
Securities eligible as collateral		General bank debentures[1], bonds issued by nine public institutions[2]	Government bonds, Monetary Stabilization Bonds (MSBs), government-guaranteed bonds, credit securities, mortgage-backed securities (MBSs) issued by Korea Housing Finance Corporation, debentures issued by specialized banks[3]
Securities eligible as collateral for guaranteeing net settlements		General bank debentures[1], bonds issued by nine public organizations[2]	Government bonds, Monetary Stabilization Bonds (MSBs), government-guaranteed bonds, mortgage-backed securities (MBS) issued by Korea Housing Finance Corporation, debentures issued by specialized banks[3]
Securities eligible for open market operations	Outright transactions	MBSs issued by Korea Housing Finance Corporation, debentures issued by specialized banks[3]	Government bonds, government-guaranteed bonds
	RP transactions	Debentures issued by specialized banks[3], general bank debentures[1], bonds issued by nine public institutions[2]	Government bonds, Monetary Stabilization Bonds (MSBs), government-guaranteed bonds, mortgage-backed securities (MBS) issued by Korea Housing Finance Corporation

Notes: 1) Including debentures issued by the National Agricultural Cooperative Federation and Nonghyup Bank, and by the National Federation of Fisheries Cooperatives and Suhyup Bank.
2) Korea Electric Power Corporation, Korea Land and Hosing Corporation, Korea Rail Network Authority, Korea SMEs & Startups Agency, Korea Gas Corporation, Korea Expressway Corporation, K-Water, Korail, and Korea Deposit Insurance Corporation.
3) Debentures issued by Korea Development Bank, the Industrial Bank of Korea, and the Export-Import Bank of Korea.
Source: Bank of Korea.

66) General bank debentures (including debentures issued by the National Agricultural Cooperative Federation and Nonghyup Bank, and by the National Federation of Fisheries Cooperatives and Suhyup Bank) and bonds issued by nine public institutions were excluded from the scope of securities as eligible collateral for guaranteeing net settlement of retail payment systems.

67) Among securities as eligible collateral for open market operations, debentures issued by three specialized banks (Korea Development Bank, the Industrial Bank of Korea, and the Export-Import Bank of Korea) were excluded from securities eligible for outright transactions and RP transactions; and general bank debentures (including debentures issued by the National Agricultural Cooperative Federation and Nonghyup Bank, and by the National Federation of Fisheries Cooperatives and Suhyup Bank) and bonds issued by nine public institutions were excluded from securities eligible for RP transactions. In addition, the eligibility of mortgage-backed securities (MBSs) issued by Korea Housing-Finance Corporation was narrowed to include securities eligible for RP transactions only; previously, eligibility included those eligible for both outright transactions and RP transactions.

Table II-4. Bank of Korea's market stabilization measures related to COVID-19

(as of June 3, 2021)

Policy response measures			Major details[1]
Base Rate	Base Rate cuts		• 1.25% → 0.50% (0.75%p)
Bank Inter-mediated Lending Support Facility	Raised ceiling		• 25 trillion won → 43 trillion won (+18 trillion won) • Extended operation : The period for supporting small businesses and SMEs affected by COVID-19 was extended by six months (end-March 2021 → end-September 2021)
	Lowered interest rate		• 0.5%~0.75% → 0.25%
Market stabilization measures	Liquidity provision	Carried out full-allotment RP purchases	• Amount supplied: A total of 19.43 trillion won (expired at end-July 2020)
		Carried out RP purchases from non-bank financial institutions	• Amount supplied: A total of 3.5 trillion won (1.0 trillion won on March 19, 2020, 2.5 trillion won on March 24, 2020)
		Broadened the range of institutions eligible for open market operations	• The list of institutions eligible for RP transactions was broadened (expired at end-July 2020)
		Broadened the range of securities eligible for open market operations	• The list of securities eligible for outright transactions and RP transactions was broadened (expired at end-March 2021)
		Expanded the range of eligible collateral for lending facilities	• The range of eligible collateral required for borrowing from the Bank of Korea's lending facilities was expanded (expired at end-March 2021)
		Improved collateral availability of financial institutions	• The ratio of collateral for guaranteeing net settlements was lowered (70% → 50%)
			• The eligible collateral for guaranteeing net settlements was broadened (expired at end-March 2021)
	Stabilization of Treasury, corporate bond and CP markets	Performed outright purchases of Treasury bonds	• Amount purchased: A total of 15.5 trillion won (1.5 trillion won each in March, April, July and August 2020, 2.0 trillion won in September 2020, 1.5 trillion each in October and November 2020, 2.0 trillion won in March 2021, 1.0 trillion won in April 2021, and 1.5 trillion won in June 2021)
		Corporate-Bond-Backed Lending Facility	• Ceiling: 10 trillion won • Operation period: terminated on February 3, 2021 • Eligible collateral: Prime corporate bonds (rated at least AA-) with remaining maturity of five years or less
		Supported the credit market through an SPV that purchases corporate bonds and commercial paper	• Size: 10 trillion won (expanded up to 20 trillion won depending on market conditions) • Expiration date: July 13, 2021 (extended by six months) • Size of the Bank's loans to SPV: 3.56 trillion won (accumulative basis)
	FX market stabilization	Signed a bilateral currency swap agreement with the US Federal Reserve	• A 60.0 billion US dollar bilateral currency swap agreement was signed • Maturity: End-September 2021 (extended twice by six months each)
		Implemented competitive US dollar loan facility auctions	• A total of 19.872 billion dollars was supplied
		Raised the ceilings on FX derivatives positions of banks	• Domestic banks (40% → 50%) and foreign bank branches (200% → 250%)
		Temporarily lifted the levy on financial institutions' non-deposit FX liabilities	• Banks, securities companies, credit card companies, and insurance companies were temporarily exempted from the foreign exchange macro-prudential stability levy for three months (during the period between April and June 2020)
		Supplied foreign currency liquidity through purchase of foreign currency bond repurchase agreements	• The Bank of Korea provided US dollar funding to domestic financial institutions through foreign currency bond repurchase agreements. • Eligible bonds: US Treasury bonds (US government agency bonds if necessary)

Note: 1) Shaded cells indicate measures that have reached their expiration date.

Source: Bank of Korea.

4. Other Monetary Policy Measures

The Bank of Korea is enhancing its monitoring of financial and FX market movements and of financial stability conditions, while striving to strengthen its global financial cooperation and improve the safety and efficiency of the payment and settlement systems. The Bank has also continued research on central bank digital currency (CBDC).

Continued monitoring of financial and FX market conditions

The Bank of Korea continuously monitored movements in the financial and FX markets at home and abroad. The Bank also looked closely into the impacts of the evolution of domestic and global risk factors on the financial and FX markets by operating the emergency financial market monitoring and response system during times of heightened market volatility.

Through the COVID-19 Response Task Force set up in late January 2020, the Bank of Korea has carefully monitored developments of the COVID-19 pandemic and the impacts on the domestic and international financial sectors and economies, as well as changes in financial and FX market conditions following the Bank's implementation of market stabilization measures. The Bank held a Financial and Economic Conditions Review Meeting on March 18 to discuss international financial market trends since the US Federal Reserve's FOMC meeting, the possible impacts on domestic financial and FX markets, and relevant response measures.

Strengthened monitoring of financial system risk factors in line with prolongation of COVID-19

The Bank of Korea continued its preemptive identification of and early warning activities related to potential risk factors within the financial system that could be caused by domestic and global uncertainties from the prolongation of COVID-19.

At the March Financial Stability Meeting, the Bank made multifaceted examinations of how the changes in economic conditions brought on by the prolonged pandemic could affect household and corporate debt servicing capacities and their fiscal soundness.[68] The Bank analyzed the possibility of increased credit risk particularly in vulnerable sectors affected by COVID-19, if the pace of corporate recovery differs by industry in the current situation in which corporate performances have been generally sluggish since the pandemic. The Bank examined the possibility of worsening financial conditions and debt servicing capacities of self-employed workers in terms of assets and income, as their borrowing has seen a sharp increase and their sales have been lagging. In addition, considering that climate change has been placed at the forefront of the global agenda, the Bank looked into domestic financial institutions' exposures to high-carbon industries and examined potential risks that could materialize during the transition to a low-carbon economy.

