Monthly Economic Report

March 23, 2022

Mizuho Research & Technologies, Ltd.

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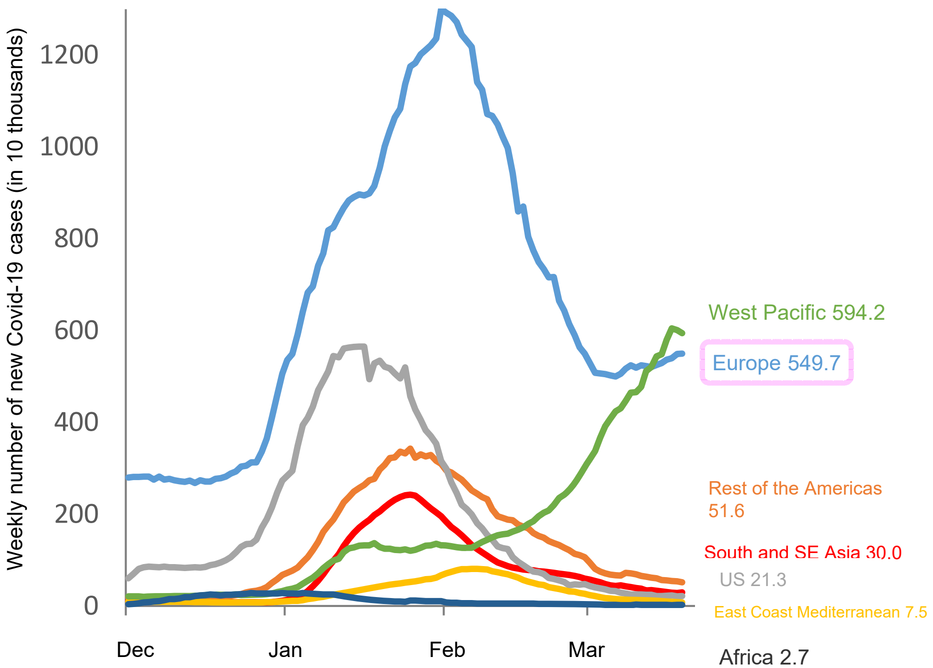
Global Covid-19 infection trends: in addition to a sharp increase in the Asia-Pacific region, Europe is also experiencing a resurgence of infections

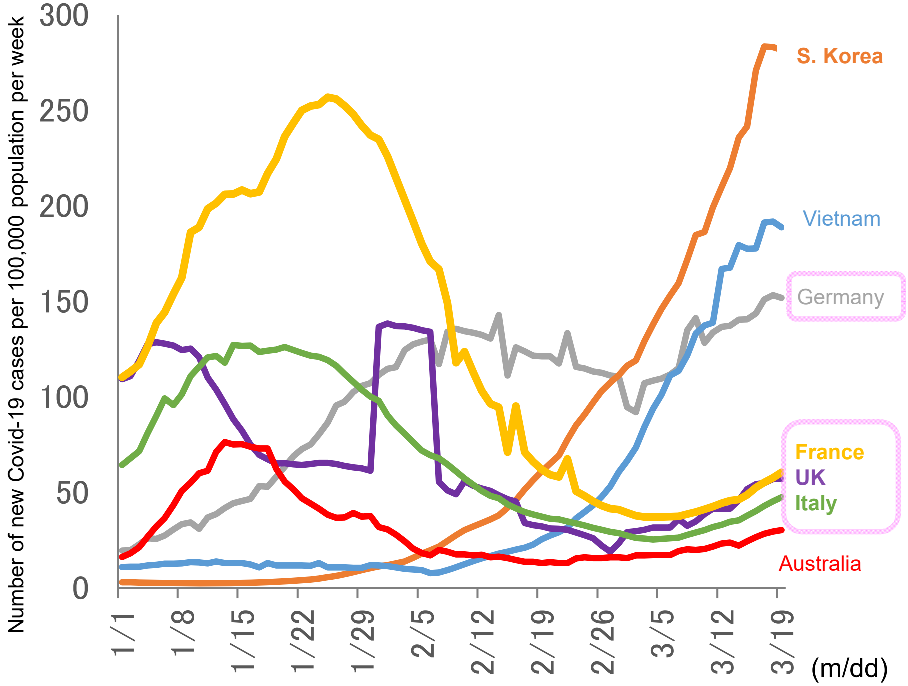
- The number of Covid-19 cases worldwide (cumulative) reached 471.58 million as of 6:00 a.m. on March 22.
- The weekly number of new Covid-19 cases around the world stood at 12.57 million as of March 19 (11.73 million as of March 12), indicating another resurgence trend.
  - The spread of infections is centered in the Asia-Pacific region, such as South Korea and Vietnam. The weekly number of new Covid-19 cases in South Korea is currently about 2.4 million, more than three times the number at the peak of the sixth wave in Japan.
  - Furthermore, there has been a resurgence of Covid-19 infections in major countries in Europe, such as Germany, the UK, France, and Italy.

Weekly number of new Covid-19 cases reported worldwide (by region)



Note: Figures represent number of cases tallied as of March 21 (latest data as of March 19). Regional classification based upon WHO.
Source: Made by MHRT based upon Johns Hopkins University and WHO.

Weekly number of new Covid-19 cases in countries and regions where infections are increasing

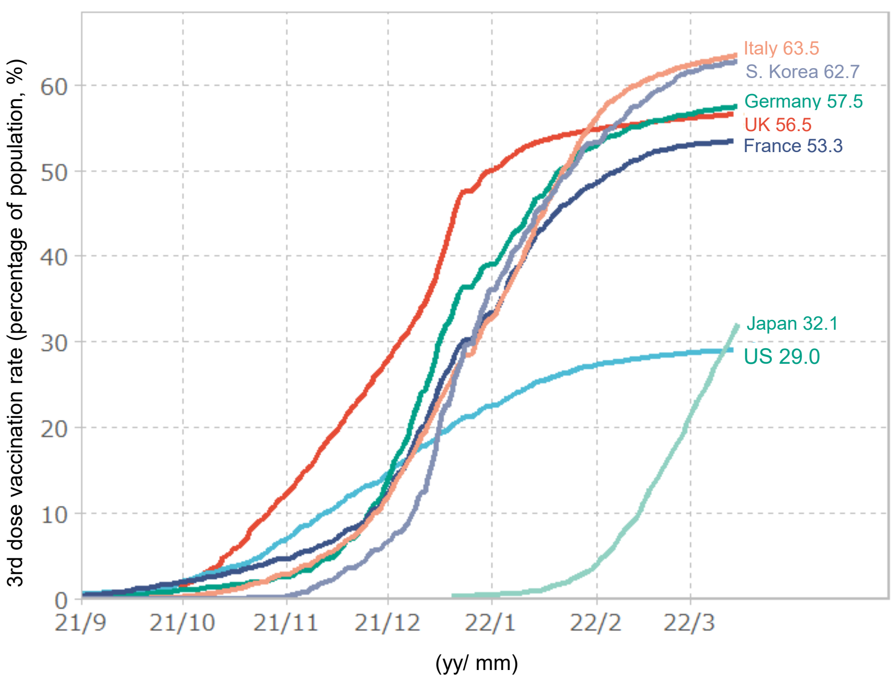


Note: Figures represent number of cases tallied as of March 21 (latest data as of March 19).
Source: Made by MHRT based upon Johns Hopkins University.

Vaccinations: the pace of booster vaccinations in major countries is gradually slowing down

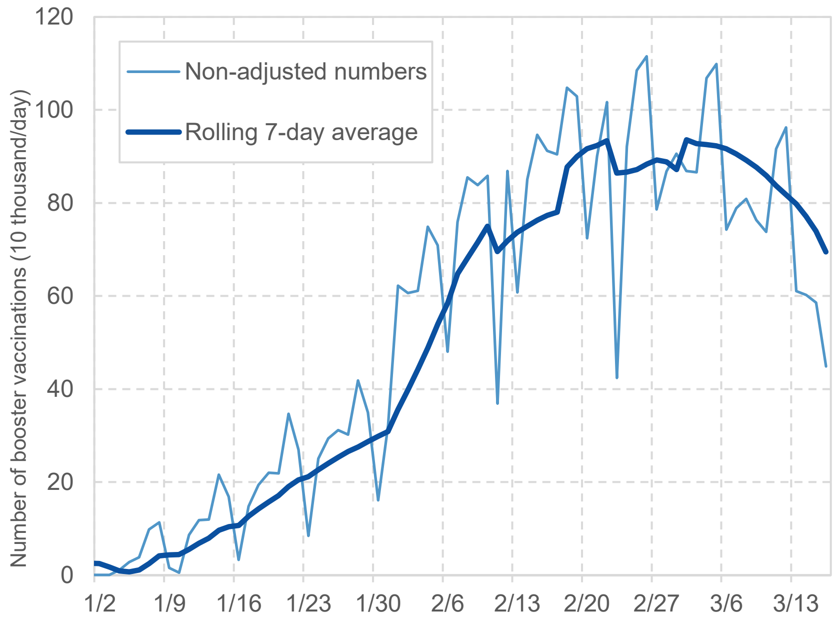
- The pace of increase in third dose vaccination coverage in major European countries and the US has slowed since February.
  - ■ The third dose vaccination coverage in Europe is 50% to 60%, about 10% to 20% pt lower than for second doses. In the US, the third dose vaccination rate is 29%, less than half of the second dose (65%), making the country potentially vulnerable to another resurgence of Covid-19 infections.
- In Japan, the number of third dose vaccinations reached 40.46 million as of March 16 (32% of the total population).
  - ■ Japan's nationwide vaccination pace accelerated to around 900 thousand doses per day in late February. Since the current slowdown in the pace of vaccinations is believed to be due to reporting delays, the actual pace is believed to be maintaining a steady 900 thousand doses per day.

Third dose vaccination rate in major countries



Note: Figures represent data tallied as of March 17 (latest data is from March 15).
Source: Made by MHRT based upon *Our World in Data,* and authorities of each country.

Pace of third dose vaccinations in Japan

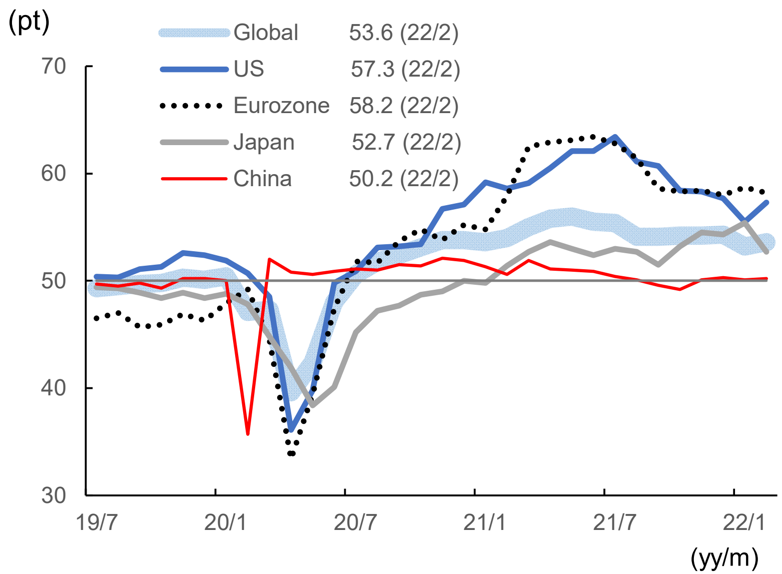


Note: Figures represent data tallied as of March 17 (latest data is from March 16). Third dose vaccination data excludes those for healthcare professionals.
Source: Made by MHRT based upon the Digital Agency.

Current state of the global economy: while the impact of Covid-19 is easing, the situation in Ukraine poses further downside risks

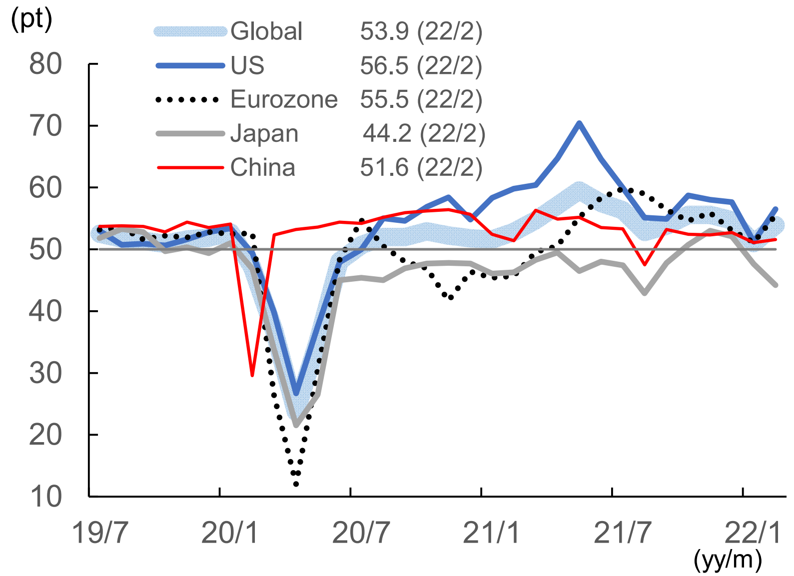
- Conditions in the manufacturing sector remained favorable in February. Even in the US, where supply constraints persist, the manufacturing PMI rose to 57.3, reflecting the steady new orders.
- In the nonmanufacturing sector as well, conditions improved in the US and Europe as Covid-19 infections are now subsiding.
  - In Japan, the nonmanufacturing PMI fell below 50 for the third consecutive month in February due to the spread of the Omicron variant, but the number of infected people is already following a downward trend.
- However, going forward, the impact of the situation in Ukraine requires further attention. The rise of commodity prices accompanying Russia's invasion of Ukraine pose a further downside risk to the global economy.
  - The resurgence of Covid-19 in China is also a concern. There are concerns that business conditions in the nonmanufacturing sector will deteriorate due to a downturn in consumption.

Manufacturing PMI



Note: The Purchasing Managers' Index (PMI) is an index calculated by weighting indexes such as new orders, output, order backlogs, prices, employment, and quantity of purchases. The reading of 50 in the PMI is the "expansion-contraction" threshold.
Source: Made by MHRT based upon IHS Markit, the National Bureau of Statistics of China.