68) Please refer to the press release Financial Stability Conditions (March 2021) for details.

Meanwhile, the Bank of Korea shared views and continually discussed countermeasures regarding the key current issues and potential risks related to Korea's financial and economic stability through the Macroeconomic and Financial Meeting and other consultative bodies.

Assessed current issues and potential risks to the Korean financial system through joint examinations

In order to check potential risk factors accumulated in the financial system, the Bank of Korea examined risks of individual banks while maintaining continuous monitoring of financial institutions, households and firms.

The Bank of Korea conducted joint examinations of internet-only banks to identify the influences of financial digitalization such as the launch of internet-only banks and the spread of Fintech. The Bank checked not only the situations regarding lending and soundness management, and future recapitalization and asset management plans, but also risk factors related to non-face-to-face financial transactions, including internet and mobile-based financial services.

Table II-5. BOK-FSS joint examination of financial institutions[1)]

2017	2018	2019	2020	2021
Year	Year	Year	Year	Jan.~May.
6	5	6	2	1

Note: 1) Number of examinations conducted.
Source: Bank of Korea.

Meanwhile, the Bank examined credit exposures of large conglomerates since the COVID-19 outbreak, and the impacts of strengthened regulations on household lending. The Bank also looked into the management conditions of banks and bank holding companies, including their asset soundness, profitability and special features related to corporate management.

In addition, the Bank of Korea expanded efforts to ensure smooth communications with financial institutions, by holding meetings with financial institution staff in charge of inspections and briefing sessions to explain the examination results of target banks, thereby improving the system of feedback on the Bank's examinations.

Strengthened global financial cooperation

The Bank of Korea participated in conference calls hosted by international organizations and consultative bodies, such as the BIS, G20, and IMF. Through these meetings, the Bank strengthened global policy coordination and identified evolving global financial and economic conditions and policies of major economies in a timely manner, thereby enhancing effectiveness of policy responses. At the meetings, the Bank discussed assessments of policy responses to COVID-19, world economic outlooks and plans to stimulate recovery, and ways to deal with climate change.

The Bank of Korea also sustained efforts to enhance multi-layered financial safety nets by building up currency swap networks with major central banks. In March, the Bank of Korea renewed its bilateral currency swap agreement with the Swiss National Bank. As part of this process, the purpose of "facilitating the functioning of financial markets" was newly added to the agreement, in addition to the existing purpose of "enhancing bilateral cooperation." The effective period was also extended to five years from previously agreed three years, to ensure further strengthening of the safety net in the foreign exchange sector.[69)] As a co-chair central bank of the ASEAN+3 Financial Ministers and Central Bank Governors Meeting,[70)] the Bank of Korea focused on coordination and consultation of opinions of member countries to enhance the effectiveness of regional financial safety nets by revising the operational guidelines of the Chiang Mai Initiative Multilateralization (CMIM), which is a regional multilateral currency swap arrangement. The revisions are follow-up measures drawing up sub-regulations of the revised CMIM agreement which was agreed in September last year and came into effect on March 31, 2021. Key revisions to the guidelines to be made in 2021 cover the development of an alternative benchmark risk-free rate to LIBOR and institutionalization of the use of regional currencies.

Enhanced safety and efficiency of payment and settlement systems, and continued study of CBDC

The Bank of Korea has continued efforts to enhance the safety and efficiency of the payment and settlement systems.

The Bank is examining whether the Principles for Financial Market Infrastructures (PFMI)[71)] and other international standards in the field of payment and settlement are implemented smoothly at home. The Bank is assessing whether BOK-Wire+, which was launched in October 2020, complies with the PFMI, and is examining IT operational risk factors in line with increased remote working since the COVID-19 outbreak. The Bank will recommend improvement in any areas that require it. Meanwhile, through a joint examination conducted on a domestic bank in April 2021, the Bank of Korea assessed the bank's compliance with relevant regulations as well as its settlement risk management practices, and made recommendations in some areas where necessary.

The Bank of Korea continued its research on central bank digital currency (CBDC)[72)] to preemptively cope with future changes in the payment and settlement environment which could increase the need for CBDC adoption. The Bank is scheduled to carry out a pilot test for the CBDC in a restricted virtual environment from the second half of this year, following the consultation results for a CBDC work process completed this March. To this end, the Bank will create a cloud-based test environ-

69) The size of this agreement is maintained at CHF 10 billion/ KRW 11.2 trillion, as agreed *ex ante*.

70) The meeting is co-chaired by one of the ASEAN+10 countries and one among Korea, China and Japan in rotation every year. Korea and Brunei are the co-chairs of the meeting for this year.

71) Following the global financial crisis, a need was identified to expand over-the-counter (OTC) derivatives market infrastructures and strengthen the international standards for the operation of financial market infrastructures. Accordingly, the BIS Committee on Payments and Market Infrastructures (CPMI), jointly with the International Organization of Securities Commission (IOSCO), integrated the existing international standards. In April 2012, they were established as the new international standards for payment and settlement systems. CPMI-IOSCO has enacted additional international standards as supplementary guidelines for PFMI compliance, including its Guidelines on Cyber Resilience for Financial Market Infrastructures (Jun. 2016), Recovery of Financial Market Infrastructures (Jul. 2017) and Resilience of Central Counterparties (CCPs): Future Guidance on the PFMI (Jul. 2017).

72) Different from reserve requirements and transferable deposits, it means a type of digital currency issued by central bank.

ment, examine basic functions of CBDC and its possible usages, and run a performance test of the overall IT system. Apart from this, the Bank of Korea is closely monitoring changes in the global environment surrounding CBDC, while enhancing information sharing and cooperation with other central banks in order to share the results of research conducted by major economies.

Ⅲ

Future Monetary Policy Directions

1. Growth and Price Forecasts[73)]

Domestic economy to show stronger recovery

The GDP growth rate is forecast to be 4.0% in 2021 and 3.0% in 2022.[74)75)] The domestic economy is expected to show a stronger recovery, as exports and facilities investment remain favorable boosted chiefly by the global economic recovery and private consumption also shows improvement.

By sector, private consumption is forecast to continue to improve, led by the recovery of consumer sentiment and the easing of sluggish income conditions. Household income is expected to emerge from its slump as employment conditions improve gradually, and consumer sentiment is forecast to improve continuously, boosted by accelerating vaccinations and expectations of an economic recovery. Accumulated household purchasing power since the outbreak of COVID-19 and government support measures are expected to contribute to the recovery of consumption. Consumption of face-to-face services, having contracted significantly last year, is forecast to lead the improvement of consumption, while recovery of expenditures abroad by Korean residents is expected to be slow despite the partial easing of cross-border travel restrictions.

Facilities investment is forecast to sustain a strong recovery, particularly in the IT sector. The IT sector is expected to see continued strong investment growth as in the previous year, driven chiefly by the recovery of the semiconductor industry, and investment in the non-IT sector is forecast to improve boosted by the global economic recovery and increased investment in environmentally friendly and new growth industries. Investment in intellectual property products is projected to maintain growth, as R&D investment is forecast to increase, driven by increased corporate sales in line with the economic recoveries at home and abroad, while investment in other intellectual property products is also expected to continue its upward trend, boosted by growing demand for IT services in line with increased non-face-to-face activities. Construction investment will likely recover centering around building construction, driven by the increase in construction starts that began last year. Civil engineering will likely exhibit modest growth due in part to government policies, but the pace of growth is forecast to be slower than during the preceding year.

Exports are projected to maintain favorable movements, driven chiefly by recoveries of major economies and continued improvement in the global IT industry. The current account surplus is expected to narrow year-on-year, as the goods account surplus is forecast to narrow due to the sharp increase in goods

73) Based on the Bank of Korea's 「Economic Outlook Report」 released on May 27, 2021.

74) The GDP growth forecasts for 2021 and 2022 (4.0% and 3.0%) are higher than the February forecasts (3.0% and 2.5%), by 1.0%p and 0.5%p, respectively.

75) The current economic outlook is based on the following assumptions: amid differentiated spread of COVID-19 and vaccine distribution across countries, the spread of the pandemic will subside in advanced countries in the second half of this year when widespread vaccinations are achieved, while emerging market countries will see the spread of COVID-19 slowing gradually next year when they start large-scale vaccinations. In Korea, the spread of the pandemic will ease gradually in the second half of this year when vaccine distribution will likely increase significantly.

imports owing to higher oil prices and the recovery in domestic demand, despite the rise in goods exports thanks to the buoyant global IT industry, more than offsetting a narrowing of the services account deficit amid an increased surplus in transportation services in line with the increased shipping capacities of national shipping companies and higher freight rates.

There are various upside and downside risks to the future growth path. Upside risks include improvement in consumer sentiment in line with accelerated vaccinations, additional stimulus measures at home and abroad, and a stronger recovery of the global semiconductor industry. Among the downside risks are a delay in normalization of economic activity due to vaccination disruptions, continued production setbacks at some manufacturers, and intensified conflicts between the United States and China.

Table III-1. Economic growth outlook[1)]

(YoY, %)

	2020[2)]	2021[e]			2022[e]		
	Year	H1	H2	Year	H1	H2	Year
GDP	-0.9	3.7	4.2	4.0	3.2	2.8	3.0
Private consumption	-5.0	1.0	4.0	2.5	4.7	2.3	3.5
Facilities investment	7.1	10.7	4.3	7.5	2.8	4.2	3.5
Intellectual property products investment	4.0	3.6	5.0	4.3	4.3	3.4	3.8
Construction investment	-0.4	-1.0	3.4	1.3	2.3	2.7	2.5
Goods exports	-0.5	14.8	4.0	9.0	1.9	3.1	2.5
Goods imports	-0.1	11.0	5.9	8.3	3.0	4.0	3.5

Notes: 1) Figures are the forecast as of May 2021.
2) Reflects preliminary figures.
Source: Bank of Korea.

Inflation forecast to accelerate significantly to record 1.8% this year

Consumer price inflation is forecast to increase significantly from 0.5% last year to record 1.8% this year, far exceeding the February forecast (1.3%), due to the faster-than-expected increase in international oil prices and the continued strong growth in agricultural and livestock product prices. In 2022, consumer price inflation is forecast to decline to 1.4% due to the decreasing effects of supply-side factors such as oil prices and agricultural and livestock product prices. Meanwhile, core inflation excluding food and energy prices is projected to rise from the previous forecast (1.0%) to 1.2% this year and 1.4% in 2022.

A look at various factors affecting prices shows that, in terms of overseas factors, international oil prices have sustained their uptrend to stand at the mid-60 dollar level recently, and grain and non-ferrous metal prices have also maintained strong growth since the second half of last year. The Korean won-US dollar exchange rate has risen somewhat this year, in reflection of the rapid US economic recovery. In terms of domestic factors, the negative output gap is forecast to narrow at a faster-than-expected pace. Inflation expectations among the general public (one-year ahead) have risen to the lower-2% level, and nominal wages have exhibited faster growth affected by a recovery in economic activity and corporate profitability, combined with base-period effects. Regarding other factors, growth in agricultural and livestock product prices has decelerated at a slower pace than expected and remained strong, but the pace of growth is forecast to slow gradually to the level of recent years. Due to the rising costs of ingredients following the continued sharp rise in agricultural and livestock product prices, dining-out expenses are expected to grow at a faster pace than usual. On the government policy side, downward inflationary pressures caused by welfare policies related to education and telecommunications are likely to decrease gradually. This is attributable mainly to the dissipation of downward inflationary pressures from the expansion of free high-school education last year and to the base effects from the telecom subsidy (in the fourth quarter of 2020). The sustained increases in leasehold (*jeonse*) deposit prices and monthly rents (based on new contracts) are forecast to push up the pace of growth in housing rental fees for the time being.

It is assessed that there is a mix of both upside and downside risks to the inflation forecast path. Upside risks to the price forecast include an acceleration of the rise in commodity prices, a sustained strong uptrend in agricultural and livestock product prices, and a stronger recovery in consumer demand in line with accelerated vaccinations. Among the downside risks are a worsening slump in demand resulting from the resurgence of COVID-19 and a delay in electricity and gas charge hikes.

Table III-2. Inflation outlook[1]

(YoY, %)

		2020	2021^e			2022^e		
		Year	H1	H2	Year	H1	H2	Year
CPI inflation		0.5	1.7	2.0	1.8	1.3	1.4	1.4
Core inflation	CPI excluding food & energy	0.4	0.8	1.6	1.2	1.7	1.2	1.4
	CPI excluding agricultural products & oils	0.7	1.2	1.8	1.5	1.7	1.3	1.5

Note: 1) Figures are the forecast as of May 2021.
Source: Bank of Korea.

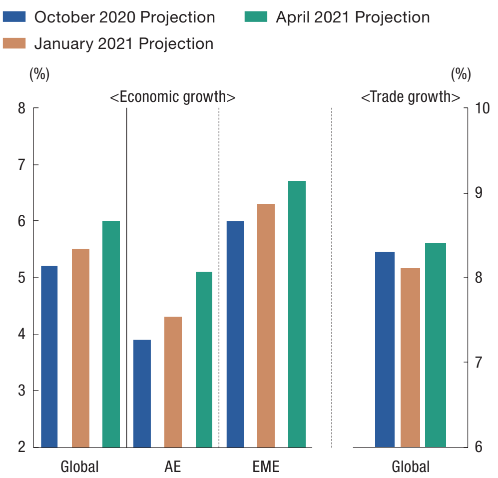
2. Major Considerations

Looking ahead, the Bank of Korea will operate its monetary policy while closely watching the impacts of domestic and external uncertainties on the growth and inflation forecast paths and devoting attention to financial stability as well. In this process, the Bank will also carefully monitor the developments of COVID-19 at home and abroad, global inflation and consequent financial market trends, as well as the possibility of an accumulation of financial imbalances risks.

COVID-19 developments at home and abroad

There are growing expectations of a global economic recovery, as vaccinations have been accelerating in major countries recently. The vaccination rates in major advanced countries are likely to reach the level required to achieve herd immunity[76] by the year-end, with ample amounts of vaccine doses secured and superior vaccination infrastructures. The United States and the United Kingdom,[77] in particular, are likely to see 60~70% of their populations vaccinated (on a single-dose basis) during the first half of this year, and the EU plans to vaccinate 70% of its adult population up to this summer. In this regard, the global economy has been exhibiting stronger recovery,[78] led by advanced countries with rapid vaccine distribution.

Figure III-1. GDP and trade growth[1] outlooks[2] for 2021



Notes: 1) Goods and services.
2) Outlook at respective point in time.
Source: IMF World Economic Outlook.

Emerging market countries, on the other hand, will likely need considerable time to achieve the vaccination rate for herd immunity, due mainly to vaccine shortages.[79] Such

76) However, although a majority of experts initially thought that a vaccination rate of 60~70% would be sufficient to achieve herd immunity, various opinions on the vaccination rate (80~90%) are being suggested following the recent spread of COVID-19 variants.

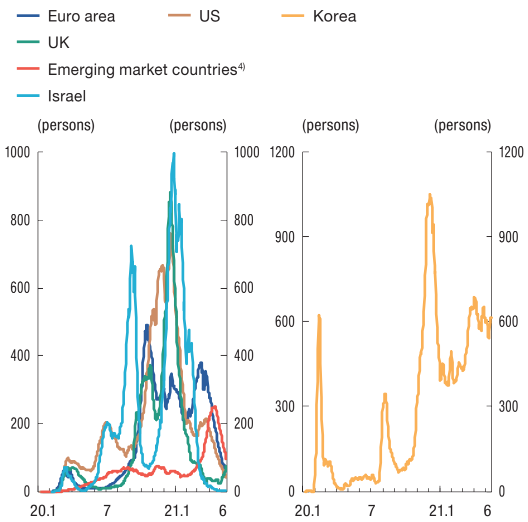
77) President Biden announced the goal of vaccinating 70% of adult Americans with at least one shot by the Fourth of July, and the UK government also announced its plan to offer the rest of the adult population, another 21 million people, their first vaccine by the end of July.