Nonmanufacturing PMI

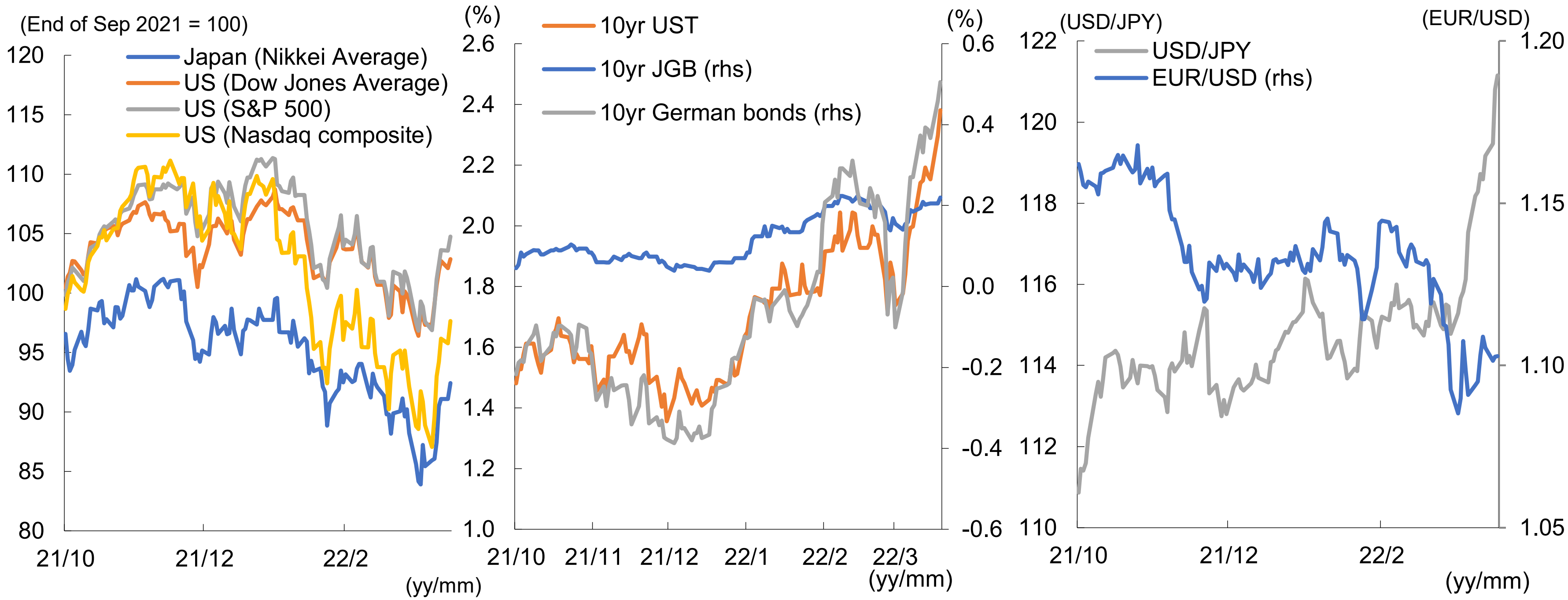


Note: The Purchasing Managers' Index (PMI) is an index calculated by weighting indexes such as new orders, output, order backlogs, prices, employment, and quantity of purchases. The reading of 50 in the PMI is the "expansion-contraction" threshold.
Source: Made by MHRT based upon IHS Markit, the National Bureau of Statistics of China.

Overview of financial markets: US long-term interest rates rose sharply, and the USD/JPY rate reached the 1 USD = JPY 120 level

- The 10yr UST yield rose to the upper half of the 2.3% level, reflecting the rise of speculation on the acceleration of interest rate hikes due to inflation concerns, a hawkish outlook in the FOMC (March 15 and 16), and indications of the possibility of a rate hike above 25 basis points by FRB Chair Jerome Powell and others.
- In the US, stocks fell sharply due to the rise of tensions over the situation in Ukraine, but rebounded as oil prices regained stability at one point and as fears of a default on Russian government bonds temporarily receded. Japanese stocks also moved in tandem with US stocks.
- Turning to the USD /JPY rate, the yen weakened against the dollar to the 1 USD = JPY 120 level for the first time since February 2016 on the daily closing rate basis, as the US-Japan interest rate differential widened in response to a sharp rise in US interest rates.

Major market trends

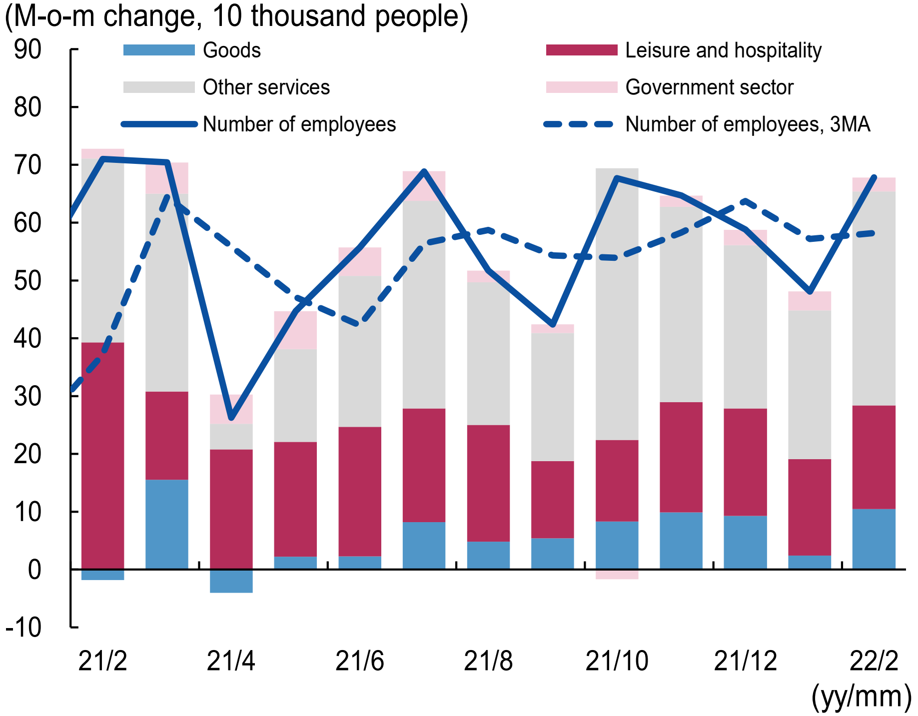


Note: All indexes show actual results up to March 22.
Source: Made by MHRT based upon Refinitiv.

US Economy: employment rose sharply, but labor market crunch remains. Manpower shortages remain serious

- The number of employees in February continued to rise sharply at +678 thousand m-o-m (January: +481 thousand m-o-m). The unemployment rate fell below 4% (January: 4.0% ⇒ February: 3.8%).
  - Although the labor force participation rate rose slightly (January: 62.2% ⇒ February: 62.3%), labor supply could not keep pace with the improvement in the employment rate (January: 59.7% ⇒ February: 59.9%), which was driven by strong labor demand.
- Hourly wages rose at a high rate on the +5% level y-o-y (January: +5.5% ⇒ February: +5.1%). According to the March Beige Book, as companies continue to face severe manpower shortages, it appears that upward pressure on wages remain strong.
  - Even though Covid-19 related impacts such as absenteeism are alleviating, companies continue to struggle to find workers amid an extreme seller's market.

Number of employees by industry



Source: Made by MHRT based upon US Department of Labor.

March Beige Book: comments on manpower shortages (excerpts)

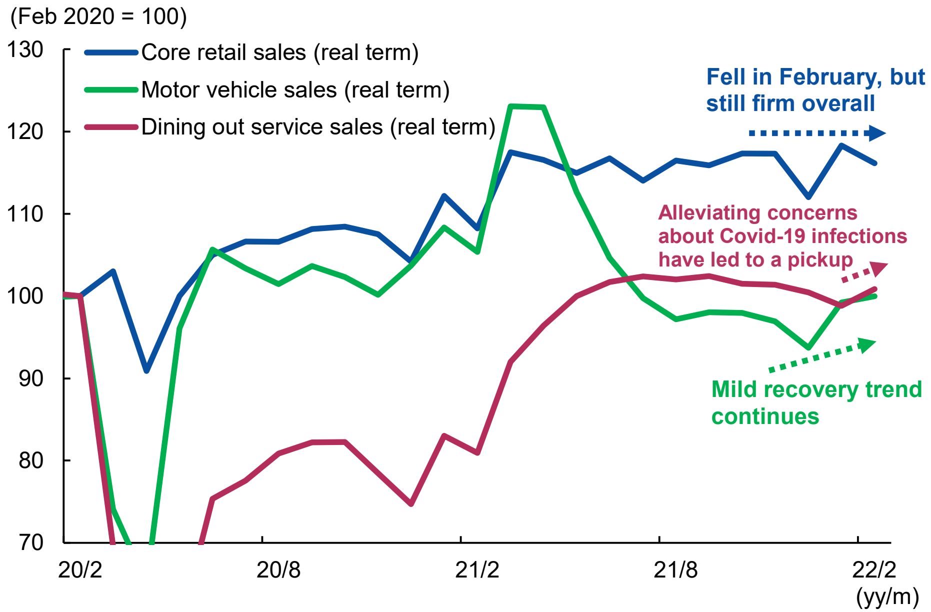
Outlines	Comments
Current situation	・Persistent **difficulty in finding workers at all skill levels.** (Chicago) ・**Many reporting elevated numbers for job openings and few applicants.** (San Francisco)
Impact on corporate activities	・**Limited availability of higher skilled workers meant relying more on lower skilled workers, reducing productivity.** (Chicago) ・**A South Dakota transportation company said, "The amount of work I have to turn away due to lack of staff is staggering."** (Minneapolis)
[Background] Impact of Covid-19 infections	・**The spread of the Omicron variant had temporarily disrupted operations as staff absences increased. However, such disruptions quickly abated as the new variant moved through more quickly than earlier variants.** (Cleveland, etc.)
[Background] Others	・**Scarcity of childcare continued to crimp labor supply.** (Boston) ・**Many firms commented that employee turnover was high for various reasons, including a greater desire to work remotely, receive higher wages, change careers, or find better working conditions.** (Cleveland)
[Response] Better compensation	・**All sectors reported that they were raising wages and planned to do so in the months ahead.** (New York) ・**Bonuses were used to attract and retain employees** (Atlanta)
[Response] Others	・**Loosened applicants' requirements on education and experience.** (Richmond) ・**Firms continue to invest in process automation, with one manufacturing company in Arkansas tripling their number of robotic welders.** (St. Louis)

Source: Made by MHRT based upon FRB.

Consumption driver is slowly changing from goods to services. Soaring prices are expected to serve as a drag going forward

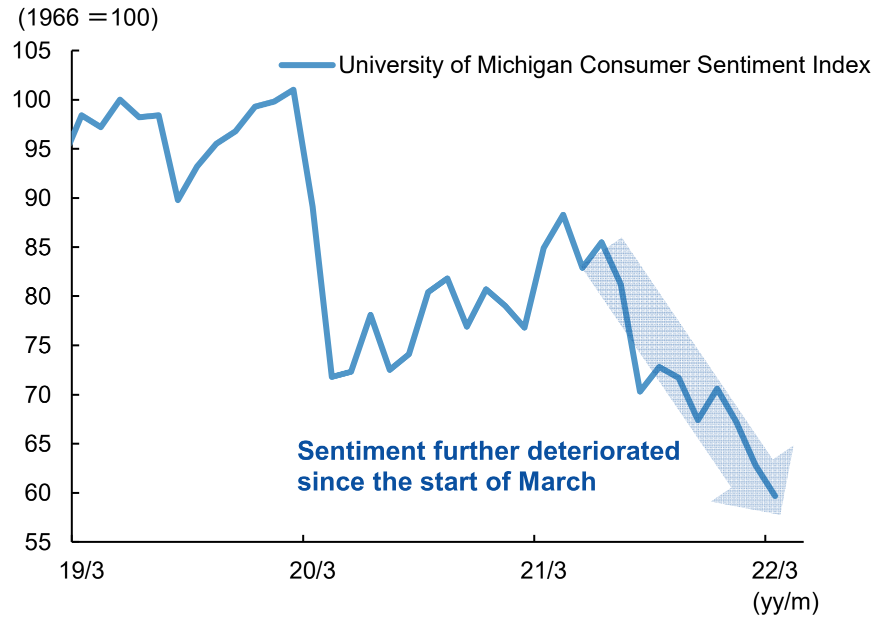
- Core retail sales (in real terms) fell in February (-1.8% m-o-m, estimates by MHRT). Decline in e-commerce, food, etc., while work-from-home demand paused due to decrease in Covid-19 infections.
  - The average of Jan-Feb core retail sales growth over the Oct-Dec quarter was +1.4% q-o-q. Goods consumption trend remains firm as of February.
- Sales in dining out services (in real terms) (+2.0% q-o-q) rose for the first time in three months. Services requiring face-to-face interactions picked up as the spread Covid-19 infections is subsiding.
- Alleviation of Covid-19 related impacts continues to shift demand from goods to services, but higher energy and food prices are serving as a drag on overall consumption.
  - Consumer sentiment deteriorated further in March. Soaring oil prices contributed to a deterioration in real purchasing power due to higher prices.

Real retail sales and dining-out service sales



Note: Estimates by MHRT. Core retail sales excludes motor vehicles, building materials, gasoline and dining out services.
Source: Made by MHRT based upon the US Department of Commerce and the US Department of Labor.

Consumer sentiment

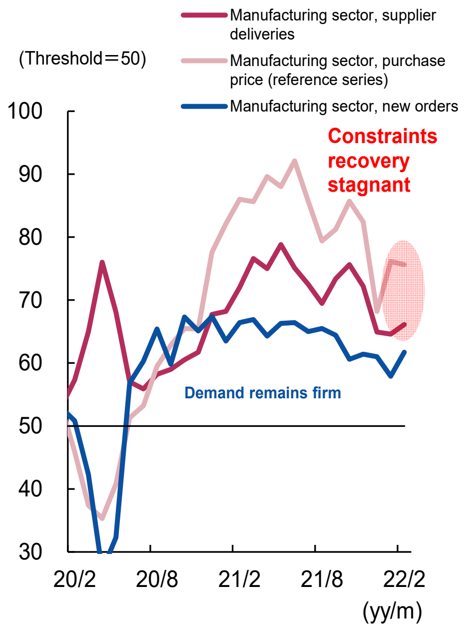


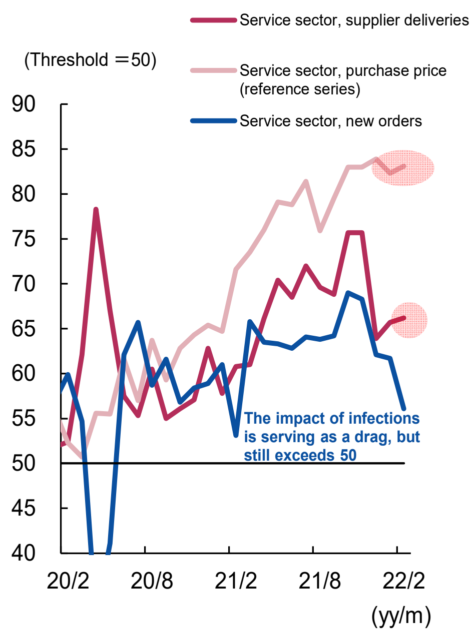
Source: Made by MHRT based upon University of Michigan.

Business sentiment is firm, but improvement of supply constraints is sluggish. Risks of future deterioration linger

- In February, the ISM manufacturing (58.6) and service sector (56.5) indices turned out strong above thresholds. Demand is firm, but the alleviation of supply constraints remains sluggish.
  - The new orders index for the manufacturing sector rose to a high level of over 60. The service sector fell due to lingering effects of Covid-19 infections, but avoided falling below the threshold of 50.
  - The improvement of supplier deliveries and purchase price indices is stalling. Many companies in the manufacturing sector commented that they were unable to meet strong demand. A majority of comments from the service sector also pointed to supply constraints, stemming mainly from manpower shortages.
- Covid-19 related impacts are expected to diminish in March. Even though demand is expected to grow, especially in the service sector, the potential for supply-side disruptions still lingers.
  - It will be necessary to keep a close eye on further cost increases due to soaring oil prices caused by the situation in Ukraine and the resulting downside risks to demand.

ISM manufacturing / service sector indices





Source: Made by MHRT based upon Institute for Supply Management.