78) The IMF forecast in April this year that global economic growth would reach 6.0% in 2021, up by 0.5%p from the January forecast (5.5%), and that global trade growth would stand at 8.4%, up by 0.3%p from the January forecast (8.1%).

79) Looking at the vaccine procurement ratio (doses/population, first and second shots of two-shot vaccines are counted as one), there is a wide vaccine distribution gap between countries. Major advanced economies have recorded more than 200%, with the United States standing at around 200%, the United Kingdom 409% and the euro area 334%, while emerging market economies fall below 100%, with Mexico recording 73% and Thailand 53%. Moreover, the vaccine procurement ratios of low-income countries including African countries remain below 20% (as of May 28, 2021; sources: governments of respective countries, Duke Global Health Innovation Center).

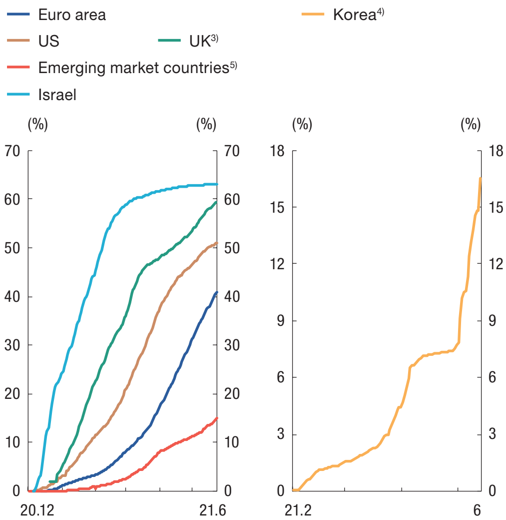
concerns are growing even further, as some countries including India[80] have been facing a serious resurgence of COVID-19 due to virus variants since April. The materialization of the expected vaccine distribution gap between advanced and emerging economies will likely result in a delay in reaching global herd immunity. The vaccine distribution gap and the spread of virus variants are expected to work to increase uncertainty regarding the global economic recovery.

Figure III-2. New confirmed COVID-19 cases[1] (foreign[2] and domestic[3])



Notes: 1) As of June 7, 2021.
2) Daily new confirmed cases per million persons by region (based on 7-day moving averages).
3) Daily new confirmed cases nationwide (based on 7-day moving averages).
4) India, Brazil, Russia, Mexico, and Turkey.
Source: OurWorldInData.

Figure III-3. COVID-19 vaccination ratio by country[1)2)]



Notes: 1) Administered at least one dose; in total population.
2) As of June 6, 2021.
3) As of June 5, 2021.
4) As of June 7, 2021.
5) India, Brazil, Russia, Mexico, and Turkey.
Source: OurWorldInData.

In Korea, the number of new confirmed COVID-19 cases generally remained at the 500~600 level in April and May. While the social-distancing level has generally remained unchanged[81] since April, domestic mobility[82] has been increasing gradually. As a result, exports and facilities investment have sustained their buoyancy, while private consumption has gradually emerged from its slump, boosted by the easing of social-distancing measures and the recovery of consumer sentiment. The recovery of the domestic economy is expected to accelerate gradually, led by vaccinations[83] and

80) In India, the number of daily new confirmed cases increased from 17,000 in the first week of March to 255,000 in the third week of May, and the daily death toll also rose significantly from 99 to 4,190 over the same period.

81) The Korean government announced its plan to ease the social-distancing measures and introduce new social-distancing guidelines in July if vaccinations are implemented as scheduled and the number of new confirmed cases is maintained at an appropriate level (according to the COVID-19 Central Disaster and Safety Countermeasures Headquarters regular briefing on April 30, 2021).

82) The Mobility Index stood at -7.7 (daily average) in the second week of February when vaccinations were about to begin, but then recorded 4.0 in the third week of May (retail sales and recreation related index; source: Google).

83) The government announced on May 20 that it would supply a total of 190 million vaccine doses, including 10.09 million in the second quarter, about 80 million in third quarter and 90 million in the fourth quarter of 2021. The government also announced its plan to vaccinate 13 million people in the first half of this year.

the consequent gradual expansion of economic activity. Potential risks remain, however, such as the spread of virus variants[84] at home and abroad.

In this regard, it is necessary to closely monitor COVID-19 developments at home and abroad, the status of vaccine distribution and vaccination, and their impacts on the Korean economy.

Growing global inflation concern

Global inflation, which plunged due to the spread of COVID-19 at the beginning of last year, has started to pick up gradually since the beginning of this year. Particularly, as inflation has been accelerating faster than expected recently in the United States[85] and other major countries, there are mounting concerns[86] about global inflation. This recent trend is attributable mainly to the base effects from the substantial deceleration in inflation due to tumbling demand last year, the recovery of demand[87] following the easing of restrictions on economic activity, and supply bottlenecks for some commodities.

Central banks in major economies and a large number of market participants generally see[88] this trend as a transient phenomenon, but some raise concerns[89] that inflation could continue. These concerns seem to be attributable to a delay[90] in the recovery of the global supply chain and to growing[91] upward pressure on wages in the labor market. Moreover, as inflation expectations have been increasing in line with the further expansions[92] in fiscal

84) The government's survey on COVID-19 awareness in March and April showed that the share of non-vaccinated respondents willing to get vaccinated fell by 6.6%p to 61.4% in April from 68.0% in March. Vaccine receptivity is one of the factors affecting the containment of the spread of COVID-19.

85) Consumer price inflation in the United States recorded 4.2% (YoY) in April 2021, far exceeding the market forecast (3.6%). Core inflation excluding the prices of agricultural and petroleum products stood at 3.0%, also higher than the market forecast (2.3%).

86) In some recent surveys of market participants and economists, inflation (35%), rather than COVID-19 (9%), was pointed to as the largest future tail risk (BoA「Global Fund Manager Survey」, May 2021).

87) Prices related to face-to-face service industries, such as hotels and airlines, which had been directly affected by the COVID-19 shock last year, emerged from their previous slump to record significantly positive growth, working to boost the recovery of demand temporarily (US consumer price inflation (YoY) in April 2021: 9.6% for airlines, 8.1% for hotels).

88) In its April FOMC meeting statement, the US Federal Reserve stated that inflation had recently risen, "largely reflecting transitory factors." Chairman Jerome Powell also made it clear at the press conference that the increase in prices was a reflection of transitory effects. Moreover, a Bloomberg survey (in May 2021) forecast US consumer price inflation to record 3.0% in 2021 and slow somewhat to stand at 2.3% in 2022.

89) According to the US Federal Reserve's FOMC meeting minutes released on May 19, a number of participants remarked that supply chain bottlenecks and input shortages might not be resolved quickly and, if so, these factors could put upward pressure on prices beyond this year.

90) If more companies move away from global supply chains along with stronger reshoring efforts by the United States and other major countries, this may cause production costs to rise, putting upward pressure on global inflation.

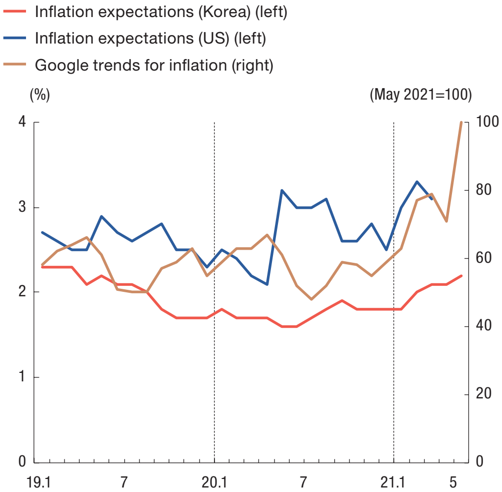
91) In the United States, reduced labor supply following the expansion in jobless benefits, the increase in the minimum wage, and stronger bargaining power of labor unions in line with the government's pro-labor policy are considered as major factors behind the growing upward pressure on wages.

92) Following the 1.9 trillion dollar「American Rescue Plan」passed by the United States Congress in March this year, President Biden announced the 2.3 trillion dollar「American Jobs Plan」at the end of March and the 1.8 trillion dollar「American Families Plan」at the end of April.

expenditure and the sustained ultra-accommodative monetary policy stances[93] in major advanced countries, the possibility should not be ruled out that these could affect the global inflation trend.

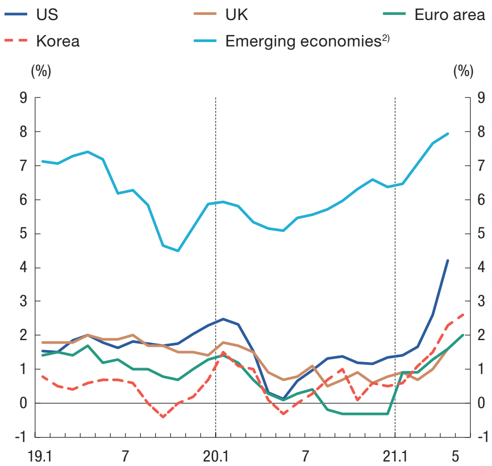
As various opinions have been raised about inflation outlook, it is necessary to carefully monitor global inflation developments and consequent financial market reaction at home and abroad as well as their spillover effects.

Figure III-4. Inflation expectations[1] and Google Trend[2] for inflation



Notes: 1) For the next 12 months, general expectations.
2) Based on number of searches for inflation on Google Trends (May 2021=100).
Sources: Bank of Korea, University of Michigan, Google.

Figure III-5. Developments of CPI inflation rate in major economies[1]



Notes: 1) Year-on-year.
2) Simple average of India, Brazil, Russia, Mexico, and Turkey.
Sources: Statistics Korea, U.S. Bureau of Labor Statistics, FRED, Bloomberg.

High risk preference continues in financial markets at home and aborad

Preference for risk assets continued in the domestic and international financial markets, owing primarily to accommodative policy stances maintained in major economies and growing expectations for economic recovery.

In the international financial markets, long-term market rates went up and stock prices repeatedly hit record highs despite concerns about overvaluation, particularly in advanced countries. Credit markets remained calm with the spreads of speculative-grade corporate bonds narrowing substantially. In emerging market economies, government bond spreads remained[94] narrow, while equity prices inched

93) Despite the recent inflation conditions, senior US Federal Reserve officials (including Vice President Clarida) reaffirmed in early May their position that the current economic situation remained far from the Federal Reserve's goal.

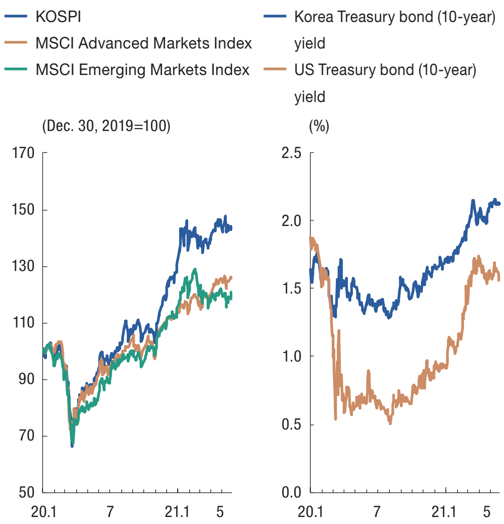
94) The EMBI+ spread declined after reaching 641bp in March 2020, and recorded 365bp at end-February and 353bp on May 20.

down due to resurgence of COVID-19 in some countries. Meanwhile, investment in high-risk assets such as cryptoassets soared[95] as risk sensitivity dampened considerably.

Domestic equity prices and interest rates also showed similar movements to those of international financial markets in general, whereas retail investors' net purchase of domestic stocks continued to rise with leveraged investment expanding.[96] In the credit market, spreads of corporate bonds with low credit rating narrowed.

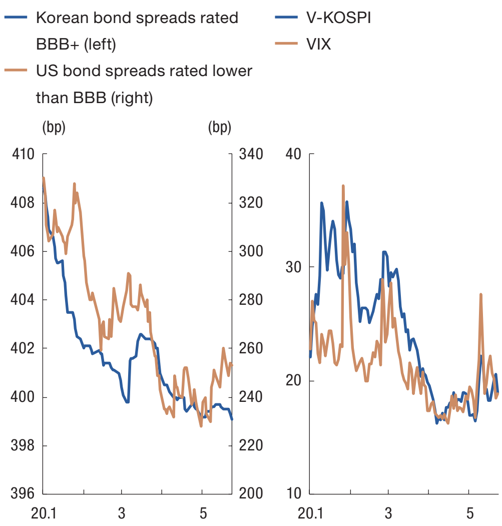
However, risk appetite has been declining slightly since mid-May due to growing concerns over inflation risk and resurgence of the coronavirus in some countries. This has resulted in heightened volatility in the financial markets, causing the rate of stock price growth to slow at home and abroad, and the price of risk assets including cryptoassets to fluctuate greatly.

Figure III-6. Global stock prices and Treasury bond yield



Sources: Bank of Korea, Bloomberg.

Figure III-7. Low-rated corporate bond credit spreads and stock price volatlity



Sources: Korea Financial Investment Association, Bloomberg.

95) The total market capitalization of cryptoassets expanded from 0.8 trillion dollars at end-December 2020 to 1.8 trillion dollars as of May 21 this year (source: CoinGecko).

96) Retail investors' net purchase of domestic stocks amounted to 7.6 trillion won in March, 7.0 trillion won in April and 9.7 trillion won in May (May 1~21), while the outstanding balance of loan trading rose from 19.2 trillion won at end-December 2020 to 23.2 trillion won (as of May 20) this year.

Risk appetite remains high, despite some asset markets having undergone correction. If investors continue to pursue excessive search for yield and leverage expansion, risk appetite could be reversed upon an outbreak of external or internal shocks, possibly causing volatility in the domestic and international financial markets to surge.

Therefore, close attention must be paid to risk factors such as the level of risk appetite in the financial markets at home and abroad, leverage conditions, the developments of key price variables as well as the domestic and international economic indicators that affect them, changes in market expectations for the monetary policy stances of major central banks, and developments of COVID-19.

Household debt and housing market conditions

While housing price growth remains high, the rate of increase in household debt has accelerated considerably, causing concerns about a buildup of financial imbalances.

Housing price growth slowed since February amid a steady slowdown[97] of housing transaction volume, due to a slight softening of buyer sentiment and of expectations for price hikes. However, housing price growth continued to remain high,[98] particularly in the Seoul Metropolitan area. Leasehold (*jeonse*) deposits also sustained their upward trend since May last year in both the Seoul Metropolitan area and the rest of the areas of the country, due partly to a continued mismatch[99] between supply and demand. The pace of growth in household lending accelerated[100] as housing prices continued their uptrend with temporary factors having significant impacts. The pace of growth in housing-related lending decelerated slightly, owing to a decline[101] in the number of new apartments and the subsequent drop in group lending. However, other loans rose considerably, driven by a temporary spike[102] in demand for leveraged stock investment since April.

97) Nationwide housing sales volume (monthly average, 10,000 units): 11.7 in Q4 2020 → 9.3 in Jan.~Apr. 2021.

98) The rate of increase in nationwide housing sales prices (MoM) recorded a monthly average of 0.8% in Q1 2021, followed by a 0.7% increase in April and May, respectively, which considerably exceed the monthly average increase rate (0.44%) of last year (source: Korea Real Estate Board).

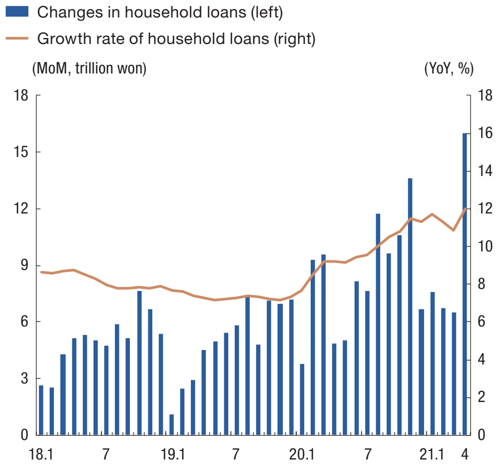
99) The Supply and Demand Trends Index for Leasehold (*jeonse*) Market for apartments in the Seoul Metropolitan area slowly declined after hitting a peak in December last year (127.1 in Dec. 2020 → 114.2 in Apr. 2021), but still stands well above the baseline (100).