Comments by companies by industry (excerpts)

	Industry	Comments
Manufacturing	Transportation Equipment	Demand for transportation equipment remains strong. Supply of transportation services continues to be a major issue for the supply chain.
	Food, Beverage & Tobacco Products	Strong demand has continued beyond our traditional seasonality curves. Continuing difficulties in procurement of ocean freight, operational planning and managing costs are our biggest challenges.
	Electrical Equipment, Appliances & Components	Demand continues to be strong, increasing our backlog. Production has been more consistent due to availability of parts, but we are not able to increase builds to cut into the backlog.
	Plastics & Rubber Products	Business is still strong. Facing logistics and raw material supply chain issues with some products.
Services	Accommodation & Food Services	Raw material cost rises, labor shortages, wage increases and transportation issues are still the primary issues affecting our operations and pricing.
	Construction	Suppliers cite poor employee attendance, elevated employee turnover and positions open longer than normal as they struggle to fill them.
	Finance & Insurance	Employee turnover within our company and with our suppliers is causing delays in decisions and orders.

Source: Made by MHRT based upon Institute for Supply Management.

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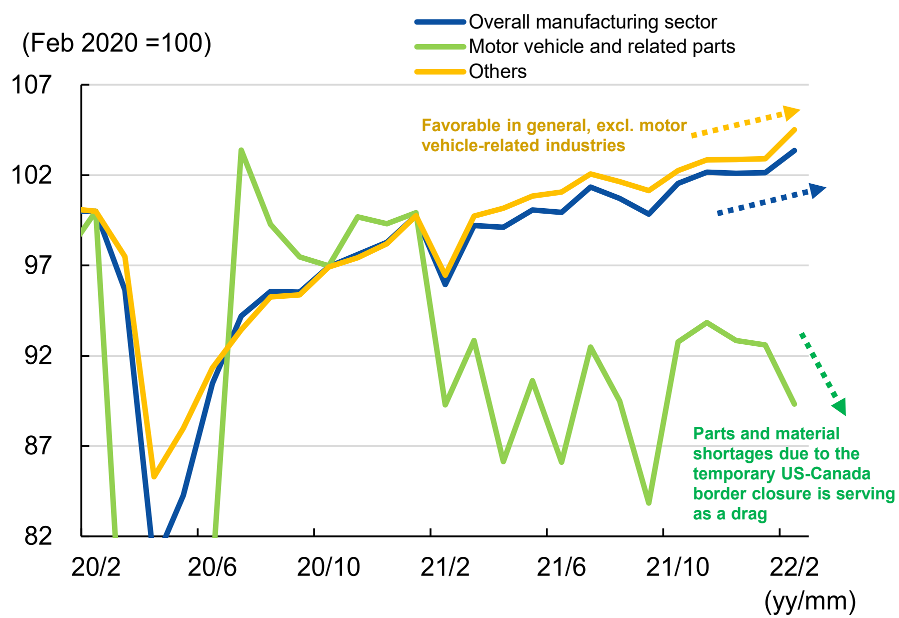
Output was firm in February. Companies are wary of worsening supply constraints going forward and persisting rise of costs

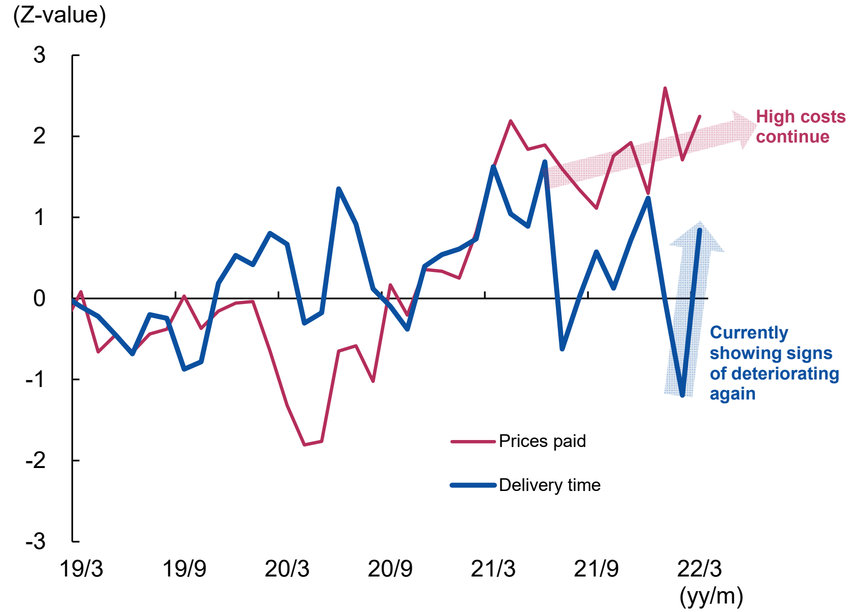
- Manufacturing output in February (+1.2% m-o-m) accelerated from the previous month (January: +0.2% m-o-m). The mitigation of Covid-19 related impacts is serving as a tailwind.
  - The motor vehicles & related parts industry (-3.5% m-o-m) fell sharply. The temporary US-Canada border closure (February 7 to February 13) due to vaccine demonstrations led to logistics disruptions of components and parts. Production at major automakers' plants was halted for several days, serving as a drag on motor vehicle output.
  - Other industries (+1.6% m-o-m) performed well. Utilization rates improved in a wide range of industries as Covid-19 related impacts such as absenteeism receded.
- Given the rise of tensions over the situation in Ukraine, companies are wary of worsening supply constraints and the accompanying rise of costs. Empire State
  - According to the March 2022 Manufacturing Survey by the Federal Bank of New York, firms are concerned about the outlook (six months ahead) for lengthening delivery times and persistently high prices paid.

Manufacturing output by industry



Source: Made by MHRT based upon FRB.

March FRB Survey (manufacturing sector): DI for future supply constraints

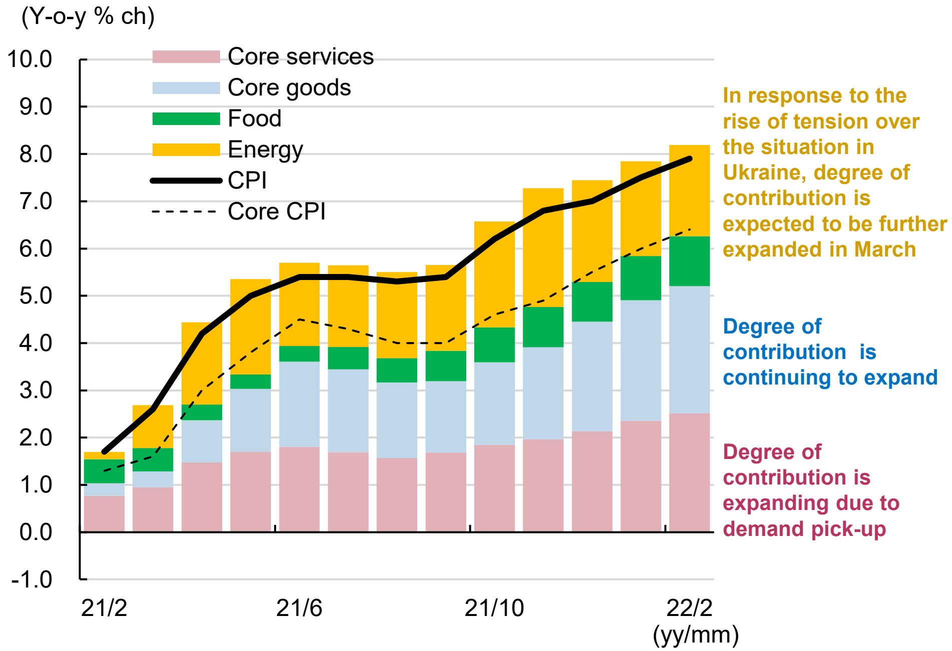


Note: Future refers to expectations six-months ahead
Source: Made by MHRT based upon Federal Reserve Bank of New York and Federal Reserve Bank of Philadelphia.

Acceleration of inflation remains unabated. Concerns regarding the rise of household burdens due to the surge of energy prices

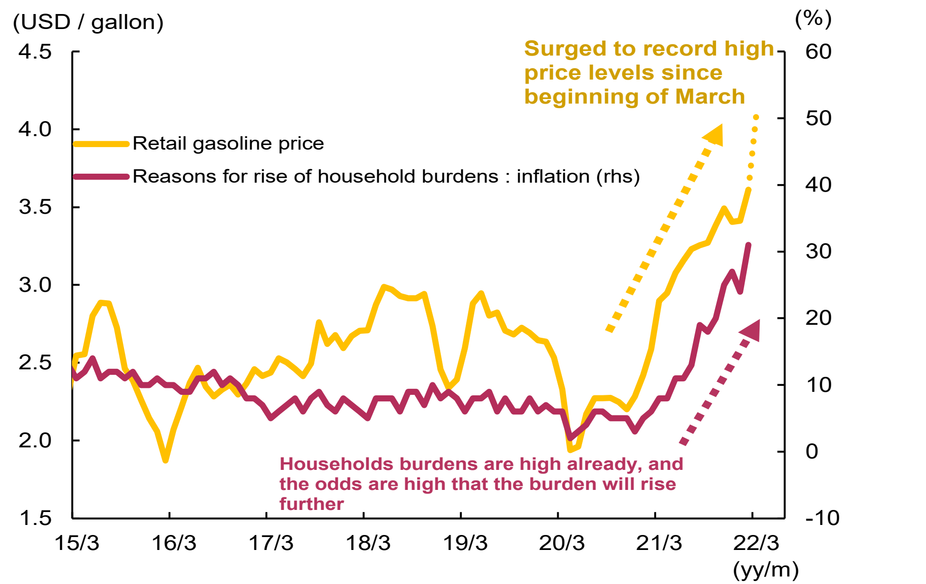
- In February, CPI rose +7.9% y-o-y (January: +7.5% y-o-y), and core CPI rose +6.4% y-o-y (January: +6.0% y-o-y), both showing further acceleration.
  - Service sector CPI rose due to increased demand resulting from declining Covid-19 infections. On the other hand, supply constraints remain, leading to continued goods CPI rise.
  - Median CPI, which indicates underlying inflation, also accelerated to +4.6% y-o-y (January: +4.2% y-o-y). Inflationary pressures remain broad-based.
- Energy prices have risen sharply due the rise of tension over the situation in Ukraine. There are concerns that this will raise prices up further and serve as a drag on demand from March onward.
  - Gasoline prices hit a record high (March 10), which is expected to further escalate households' already pressurized financial concerns due to high costs.

CPI (y-o-y % ch)



Source: Made by MHRT based upon US Department of Labor.

Rise of retail gasoline prices and costs leading to household burdens



Note: Retail gasoline prices are monthly averages. March data is the most recent value of March 7 (weekly data). "Reasons for the rise of household burdens" is data tallied up to February.
Source: Made by MHRT based upon EIA, and University of Michigan.

FOMC starts implementing rate hikes to curb inflation, expected to begin balance sheet reduction (QT) by May

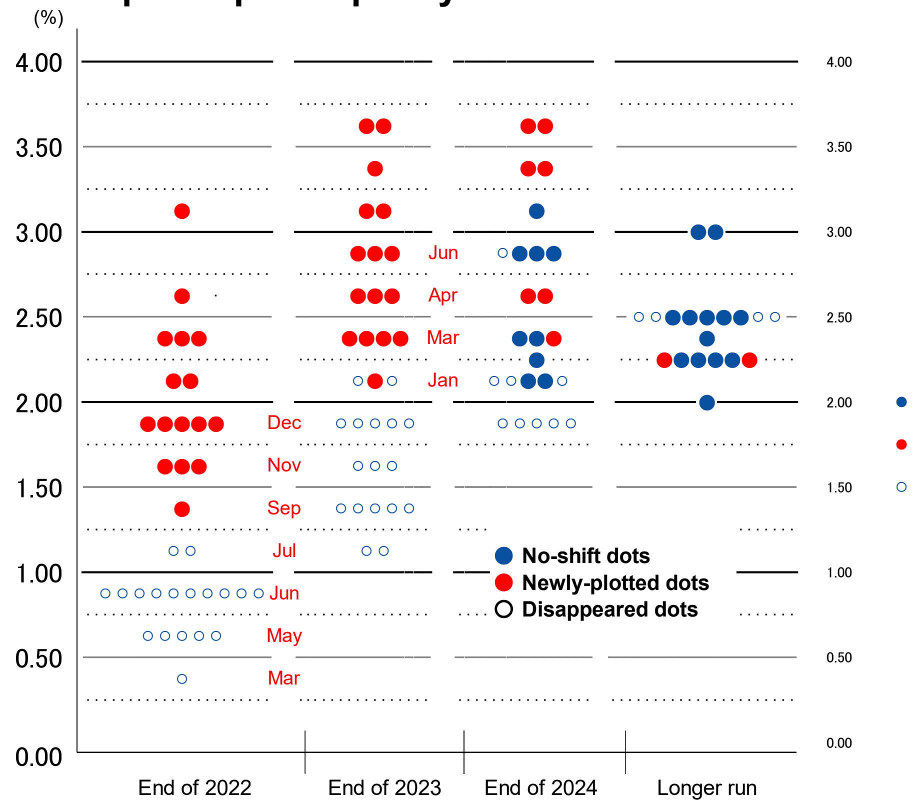
- The March FOMC decided upon a 25 basis points rate hike as per FRB Chair Jerome Powell's report to congress (March 2). "Ongoing increases in the target range" was also cited.
  - The dot plot chart has changed drastically. Consecutive rate hikes through the Apr-Jun quarter of 2023 and tightening beyond the neutral interest rate is expected to continue until 2024.
  - A significant number of participants believe that at least one more 50 basis point rate hike is necessary before the end of the year.
  - Balance sheet reduction is expected to be announced "at a coming meeting." Details are expected to be officially announced in advance in the FOMC minutes (April 6) and the odds are high that "that could come as soon as our next meeting in May" (FRB Chair Jerome Powell).

Key points of the March FOMC

Monetary policy going forward
● The economy is very strong, and against the backdrop of an extremely tight labor market and high inflation, **ongoing increases in the federal funds rate will be appropriate.** ● **Expect to begin reducing the size of FRB's balance sheet at a coming meeting. (Chair Jerome Powell indicated that could come as soon as the next meeting in May).**
Implications of Russia's invasion of Ukraine
● In addition to the direct effects from higher global oil and commodity prices, the invasion and related events may restrain economic activity abroad and further disrupt supply chains. ● The volatility in financial markets could also act to tighten credit conditions.
Economic outlook
● 2.8% (growth rate forecast for 2022) is still very strong growth. ● Inflation will take longer to return to the price stability goal. (median inflation projection from 2022-2024: 4.3% ⇒ 2.7% ⇒ 2.3%)

Source: Made by MHRT based upon FRB.