100) Banks' household lending growth (YoY): 11.7% in Jan. 2021 → 11.3% in Feb. → 10.8% in Mar. → 12.0% in Apr.

101) Nationwide new apartment volume (10,000 units): 3.3 in Feb. 2021 → 1.9 in Mar. → 1.1 in Apr.

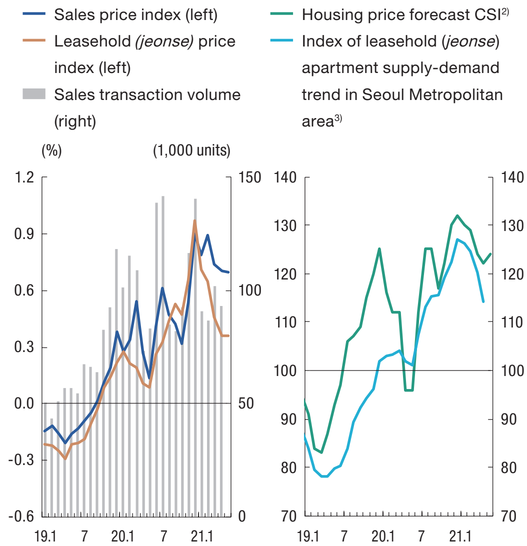
102) This was largely attributable to SK IE Technology's IPO subscription carried out on April 27~28, 2021.

Figure III-8. Household loans[1] growth rate and changes



Note: 1) Including mortgage transfers; based on depository institutions.
Source: Bank of Korea.

Figure III-9. Housing market price indices[1], sales transaction volume and sentiment index



Notes: 1) All housing types, nationwide; month-on-month.
2) A figure exceeding 100 indicates that a forecast for an upward trend is dominant.
3) A figure exceeding 100 indicates that demand exceeds supply.
Sources: Korea Real Estate Board, Bank of Korea.

Given the continuing accommodative financial conditions and the demand for funds related to housing sales and leasehold (*jeonse*) transactions, the rate of household debt growth could remain high for the foreseeable future. The pace of increase in housing-related lending is not likely to slow significantly, as the demand for housing transactions remains high[103] and the demand for leasehold (*jeonse*) deposits continues. The possibility of seeing a sustained increase in other lending also cannot be ruled out, due to the continued demand for risk asset investment. However, implementation of the government's household debt management measures[104] announced last April will work as a factor that partly diminishes the upward pressures on household debt.

Given the ongoing rise in prices of assets such as housing and continuing sharp increase in household debt, the Bank of Korea will need to pay further heed to the possibility to the accumulation in financial imbalances and closely monitor conditions related to financial stability, including fund inflows to the asset market and household debt growth, as it conducts monetary policy.

103) The housing transaction volume between January and April 2021 (370,000 units) is still larger than the average volume (280,000 units) of same period in previous years (2011~2019).

104) On April 29, the Korean government announced household debt management measures aimed at managing the aggregate volume of household debt (keeping the household debt growth at the 5% to 6% level this year and at the 4% level from 2022) and at expanding the scope of the DSR regulation on individual borrowers (DSR rules which have been applied to selective borrowers will be expanded in phases until 2023).

3. Future Monetary Policy Operational Directions

Base Rate operations

The Bank of Korea will continue to conduct its monetary policy in order to support the economy and stabilize consumer price inflation at the target level (2%) over a medium-term horizon, while paying attention to financial stability.

The Bank will maintain its accommodative monetary policy stance for the time being. While the Korean economic recovery is expected to strengthen and inflation to remain at a high level for some time, there are underlying uncertainties surrounding the path of COVID-19, and inflationary pressures on the demand side are forecast to be modest. In this process the Bank will assess developments related to COVID-19 and economic developments in major countries, while paying closer attention to the buildup of financial imbalances such as fund flows concentrated in asset markets and household debt growth.

Enhancement of monetary policy effectiveness

The Bank of Korea will continue its efforts to enhance monetary policy effectiveness. First, the Bank will work to reinforce its policy communication to enhance the transparency and predictability of monetary policy. Normalization of the unprecedently accommodative monetary policy stance in response to COVID-19 has emerged as a key task as economic recovery has been picking up recently. Accordingly, the Bank will devote efforts to bring market expectations in line with its policy intention by smoothly communicating its assessment of financial and economic conditions, and other factors such as intensifying financial imbalances which are important considerations in determining the direction of monetary policy. In addition, the Bank will seek ways to effectively operate monetary policy instruments, including the Bank Intermediated Lending Support Facility and open market operations. Furthermore, given that economic agents are increasingly interested in inflation conditions, the Bank will closely examine the conditions surrounding its inflation targeting operations and faithfully communicate the results with economic agents. Meanwhile, considering the changes in monetary policy operation conditions in line with rapid changes in economic conditions, and expectations for an expanded role for the central bank, the Bank will also strengthen its efforts to examine and improve the monetary policy framework over a medium- to long-term horizon. The Bank of Korea will also analyze the economic, industrial, and labor structure in the post-pandemic era, as well as technological and environmental changes, and strengthen its research on their effects on monetary policy.

Promotion of financial and foreign exchange market stability

The Bank of Korea will continue its efforts to maintain the stability of financial and foreign exchange markets. Given the possibility that domestic and international financial markets could respond sensitively to pandemic developments, global inflation movements and monetary and fiscal policies of major countries, the Bank will closely monitor major price variables in the financial and foreign exchange markets, and the flows of funds. The Bank will continue to purchase Treasury bonds in accordance with the plan to expand outright purchases of Treasury bonds announced in February this year, while implementing market stabilization measures in a timely manner, should concerns over market turbulence rise due to the changes in financial and economic conditions at home and abroad. Furthermore, when the current temporary measures to support the financial markets, such as an SPV that purchases corporate bonds and CP, are set to expire, the Bank will decide whether to extend them after comprehensively evaluating their continued necessity and what effects their termination would have.

Maintenance of financial system stability

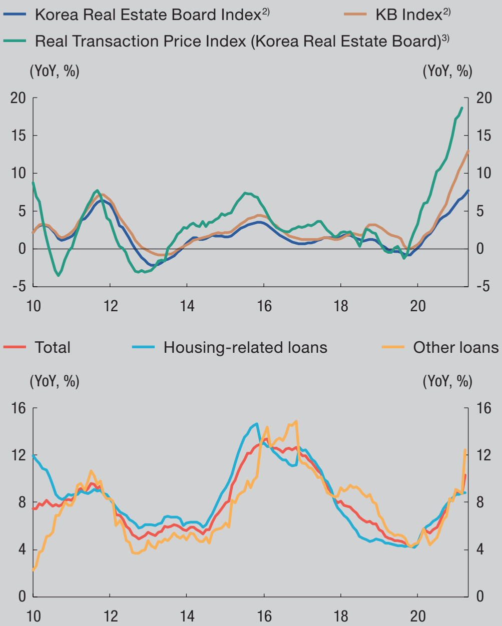
The Bank of Korea will examine the effects of changes in financial and economic conditions at home and abroad on financial system stability, and continue its early warning activities concerning potential financial sector risks. The Bank will examine financial stability conditions by, for example, strengthening its analysis on vulnerable areas in the household and corporate sectors, while paying attention to medium- to long-term financial stability risks such as a spike in private sector debt in the course of the COVID-19 response and the subsequent accumulation of financial imbalances. The Bank of Korea will also closely monitor the possible emergence of new forms of risks created amid rapidly changing financial and economic conditions, such as climate change and progress in digital financial innovations.

Box Ⅲ-1.

Evaluation of Recent Developments in Financial Imbalances

Although there is no official definition of financial imbalances agreed among central banks or members of academia, it generally refers to excessive expansion of leverage and overvaluation of assets caused by a rise in economic agents' risk appetite. This section assesses the developments in financial imbalances, centering on housing prices and household debt, over which concerns are being raised in Korea.

Increase rates of housing prices and household debt[1)]

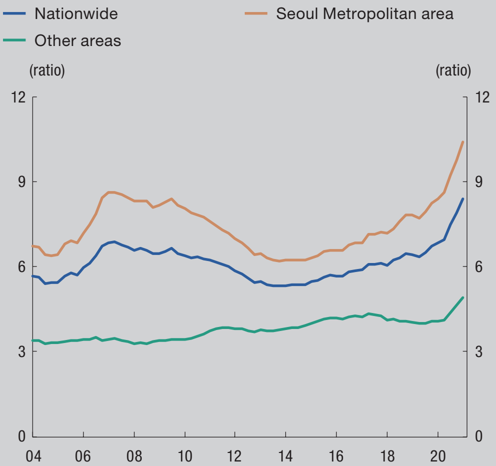


Notes: 1) Based on household loans by banks and non-banks.
2) Based on nationwide housing.
3) Based on nationwide group housing.
Sources: Korea Real Estate Board, KB Kookmin Bank, Bank of Korea.

(Recent developments in financial imbalances)

Looking at the developments in financial imbalances in more detail, housing prices have recently been rising rapidly, showing a significant disparity from the developments in basic purchasing power including income. The price-to-income ratio[1)] (PIR) in the Seoul Metropolitan area exceeded the peak recorded before the global financial crisis (Q1 2007), and has been on an uptrend thereafter. The PIR of the non-Metropolitan area, which had been declining steadily since 2017, has soared since last year, currently exceeding the peak posted in the second quarter of 2017.

Price-income ratio[1)] (PIR)



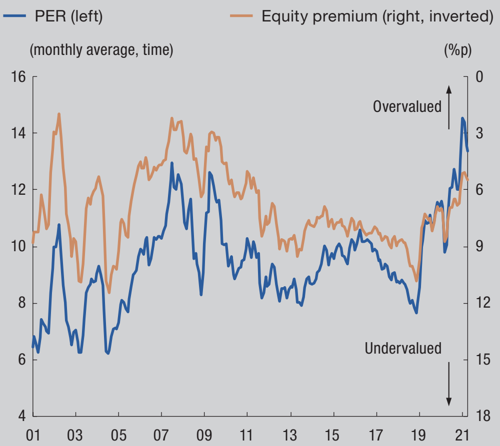
Note: 1) Average sales prices of an apartment with area of 109㎡ divided by the nationwide average of annual income for worker households (on the basis of household incomes for workers in the Seoul Metropolitan area).
Sources: Statistics Korea, Real Estate 114, estimates by Bank of Korea.

Stock prices plunged immediately after the outbreak of coronavirus, but rebounded quick-

1) The PIR can vary depending on the data used and calculation method. This section used average apartment transaction price data from Real Estate 114 in order to ensure long-term time series and to distinguish the Seoul Metropolitan area from non-Metropolitan areas. The PIR used for this analysis slightly differs from that produced by KB Kookmin Bank, which is calculated by using housing sale prices for each quantile of the overall housing market. Meanwhile, KB Kookmin Bank's PIR has some limitations, such as lacking data prior to 2008 and providing only nationwide and Seoul figures.

ly. More recently, the price-earning ratio (PER) reached the highest level since the global financial crisis. However, the equity premium, indicating the return on a stock relative to the return on a bond, has been falling (overvalued), albeit standing higher (undervalued) than immediately before the global financial crisis.

Price-earning ratio[1] (PER) and equity premium[2]

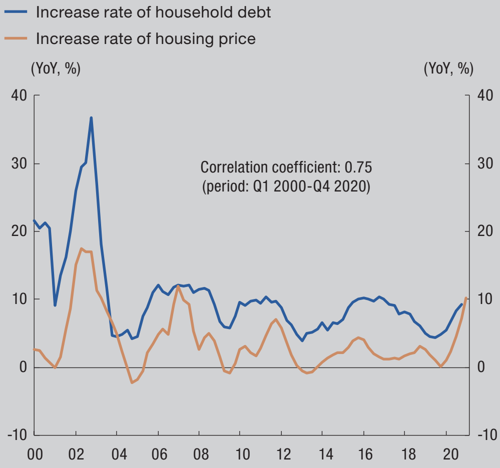


Notes: 1) Equity prices divided by net return per equity anticipated for coming 12 months.
2) Return on equity relative to return on fixed income. The lower the ratio, the more overvalued the equity. (Korea Treasury bond (10-year) yield subtracted from the price rarnings ratio (1/PER))

Sources: Refinitiv, Korea Financial Investment Association.

Household debt has been escalating, affected partly by the rise in housing prices. The pace of growth in housing prices and household debt have both accelerated since 2019, causing the household debt-to-GDP ratio to spike from 91.8% as of end-2018 to 103.8% as of end-2020. As a result, Korea's household debt-to-GDP ratio is the sixth highest among the 37 OECD member countries, with the pace of increase standing at the second highest following Norway.

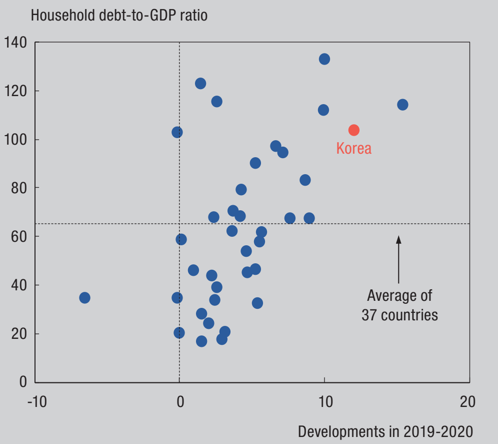
Increase rates of household debt[1] and housing prices



Note: 1) Based on flow of funds (loans and government loans extended to households and non-profit organizations).

Sources: Bank of Korea, KB Kookmin Bank.

Household debt-to-GDP ratio[1] and its developments in major countries[2]



Notes: 1) As of 2020-end.
2) Based on 37 OECD countries.

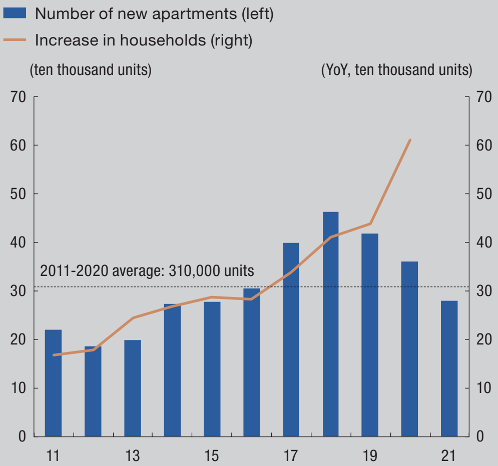
Sources: Bank of Korea, IIF, CEIC.

(Background of financial imbalances buildup)

The buildup of financial imbalances is assessed to have been caused by concerns about s mismatch between housing supply and demand, as well as the heightened search for yield and risk appetite under the accommodative financial conditions.

First of all, in terms of supply and demand, housing demand including that for new homes remained robust due to the increased[2] number of households, while there have been growing concerns surrounding the housing supply owing to a decline in the number of new apartments, causing an increase in the demand for housing purchases.

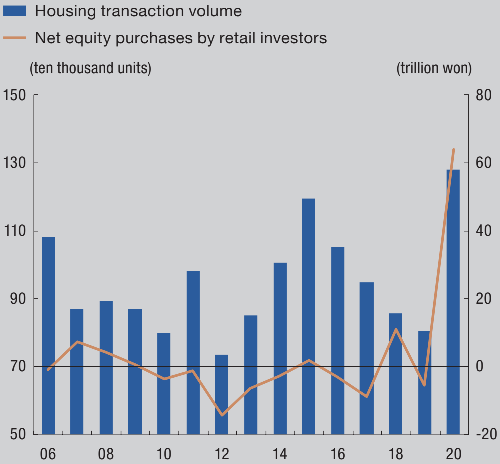
Number of new apartments and amount of increase in households nationwide



Sources: Statistics Korea, Real Estate 114.