FOMC participants' policy rate outlook

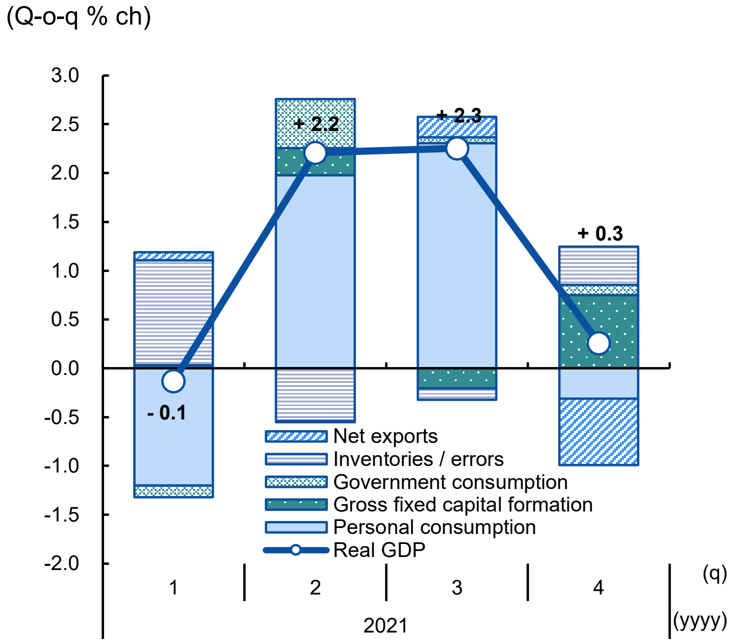


Source: Made by MHRT based upon FRB.

The Eurozone economy: GDP growth slowed in Oct-Dec quarter. The rise of tensions over the situation in Ukraine serves as a downside factor

- Eurozone real GDP growth decelerated to +0.3% q-o-q in the Oct-Dec quarter, against the background of the decline in consumer spending due to more stringent infection control measures following the resurgence of Covid-19 infections since November.
  - On the other hand, a recovery in goods exports, reflecting the alleviation of supply constraints such as semiconductor shortages, supported the Eurozone economy.
- Despite the recent progress in easing or lifting infection control measures in various countries, it is necessary to keep a close eye on the economic downturn due to soaring commodity prices and sanctions against Russia, caused by the rise of tensions over the situation in Ukraine, and other factors.

Eurozone: real GDP growth rate



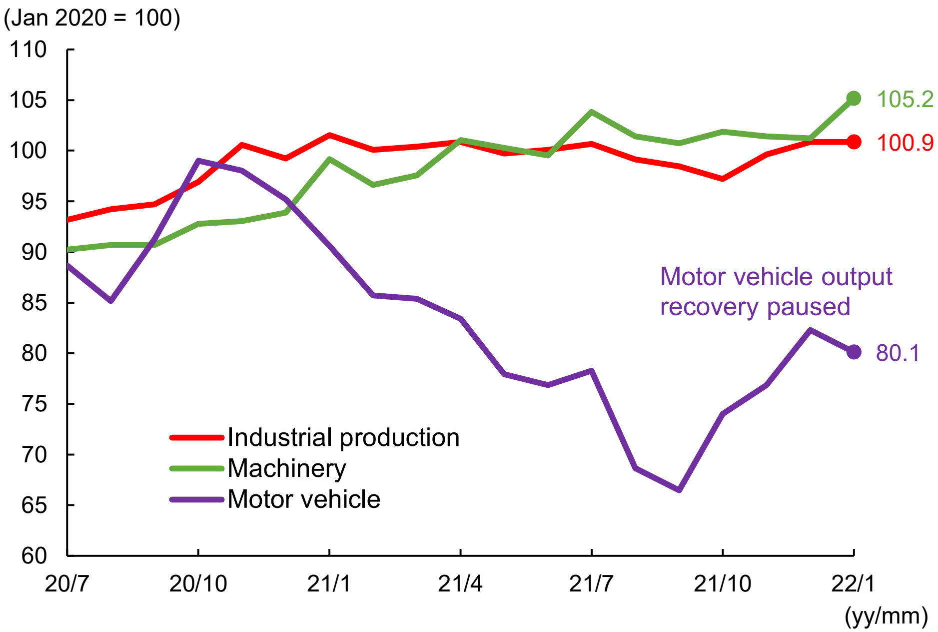
	21Q2	21Q3	21Q4	Key points
Real GDP	+2.2	+2.3	+0.3	Growth in the Oct-Dec quarter slowed from the previous quarter.
Personal consumption	+3.9	+4.5	- 0.6	First drop in 3 quarters due to the more stringent infection control measures and mobility restrictions to combat the resurgence of Covid-19 infections.
Gross fixed capital formation	+1.3	- 0.9	+3.5	Surge in intellectual property investment (+12.5% q-o-q) boosted growth. In addition, signs of a pickup in investment in machinery and construction (+1.2% q-o-q) due to alleviating supply constraints.
Government consumption	+2.3	+0.3	+0.5	Slightly accelerated and remained at a high level.
Inventory investment (※)	- 0.5	- 0.1	+0.4	Inventories built up for the first time in 3 quarters as supply constraints eased and consumer spending declined.
Net exports (※)	- 0.0	+0.2	- 0.7	Contribution of foreign demand turned negative, as imports grew more than exports.
Exports	+2.8	+1.7	+2.9	Goods exports (+2.1% q-o-q) rebounded and boosted growth, reflecting the alleviation of supply constraints such as semiconductor shortages.
Imports	+3.1	+1.4	+4.6	Goods imports (+2.9% q-o-q) were positive for the first time in 2 quarters, indicating a recovery in the manufacturing sector.

Note: Real GDP q-o-q growth and the degree of contribution by the components of demand.
The asterisk (※) symbol represents the q-o-q growth contributions.
Source: Made by MHRT based upon Eurostat.

Eurozone industrial production remained flat in January. A mild recovery is expected going forward

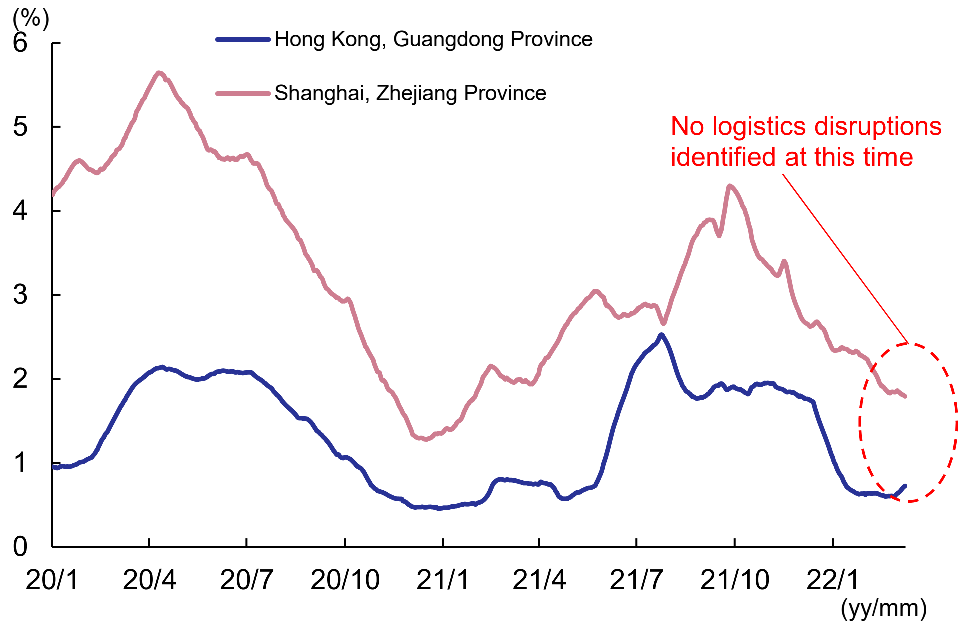
- Eurozone industrial production remained unchanged in January (±0% m-o-m). Prolonged supply constraints and the resurgence of Covid-19 infections served as a drag.
  - Machinery (+3.9% m-o-m) rose, while the motor vehicle (-2.7% m-o-m) recovery paused amid continuing shortages of parts and materials including semiconductors.
  - In addition, employee absenteeism due to the spread of Omicron variant infections appears to have contributed to declines in utilization rates in some industries.
- Looking ahead, production is expected to recover moderately as supply constraints gradually ease.
  - However, although no impact has been confirmed at this time, caution is required regarding downside risks to production and exports due to the rise of tensions over the situation in Ukraine and the spread of Covid-19 infections in China.

Eurozone: industrial production



Source: Made by MHRT based upon Eurostat.

Container retention status at major ports in China

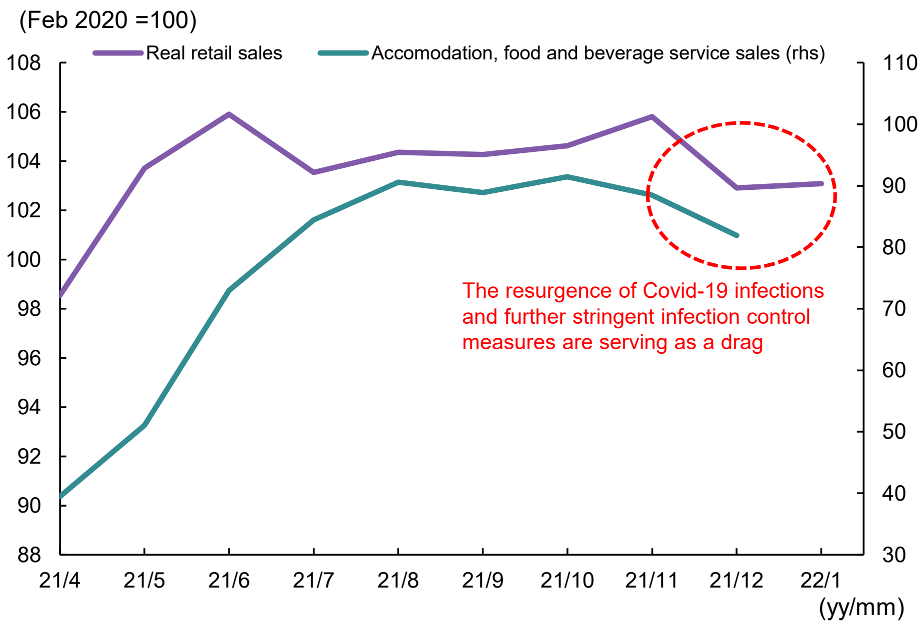


Note: Percentage of cargo capacity of container ships that cannot be loaded or unloaded due to congestion in the sea area within 500 km from the port. The latest data is as of March 9.
Source: Made by MHRT based upon Kiel Institute for the World Economy.

January retail sales flattened out due to the resurgence of Covid-19 infections. Looking forward, the rise of prices is expected to serve as a drag on consumption

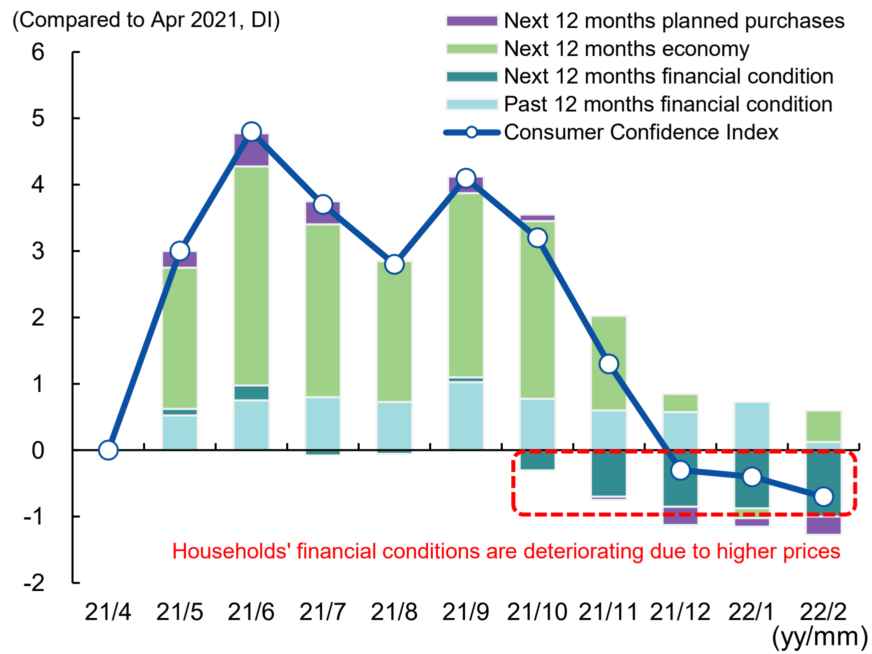
- Eurozone retail sales in real terms in January (+0.2% m-o-m) remained flattened out in a narrow range. The spread of Omicron variant infections and reinforcement of infection control measures served as a drag.
- Although infection control measures are being eased or lifted following the peak-out of infections, prices are continuing to rise, particularly energy prices. A decline in real purchasing power and deterioration of consumer sentiment are expected to serve as a drag on consumption.
  - The Consumer Confidence Index worsened for the fifth consecutive month in February. While the spread of Covid-19 infections is subsiding, the rise of prices is increasing household burdens, serving as downward pressure on consumer sentiment.

Eurozone: real retail sales, and accommodation, food and beverage service sales



Note: Retail sales are in real terms. Accommodation, and food and beverage service sales are in nominal terms.
Source: Made by MHRT based upon Eurostat.

Eurozone: Consumer Confidence Index

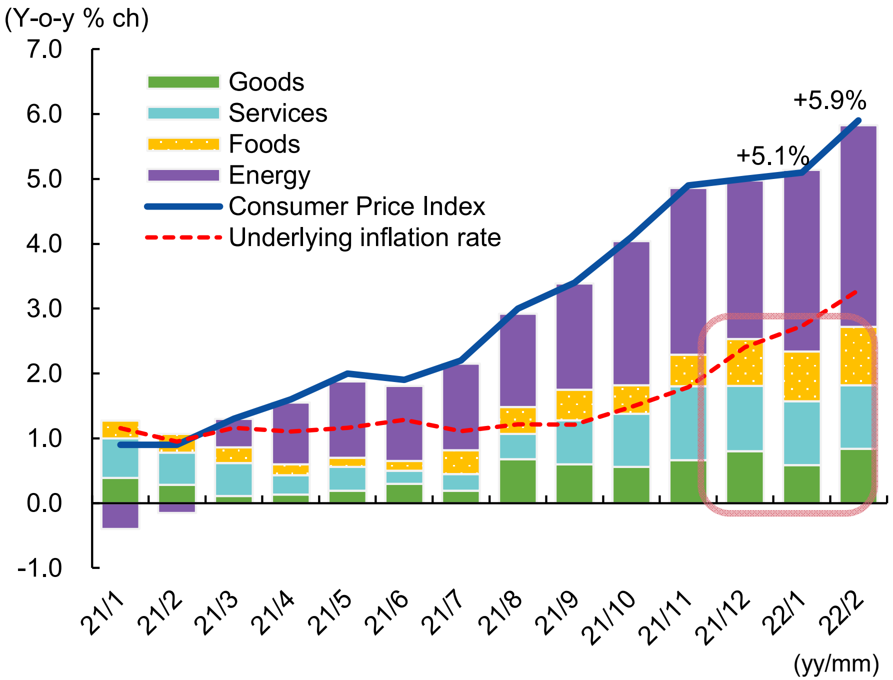


Source: Made by MHRT based upon European Commission

The rise of prices accelerated in February. A further rise expected, mainly in energy

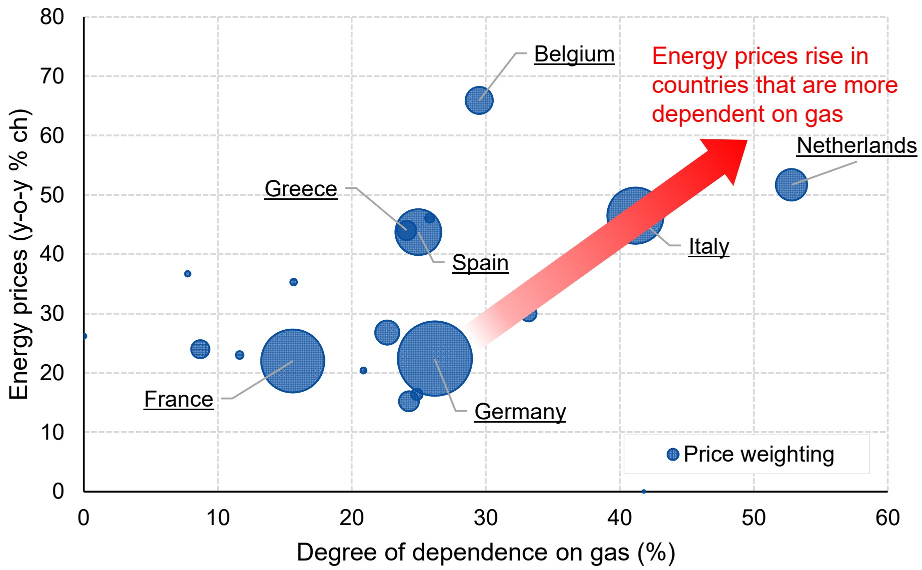
- In February, Eurozone consumer prices (final) accelerated at a faster pace of +5.9% y-o-y from the previous month (+5.1% y-o-y).
  - Energy prices served to push up the CPI. This confirms that the rise of raw material prices are spreading to a wide range of items other than energy.
- Natural gas prices are soaring due to the rise of tensions over the situation in Ukraine, which is likely to further raise consumer prices going forward.
  - Energy prices are rising at a faster pace in countries such as the Netherlands and Italy which have a high gas dependency. The more gas-dependent a country is, the lower its real purchasing power due to inflation, which is expected to serve as a drag on consumption.

Eurozone: consumer price index (CPI)



Note: The underlying inflation rate is the cumulative share of inflation for each item, sorted in descending order of inflation rate for items that reach 50%, as estimated by MHRT.
Source: Made by MHRT based upon Eurostat.

Eurozone: energy prices and degree of dependence on gas



Note: Energy prices are as of February 2022, while gas dependence is the share of natural gas and LNG in primary energy consumption (as of 2020).
Source: Made by MHRT based upon Eurostat.

The ECB remains cautious on inflation. Brought APP reduction schedule forward, but ensures policy flexibility

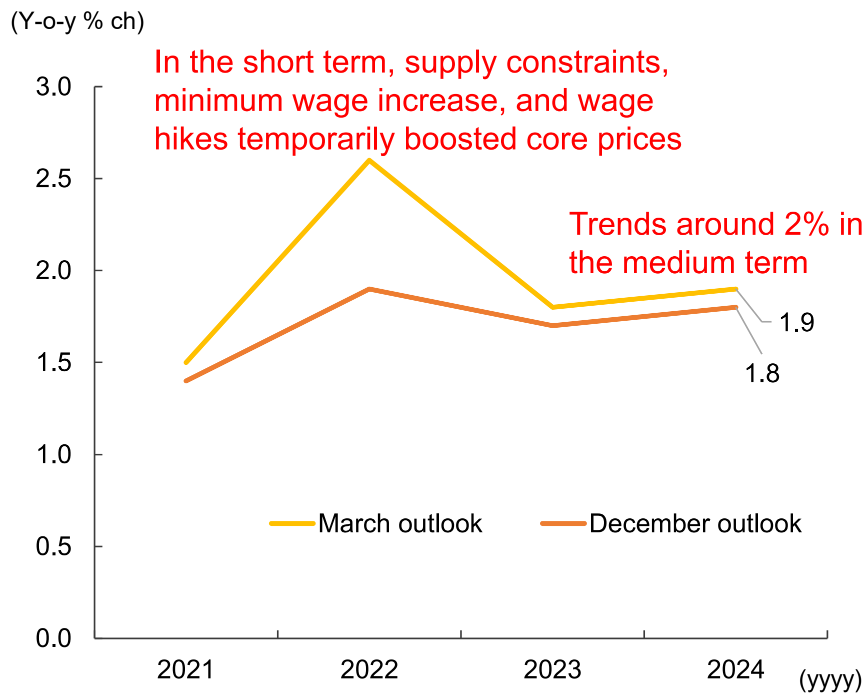
- The ECB has revised its growth outlook downward and inflation outlook upward in response to the situation surrounding Ukraine and rising energy prices.
- The ECB maintains its cautious stance towards inflation amidst the turmoil in Ukraine. The schedule for reducing the amount of asset purchases under the Asset Purchase Program (APP) was brought forward. ECB President Christine Lagarde stated that if the medium-term inflation outlook will not weaken, the Governing Council will conclude net purchases under the APP in the third quarter.
- Timing of rate hikes is set with a grace period to allow for a wait-and-see approach. The wording was revised from “shortly after," to “some time after" the net purchases under the APP, to ensure flexibility.

Key points of the ECB Governing Council meeting (March 10)

Economic situation	**・The projections foresee the economy growing at +3.7% in 2022, +2.8% in 2023 and +1.6% in 2024. (Previous projections were +4.2% in 2022, +2.9% in 2023 and +1.6% in 2024) ・GDP growth has been revised downwards for the near term, owing to the war in Ukraine.**
Inflation outlook	**・Annual inflation is projected at +5.1% in 2022, +2.1 % in 2023 and +1.9% in 2024. (Previous inflation projections were at +3.2% in 2022, +1.8% in 2023, and +1.8% in 2024) ・These factor in substantial upside risk, especially to energy prices. The Governing Council sees it as increasingly likely that inflation will stabilise at its 2% target over the medium term.**
Asset Purchase Programme (APP)	**・Taking into account the uncertain environment, revised the purchase schedule. ・Monthly net purchases under the APP will amount to €40 billion in April, €30 billion in May and €20 billion in June. ・If […] the medium-term inflation outlook will not weaken even […], the Governing Council will conclude net purchases under the APP in the third quarter.**
Policy rate	**Any adjustments to the key ECB interest rates will take place some time after the end of the net purchases under the APP and will be gradual. The path for the key ECB interest rates will continue to be determined by the Governing Council’s (existing) forward guidance and by its strategic commitment to stabilise inflation at 2% over the medium term.**

Source: Made by MHRT based upon ECB.

ECB: Core price outlook

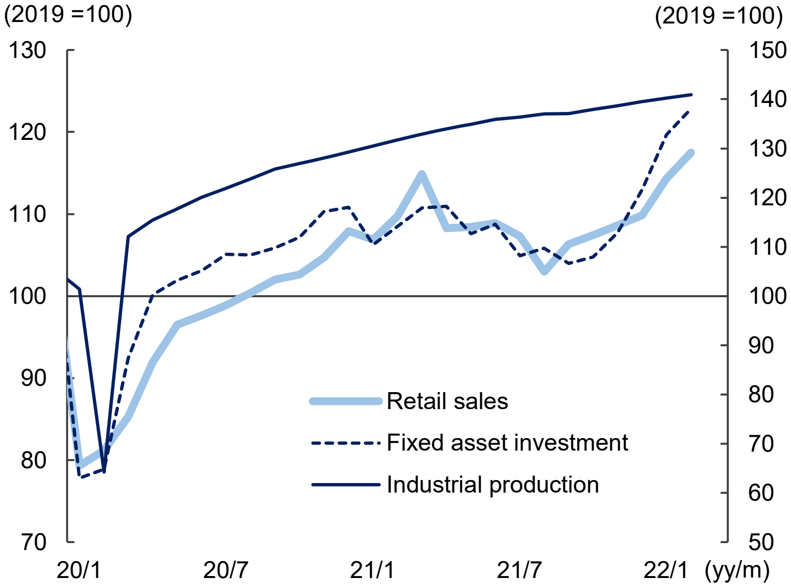


Source: Made by MHRT based upon ECB.

Chinese economy: despite strong economic indicators up to February, concerns are growing about the future

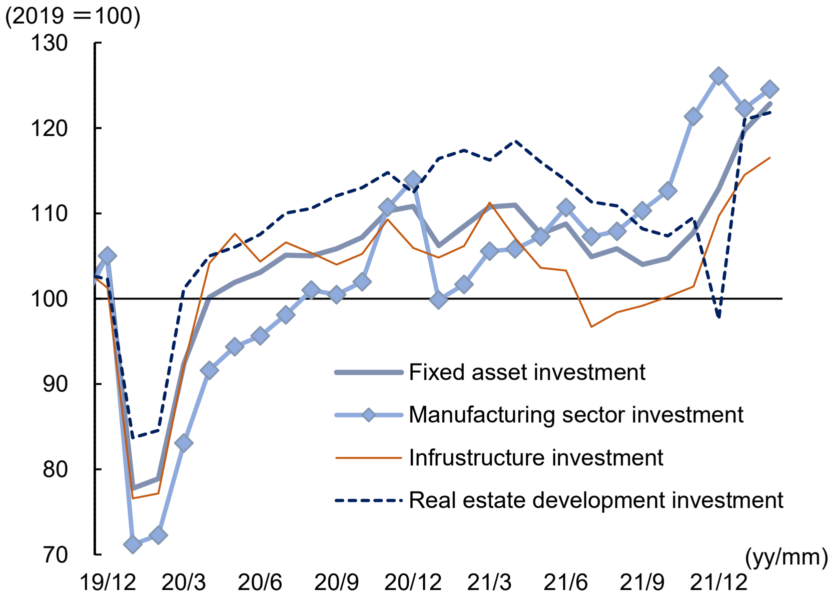
- Monthly indicators (retail, investment, and production) for January and February all improved above expectations.
  - Consumption was boosted by a pickup in motor vehicle sales on the back of alleviating semiconductor shortages, as well as by sports-related demand inspired by the Olympic Games.
  - Infrastructure and real estate investment, which had been sluggish in the second half of last year, picked up. The carry-over of infrastructure investment from the previous year contributed to infrastructure investment growth.
- The current surge of Omicron variant infections is expected to serve as a drag on the economy, particularly in consumption activities going forward.
  - Temporary production suspensions are observed in major cities. Even when considering the subsequent catch-up production, the adverse effects cannot be ignored.
  - On the other hand, the pace of issuance of special-purpose bonds for local governments, which fund infrastructure investment, has been steady, suggesting a solid outlook for investment in related areas.

Key monthly indicators



Note : Seasonally adjusted by MHRT
Source: Made by MHRT based upon the National Bureau of Statistics of China, and CEIC data.

Fixed asset investment



Note : Seasonally adjusted by MHRT
Source: Made by MHRT based upon the National Bureau of Statistics of China, and CEIC data.

Monetary policy was shifted toward an accommodative stance. Chinese stocks are volatile, reflecting a mix of positive and negative market incentives

- At the National People's Congress of the People’s Republic of China held from March 5 to March 11, the Chinese government decided on the policy orientation for economic and social development in 2022, which states “economic stability must be a top priority."
  - Fiscal policy will remain "proactive," implementing RMB 2.5 trillion (approximately 45 trillion yen) scale tax cuts and tax refunds to support the economy.
  - While maintaining a “prudent” tone, monetary policy was shifted toward an accommodative stance. Additional interest rate cuts and a reduction in the deposit reserve ratio are expected.
- Chinese stocks fell sharply after the commencement of Russia's invasion of Ukraine, and have been volatile since March 14, reflecting a mix of positive and negative market incentives.
  - On March 14, the stock market plunged in response to reports of stricter regulations by the US and Chinese authorities and Chinese military assistance to Russia, and the spread of Covid-19 infections in China, but rebounded sharply on March 16 in response to reports that the State Council's Financial Stability and Development Committee had mentioned the stabilization of the capital markets.

China's macroeconomic-policy roadmaps and approaches for 2022

Policies	Policy details
Fiscal policy	● The proactive fiscal policy should be more effectual, more targeted, and more sustainable. ● Set the deficit-to-GDP ratio for the year at around 2.8%. Increase revenues other than tax revenue and secure sufficient expenditure (+8.4%). ● Special-purpose bonds for local governments (revenue bond), which will be a source of infrastructure investment, will total 3.65 trillion yuan (about 66 trillion yen) ● Tax refunds and cuts are expected to total 2.5 trillion yuan (about 45 trillion yen) this year.
Monetary policy	● Implemented a prudent monetary policy. Should keep liquidity reasonably ample. ● Increases in money supply (M2) and aggregate outstanding social financing are generally in step with nominal economic growth. ● (Will use monetary policy tools) to provide more robust support for the real economy. Will expand the scale of new loans. ● A fund for ensuring financial stability will be established. Will be used to defuse risks.

Source: Made by MHRT based upon *Report on the Work of the Government*

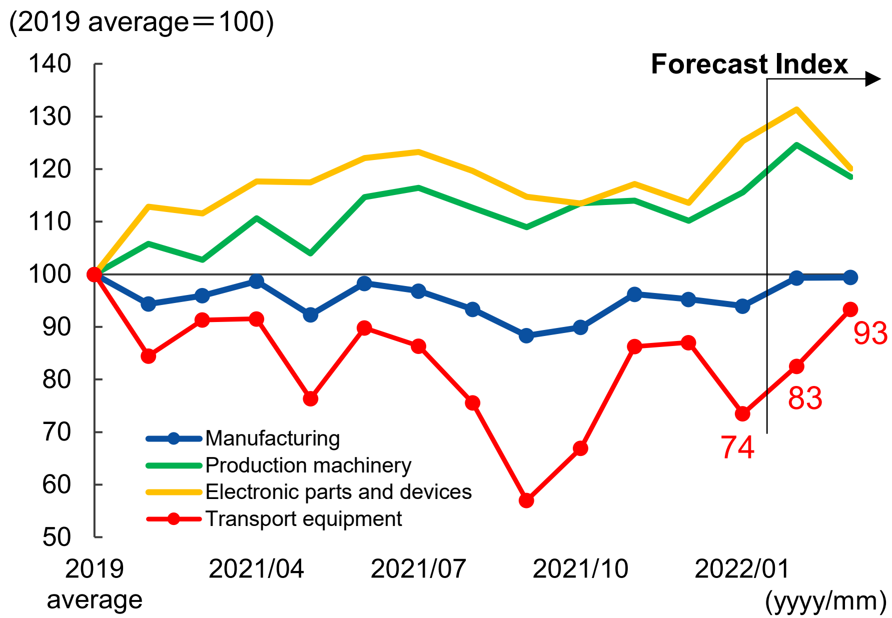
Shanghai Composite Index and Hong Kong Hang Seng Index

Source: Made by MHRT based upon Shanghai Stock Exchange, Hang Seng Indexes Company, and CEIC data.

The Japanese economy: while motor vehicle output is expected to recover, rising input costs and other factors are expected to serve as a drag on overall production

- Production in January fell reflecting the sharp resurgence of Covid-19 infections and a decrease in motor vehicle output due to semiconductor shortages.
  - The industrial production index for January declined (-1.3% m-o-m). While the index for motor vehicles declined sharply, the index for production machinery and other industries rose.
- Looking ahead, motor vehicle output is expected to pick up, but will be limited to a sluggish recovery as the rise of raw material costs and increase of uncertainties are likely to serve as a drag.
  - According to the production forecast index, the Jan-Mar quarter is estimated to show only a slight increase of +0.8% q-o-q (based on February's adjusted value and March's forecast index).

Industrial production / actual results and production forecast index



Source: Made by MHRT based upon Ministry of Economy, Trade and Industry, *Indices of Industrial Production*.