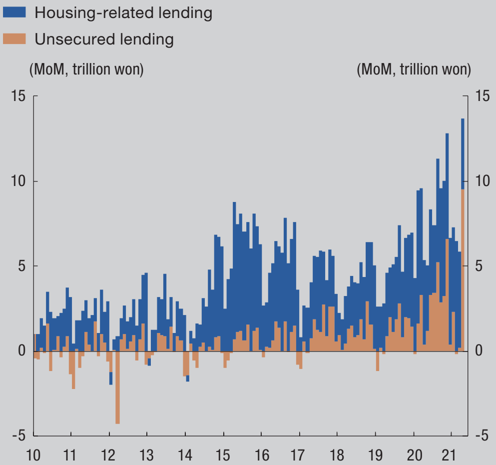
Moreover, the unprecedentedly accommodative financial conditions, which were unavoidable in the face of the COVID-19 pandemic, caused considerable declines in borrowing costs and returns on financial assets such as deposits, working to incentivize investment in other asset markets. The housing transaction volume and net purchase of stocks by retail investors recorded historical highs in 2020, while investment in cryptoassets has also surged recently.

Housing transaction volume and net equity purchases by retail investors



Sources: Ministry of Land, Infrastructure and Transport, Korea Exchange.

Increase/decrease of banks' housing-related lending and unsecured lending



Source: Bank of Korea.

2) A major driver of the increased number of households is the rise in one-person or two-person households resulting from a drop in marriage rate and population ageing. Based on resident registration numbers, the number of households increased by 2.37 million between 2015 and 2020, with the number of households consisting of one or two persons increasing by 3.12 million and those consisting of three or more persons shrinking by 0.75 million.

(Impact of buildup of financial imbalances)

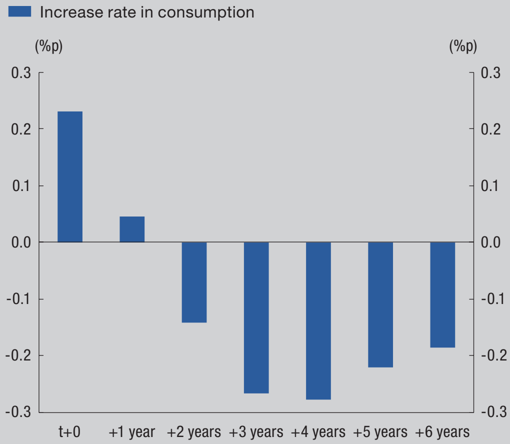
The buildup of financial imbalances is likely to work as a factor that weighs on long-term economic growth. According to theories of consumption, debt up to a certain level boosts consumption via the efficient allocation of inter-temporal resources. However, in excess of that level it can reduce consumption by increasing the debt servicing burden.

Research on household debt threshold

	Threshold (to GDP)	Targets
Cecchetti et al. (2011)	84% (household debt)	18 OECD countries (1980-2010)
Arcand et al. (2012)	80-100% (private sector credit)	126 countries (1960-2010)
Lombardi et al. (2017)	80% (household debt)	23 advanced economies,31 emerging economies (1990-2015)

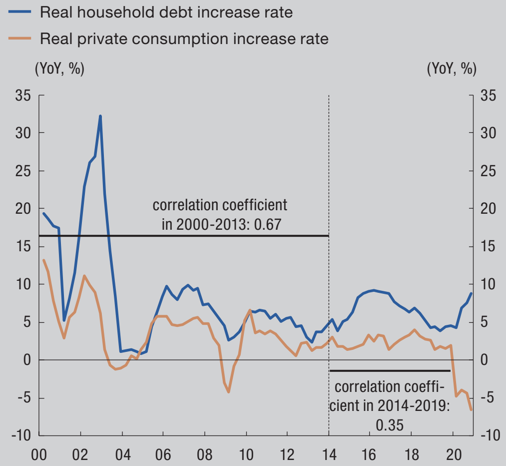
The IMF's panel analysis[3] conducted on major countries (including Korea) shows that a rise in the household debt-to-GDP ratio leads to expanded consumption in the short run, but when household debt accumulates over the long term, the negative impact is estimated to be greater. As for Korea,[4] it is analyzed that positive correlation between household debt and private sector consumption has weakened as the pace of growth in household debt has continuously exceeded that of income.

Effects of 1%p increase in household debt ratio on consumption[1]



Note: 1) Analysis of data from 80 countries between 1950 and 2016.
Source: IMF Global Financial Stability Report (Oct. 2017).

Increase rates of household debt and private consumption



Sources: Bank of Korea, Bank for International Settlement.

Furthermore, the concentration of funds into certain types of assets such as property, which can be seen over the course of a buildup of fi-

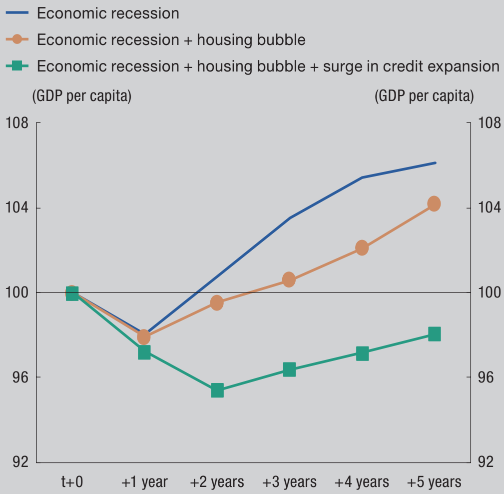
3) The IMF analyzed the impact of household debt on consumption, growth, etc. over the short- and long-term horizon in major 80 countries using data between 1950 and 2016 (Global Financial Stability Report, Oct. 2017).
4) This section looks into the household debt-to-GDP ratio (flow-of-funds basis) in 2014, given that the ratio in Korea as of end-2013 stood at 78%, reaching near the threshold above which growth tends to slow according to some key research.

nancial imbalances, could work as a factor that intensifies economic volatility and deteriorates growth potential. Looking at past business cycles at home and abroad as well as research conducted on major countries, when the economy shifts to a contraction phase against the backdrop of an asset price bubble and debt buildup, the economic recession tends to prolong with heightened economic volatility.[5)]

quacy and loss absorbing capacity of the domestic banking sector remains solid in general.

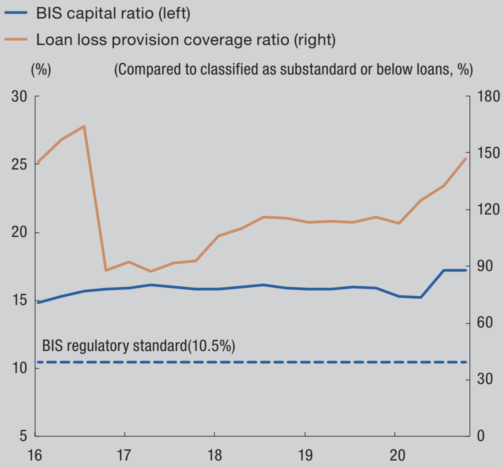
However, considering past crises at home and abroad, close attention must be paid to the fact that an outbreak of external or internal shocks amid a high level of vulnerability including financial imbalances could cause a deterioration in economic or financial stability.

Pace of economic recovery by financial and economic conditions[1)]



Note: 1) 't+0' refers to the year of economic peak.
Source: Jorda et al. (2015).

Commercial banks' BIS capital ratio and loan loss provision coverage ratio



Source: Commercial banks' business reports.

Lastly, regarding financial systemic risk, it is judged that the buildup of financial imbalances at the current stage is not likely to cause a deterioration in the overall financial system. Although financial institutions' exposure to real estate is growing,[6)] the collateral ratio including LTV ratio has dropped[7)] due partly to rising housing prices and lending regulations, while the capital ade-

5) Jorda et al. (2015) analyzed 17 countries including the United States for the period between 1870 and 2013.

6) The sum of loans extended to households and real estate related companies and of investment in real estate related financial products by financial institutions and guarantee companies increased by 148 trillion won, from 2,067 trillion won in 2019 to 2,215 trillion won in 2020 (as of end-Sep. 2020).

7) The average LTV ratio of commercial banks' mortgage loans declined from 50% at end-2019 to the mid-40% level at end-2020 (based on commercial banks' business reports).

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