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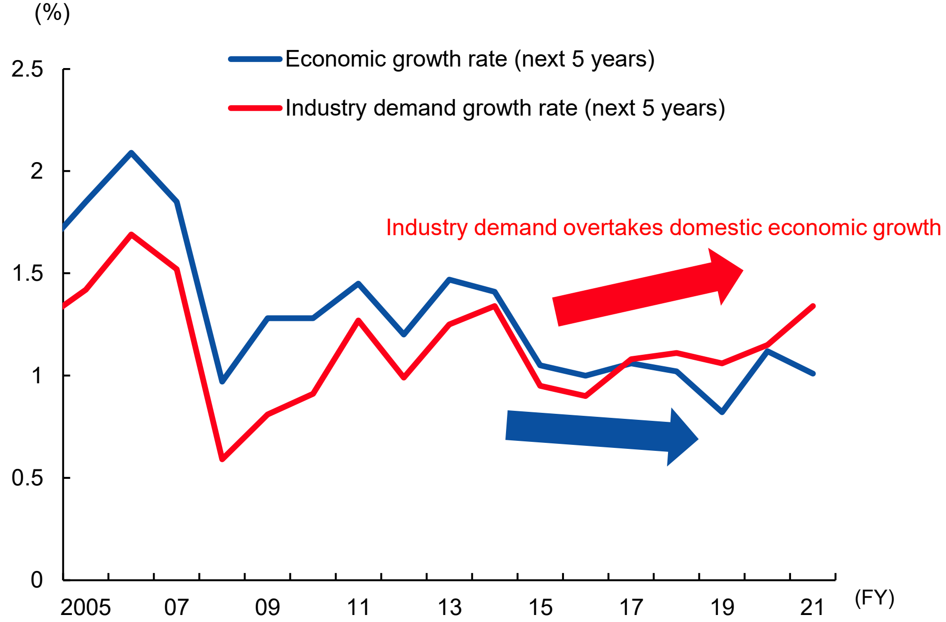
Disparities in companies' expected growth rates in Japan and overseas become clearer

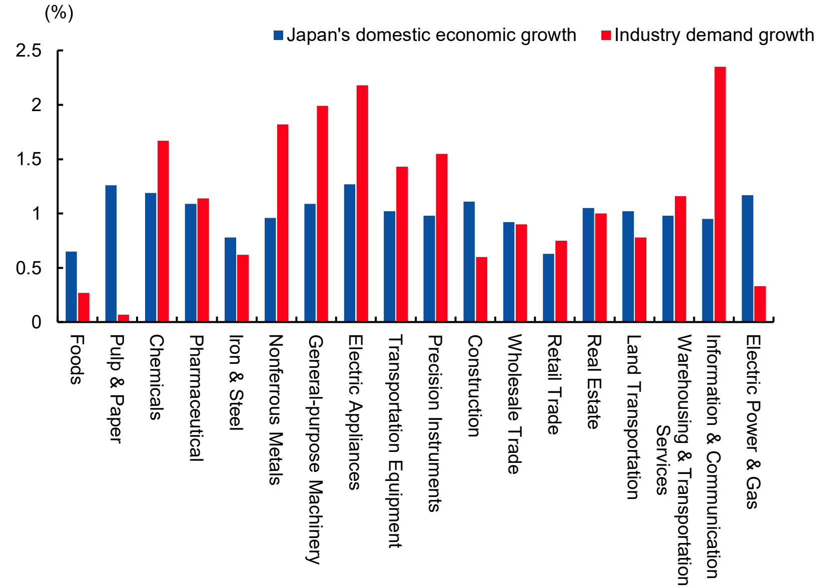
- While companies' forecasts of Japan's economic growth rates remain stagnant, forecasts on growth rates of demand in industries are rising.
  - According to the FY2021 *Annual Survey of Corporate Behavior*, the forecast of Japan's economic growth rate over the next five years by listed companies is stagnant at around 1%. On the other hand, the forecasts on growth rates of demand in industries rose moderately to the lower half of the 1% range, clearly indicating the relatively low expected growth rate in Japan.
  - This is serving as one of the reasons why Japan's domestic capital investment is sluggish compared to strong foreign direct investments and outbound M&As.
  - Forecasts on industry demand are high for electric appliances, nonferrous metals, and information & communication industries, which are expected to see increases in external demand, and digital and green-related demand. On the other hand, the outlook for industry demand for foods and electric power & gas, which are mainly for Japan's domestic demand, is weak, as with the forecasted domestic growth rate.

Corporate forecasts on growth for the next five years



Source: Made by MHRT based upon Cabinet Office, *Annual Survey of Corporate Behavior*

Forecasts on Japan's economic growth and industry demand growth (FY2021)

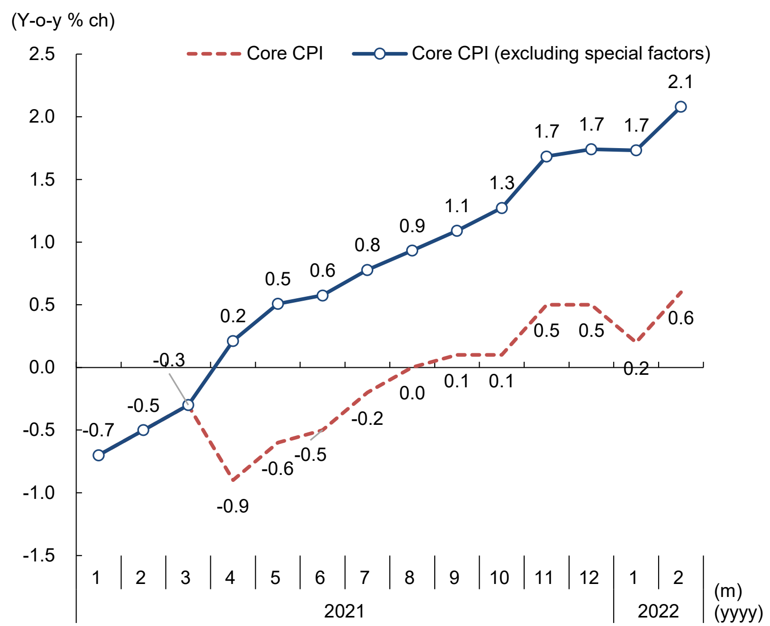


Note: Forecasts on the next five years
Source: Made by MHRT based upon Cabinet Office, *Annual Survey of Corporate Behavior*

The rise of energy and food price accelerated, pushing up the core CPI further into positive territory in February

- In February, the core consumer price index (CPI) for Japan rose +0.6% y-o-y (January: +0.2% y-o-y). Excluding the special factors of accommodation charges and communication charges, the core CPI rose +2.1% y-o-y in February.
  - The contribution of energy to the year-on-year rate of change in the core CPI continued to rise at a faster pace of +1.47% pt in February (January: +1.28% pt).
  - It is estimated that the impact of projects to mitigate drastic changes in fuel prices upon the core CPI was about -0.1% pt in February (in March, the downward adjustment is expected to widen to about -0.3% pt due to the upward revision of subsidy limits).
- Due to factors such as soaring raw material prices and distribution costs, prices of many items, mainly foods, are expected to rise in April, which will lead to the further rise of household burdens.

Trend of core CPI (y-o-y % change)



Note: The series excluding special factors excludes the effects of accommodation charges and communication charges (mobile phones).
Source: Made by MHRT based upon the Ministry of Internal Affairs and Communications, *Consumer Price Index*.

Items of scheduled price increases in April 2022

Item	Percentage (amount) of price increase	Main reasons
Fresh noodles	6% to 13%	Soaring raw material prices and rising labor and logistics costs
Pouch curry	10 yen	
Ketchup, sauces	3% to 9%	
Miso	5% to 13%	
Frozen foods	4% to 10%	
Tissue paper Toilet paper	10% or higher	
Curtains/wallpaper	18% to 24%	
Expressway (Metropolitan Expressway)	46% to 92% (depends on vehicle type)	To alleviate traffic congestion
Electricity bill (Kanto area)	26% (y-o-y)	Soaring fuel costs

Source: Made by MHRT based upon respective companies' press releases, etc.

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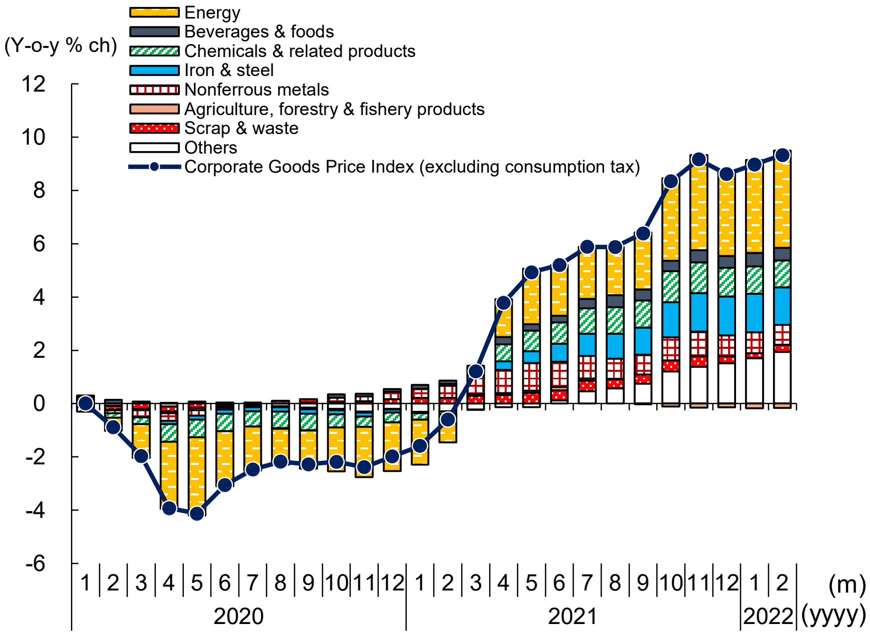
The CGPI is continuing to rise at a high pace. Government's wheat selling prices were second highest in history

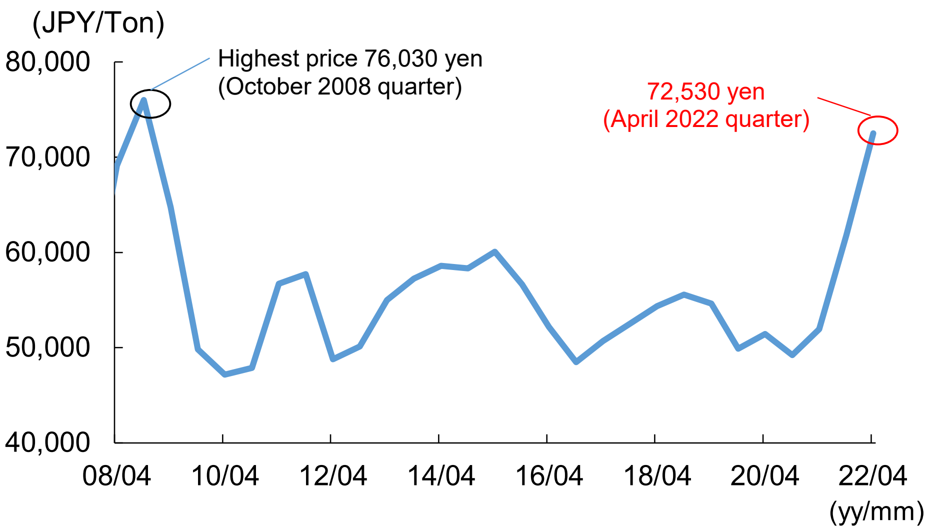
- The domestic corporate goods price index (CGPI) continued to rise at a high rate of +9.3% y-o-y in February 2022 (January: +8.9% y-o-y).
  - While the main driver was the rise in energy prices (January: +29.8% y-o-y ⇒ February: +30.5% y-o-y), the difference between the number of rising items and declining items widened for nine months in arrow (January: 312 items ⇒ February: 327 items), indicating that prices are rising among a wide range of items.
- Wheat import prices have soared recently due to poor harvests in major producing countries and concerns about supply due to the Ukraine crisis.
  - According to the Ministry of Agriculture, Forestry and Fisheries, the average price at which the Japanese government will sell imported wheat from April 2022 will be 72,530 yen/ton, the highest level since the October 2008 quarter. A wide range of wheat flour products, including bread and confectionery, are expected to push up food prices further.

Contribution decomposition of Japan's domestic corporate goods price index



Source: Made by MHRT based upon the Bank of Japan, *Corporate Goods Price Index*.

Trend of the Japanese government selling price of imported wheat

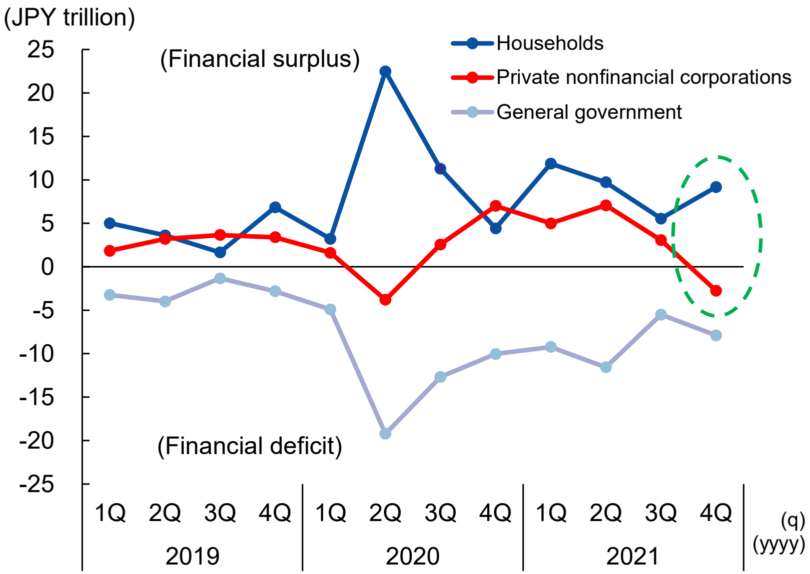


Source: Made by MHRT based upon Ministry of Agriculture, Forestry and Fisheries, *Yunyu komugi no seifu hanbai kakau ni tsuite* (government selling price of imported wheat)(attached reference to price announcement).

Outstanding balance of household financial assets exceeded JPY 2,000 trillion. Excess savings remain pinned at a high level

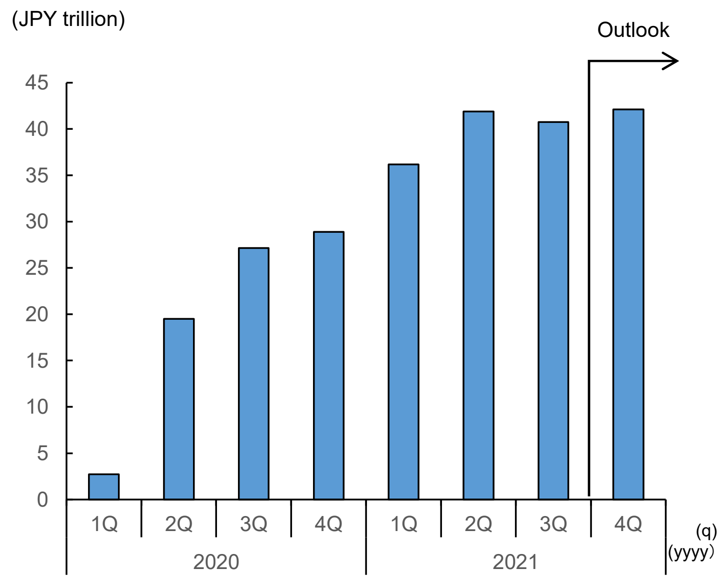
- Japanese household sector's financial surplus expanded to 9.2 trillion yen in the Oct-Dec quarter of 2021 (Jul-Sep quarter: 5.5 trillion yen).
  - The balance of Japanese household financial assets as of the end of December totaled JPY 2,023 trillion, reaching a record high. The increase was mainly driven from cash and deposits from the end of September (1,999 trillion yen). While winter bonuses increased from the previous year, households continued to curb spending on items such as overseas travel. The special fixed benefits also contributed partially to the increase.
  - Estimating the accumulated excess savings from 2020 based on the System of National Accounts, the surplus is expected to rise to around 42 trillion yen as of the 2021 Oct-Dec quarter.
- The corporate sector dipped into a shortage of funds (Jul-Sep quarter: 3.1 trillion yen → Oct-Dec quarter: -2.8 trillion yen). It appears that part of the funds went to investments.

Financial surplus and deficit by sector (quarterly flow)



Note: Seasonally adjusted.
Source: Made by MHRT based upon the Bank of Japan, *Flow of Funds*.

Accumulated excess savings from 2020 (SNA basis)



Note: Simplified estimate calculated by accumulating the difference in savings during the same quarter in 2019 from 1Q2020 (partly estimated figures).
Source: Made by MHRT based upon on Cabinet Office, *System of National Accounts of Japan*.

Bank of Japan: the BOJ is expected to continue its current monetary easing framework over the long term

- At the March Monetary Policy Meeting (March 17 and 18), the Bank of Japan (BOJ) decided to maintain its current monetary policy stance. Its assessment of the economy was revised downward.
  - The downward revision was due to factors such as the slow recovery in personal consumption. In addition, the impact of the situation in Ukraine on the Japanese economy and prices through developments in markets, commodity prices, and overseas economies were specified as risk factors. Also mentioned were price hikes going forward due to rising commodity prices, etc.
- The BOJ is expected to continue its current monetary easing framework for the time being.
  - Monetary base (end of month balance) remained high in February due to the continued monetary easing. Although the increased portion related to emergency responses is expected to fade as the effect of the Special Funds-Supplying Operations to Financing in Response to the Novel Coronavirus (COVID-19) runs its course, the pre-pandemic expansion policy remains unchanged.

Key points of the Monetary Policy Meeting (March 18)

(Continuation of accommodative monetary policy)
- The Bank will continue with Yield Curve Control.
- The Bank will continue purchases of assets.

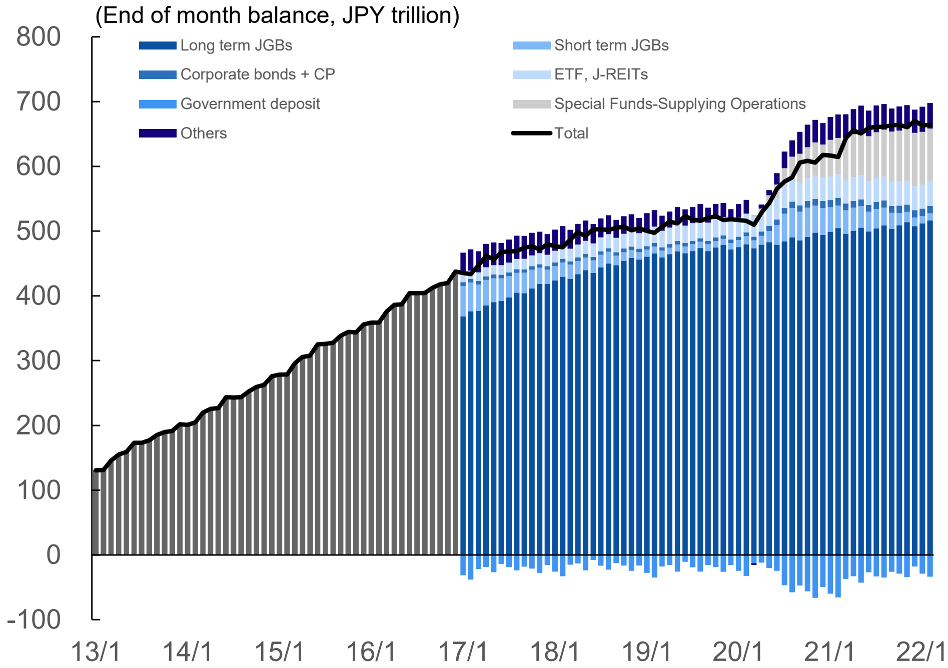
(Downward revision of economic assessment)
- Japan's economy has picked up as a trend.
- A pick-up in private consumption has paused, with downward pressure stemming from a resurgence of COVID-19 on particularly services consumption.

(Price outlook)
- The CPI is likely to increase clearly in positive territory for the time being due to a significant rise in energy prices, a pass-through of raw material cost increases, and dissipation of the effects of the reduction in mobile phone charges.

(Risk factors)
- There are extremely high uncertainties over how the situation surrounding Ukraine will affect Japan's economic activity and prices, mainly through developments in global financial and capital markets, commodity prices, and overseas economies.

Source: Made by MHRT based upon the Bank of Japan.

Monetary base



Note: Latest data is as of the end of February. Data for 2017 and earlier is shown in total without breakdown.
Source: Made by MHRT based upon the Bank of Japan.

Sustainability: EU accelerates going green to reduce dependence on Russian gas

- Following Russia's invasion of Ukraine, the UK and the US suspended imports of Russian fossil fuels. The EU, which is highly dependent on Russian gas imports, plans to accelerate the move to green energy by reducing its dependence on Russia in phased steps.
  - The US announced an immediate ban on all imports of Russian crude oil, gas, and coal (March 8). The UK also intends to reduce imports of Russian crude oil and petroleum products in phased steps and completely stop imports by the end of 2022.
  - The European Commission published the “REPower EU” plan as a measure to cut EU dependency on Russian gas by two-thirds within 2022. The plan includes accelerating the "Fit for 55" program that aims to reduce greenhouse gas emissions by 55% from the 1990 level by 2030.

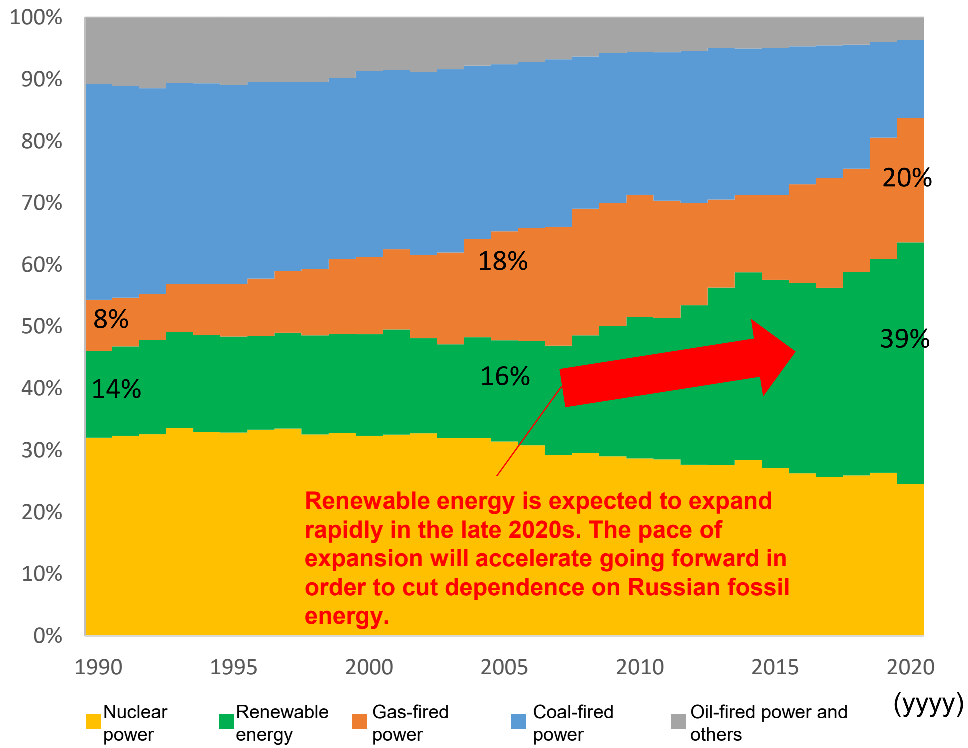
EU: plans to cut dependance on Russian gas during 2022

Substitute measures	Substituted volume (bcm)
➢ Diversify gas supplies, via higher LNG and pipeline imports	60
➢ Larger volumes of biomethane production (utilizing the Common Agricultural Policy)	3.5
➢ Promote energy conservation (e.g., turning down thermostats by 1° C)	14
➢ Accelerate installation of residential photovoltaics	2.5
➢ Accelerate installation of heat pumps	1.5
➢ Acceleration of large solar and wind power installations (Acceleration of permits, etc.)	20
Total	**101.5**

Equivalent to about 2/3 of Russian gas imports

Source: Made by MHRT based upon European Commission

Changes in the EU27 power supply composition

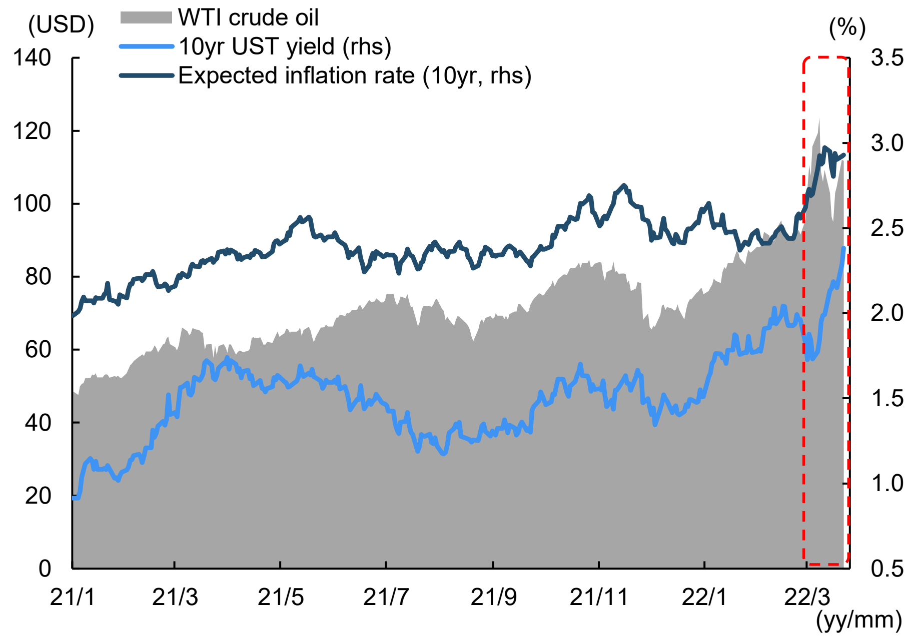


Source: Made by MHRT based upon Eurostat.

US bond market: US long-term interest rates rose to the 2.3% range reflecting concerns regarding inflation and the Fed's hawkish stance

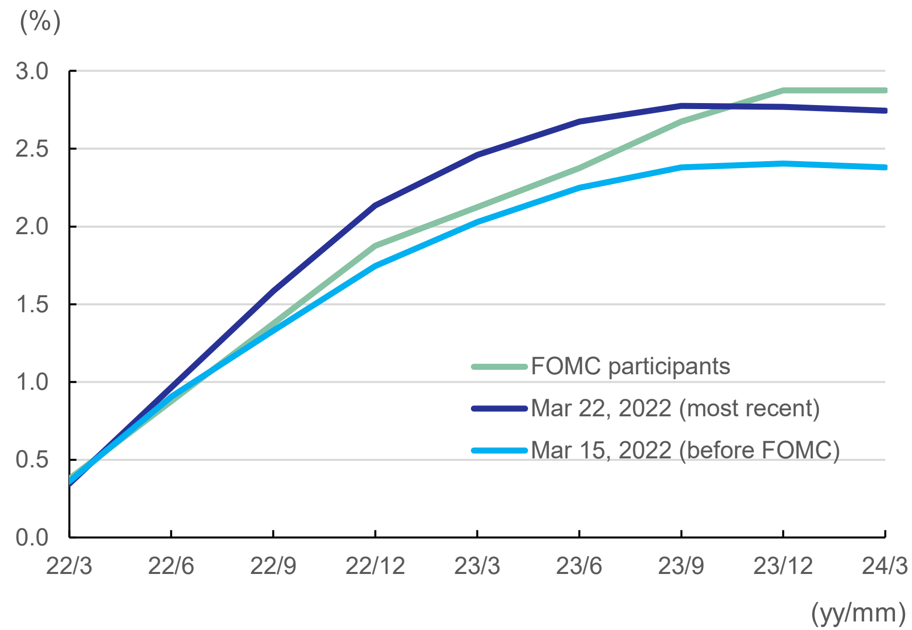
- US long-term interest rates rose to the upper half of the 2.3% range due to concerns about inflation caused by soaring oil prices and the FRB's hawkish stance.
  - WTI crude oil futures exceeded USD 100 per barrel, and expected inflation rate rose sharply to near 3%.
  - At the FOMC meeting (March 15 and 16), FOMC participants indicated that they would tighten above the neutral rate, and FRB officials, including FRB Chair Jerome Powell, suggested the possibility of a rate hike in excess of 25 basis points, increasing expectations that the pace of rate hikes will accelerate.
- Looking ahead, given the limited room for US long-term interest rates to rise, they are expected to remain in a flat range.
  - There is limited room tolerable for further rate hikes in the market, and there are concerns about an economic slowdown due to factors such as the situation in Ukraine.

Trend of crude oil prices and expected inflation rate (10yr)



Note: The expected inflation rates are break-even inflation rates.
Source: Made by MHRT based upon Bloomberg.

Rate hike path expected by FOMC participants and the market

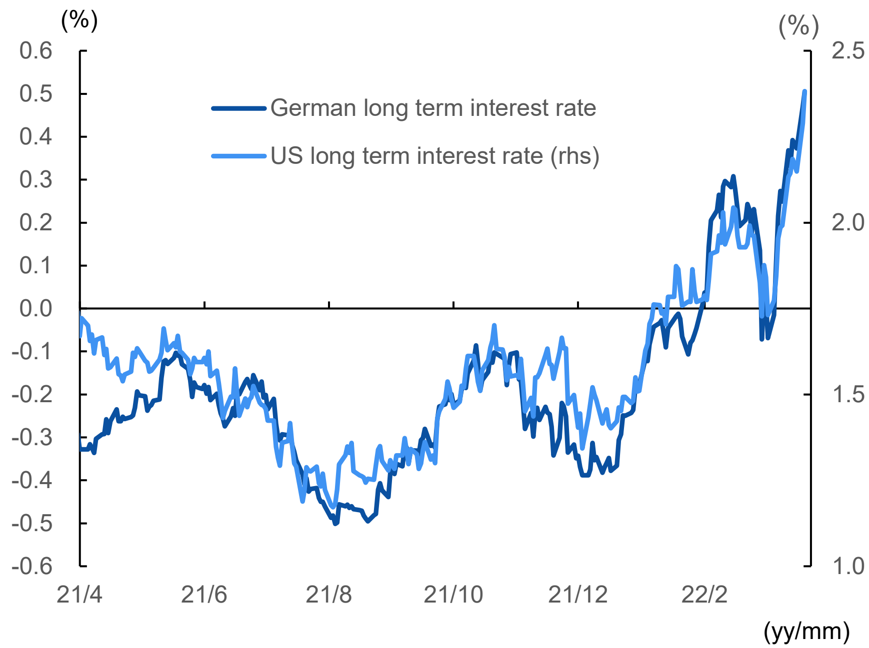


Note: FOMC participants' expectations are based on the median forecast at the end of each quarter in the policy rate outlook. Market expectations are based on Federal Fund futures rate.
Source: Made by MHRT based upon FRB and Bloomberg.

Eurozone bond market: German long-term interest rates rose to the 0.5% level, against the backdrop of rising US long-term interest rates, etc.

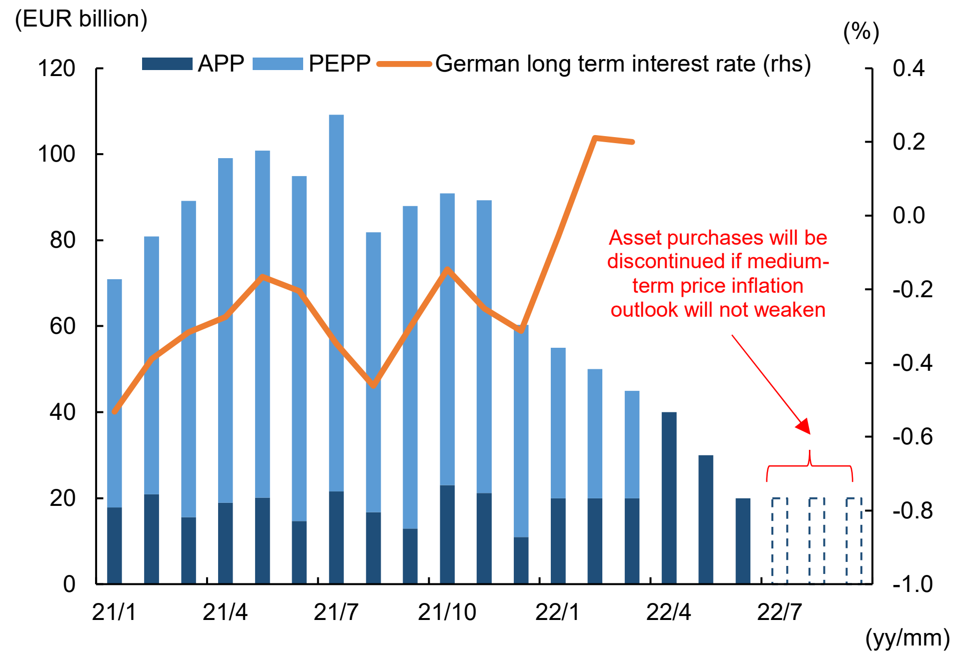
- German long-term interest rates rose to the 0.5% level on the back of rising US long-term interest rates and the ECB's stance on monetary policy normalization.
  - The ECB noted that it will gradually reduce asset purchases and will discontinue asset purchases in the 2022 Jul-Sep quarter if the medium-term inflation outlook will not weaken (March 10).
  - A number of hawkish ECB officials, including German Bundesbank President Joachim Nagel, have voiced support for a rate hike within 2022.
- Looking forward, German long-term interest rates are expected to remain in a flat range with further rises unlikely for the time being.
  - Despite strong inflationary pressures, fears of an economic slowdown due to the situation in Ukraine are expected to linger.

Trend of US and German long-term interest rates



Source: Made by MHRT based upon Bloomberg.

ECB asset purchases and German long-term interest rates

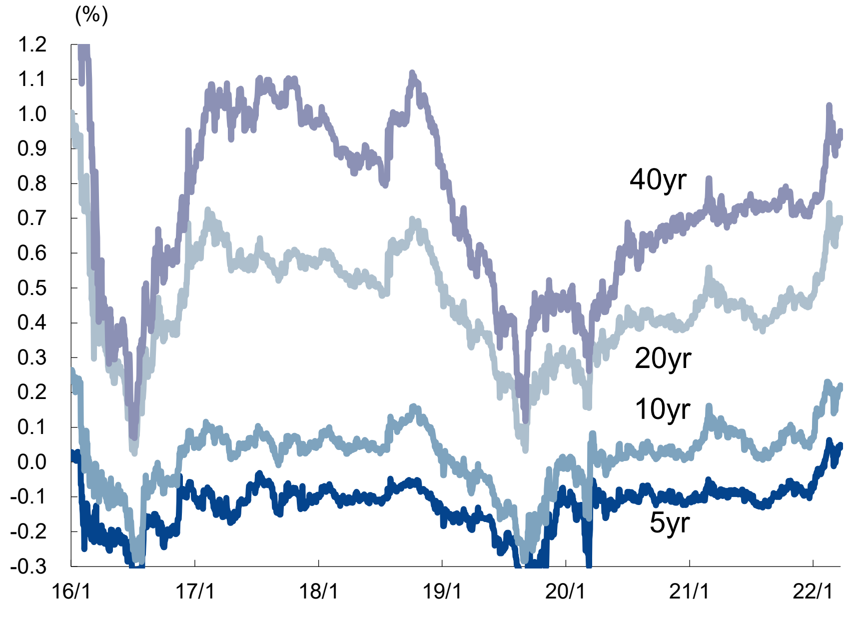


Note: Data for March 2022 and thereafter are on a forecast basis. German long-term interest rates are monthly averages.
Source: Made by MHRT based upon ECB and Bloomberg.

Japanese bond market: the 10yr JGB yield is projected to trend around 0.2% to the lower half of the 0.2% level

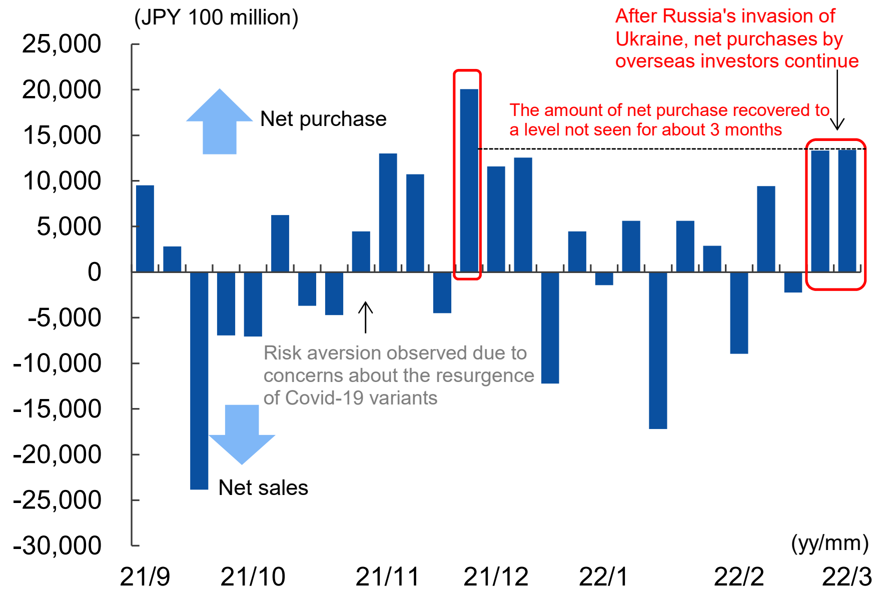
- The 10yr JGB yield rose to the lower half of the 0.2% level, for the first time in approximately a month, due to a rise in the US long-term interest rates reflecting speculation on a rate hike in the US.
  - The10yr JGB yield temporarily fell to the lower half of the 0.1% level, given the rise of demand for JGBs among risk-averse investors, reflecting the escalation of tensions surrounding Ukraine. Net purchases of medium to long-term JGBs by overseas investors rose to the highest level in approximately three months.
- Looking ahead, the 10yr JGB yield is expected to trend in a narrow range between 0.2% and the lower half of the 0.2% level due to the limited room for the US long-term interest rate to rise and the focus of attention on the BOJ's fixed-rate purchase operation at 0.25%.
  - Risk aversion and concerns about negative pressures on economic conditions stemming from the rise of tensions over the situation in Ukraine continue to linger as downward pressure on interest rates.

Trends in JGB yields



Source: Made by MHRT based upon Bloomberg.

International transactions in securities: long-term debt securities (weekly)

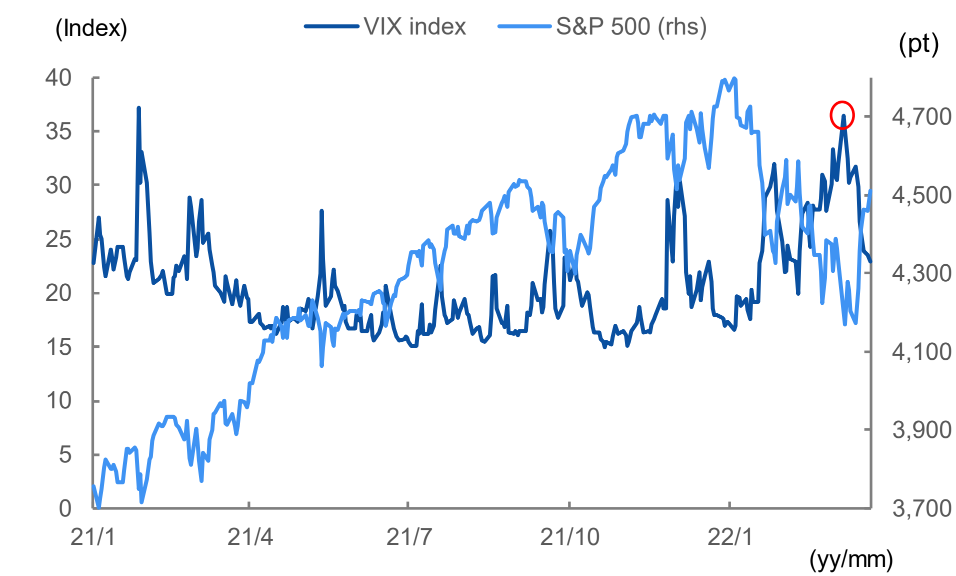


Source: Made by MHRT based upon Ministry of Finance, *International Transactions in Securities (weekly; based on reports from designated major investors)*

US stock market: volatile market movements amid the rise of tensions over the situation in Ukraine and concerns regarding the acceleration of inflation

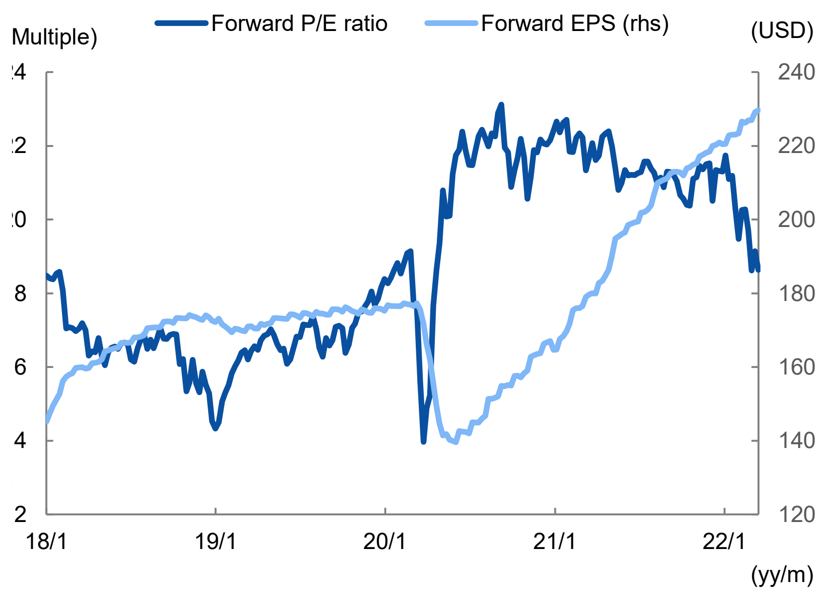
- The US stock market has been volatile due to the rise of tensions over the situation in Ukraine and growing concerns about the acceleration of inflation.
  - The VIX index temporarily rose to 36.5 (March 7), indicating volatile price movements affected by Russia-Ukraine ceasefire negotiations and economic sanctions developments.
  - Stock prices have recently rebounded against the backdrop of a pause in the surge in oil prices and a temporary mitigation in concerns about defaults in Russian government bonds.
- Looking ahead, the market is expected to soften slightly.
  - While interest rates are expected to remain flat, considering they are already at high levels, the rise in P/E ratio should be limited.
  - However, as the forward EPS is continuing to follow a growth trend, steady corporate earnings should serve to support stock prices.

Trend of the VIX Index



Source: Made by MHRT based upon Refinitiv.

S&P 500 forward EPS and forward P/E ratio



Note: Forward EPS and forward P/E ratio are based on a 12-month forward forecast.
Source: Made by MHRT based upon Refinitiv.

Japanese stock market: Japanese stocks fell in tandem with the US stock market

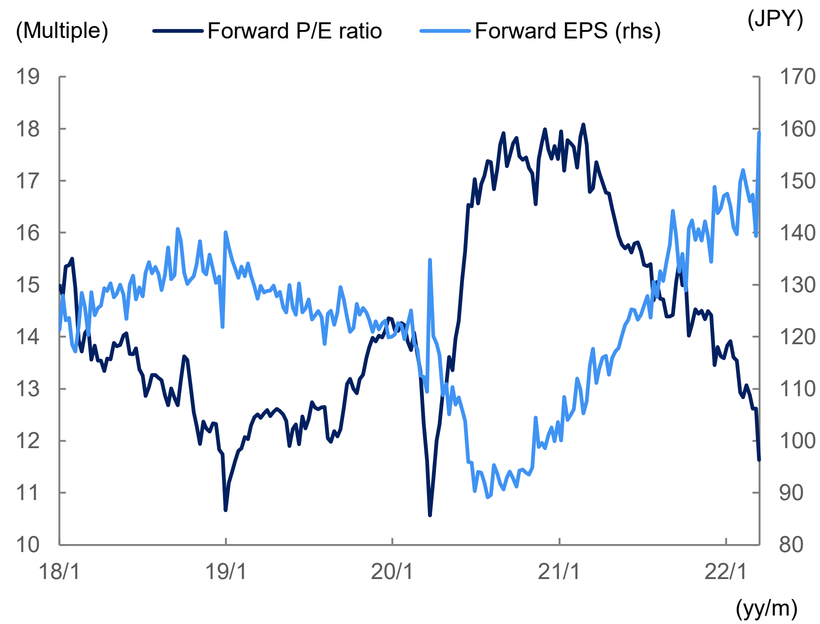
- The Japanese stock market was subject to sharp swings, reflecting the situation in Ukraine. The Nikkei average temporarily fell below 25,000 yen.
  - In terms of recent sector performance, sectors including the energy resources sector rose due to soaring energy prices. The automobile & transportation equipment, foods sectors, etc., have fallen sharply due to supply constraints and surging materials prices.
- Looking ahead, although the Japanese stock market may soften in tandem with the US stock market, we expect a gradual rise thereafter.
  - The forward EPS is currently following an expansion, as Japanese companies are expected to maintain solid earnings going forward.
  - The P/E ratio has recently declined to the 11x level. Considering the corporate earnings growth of Japanese companies, the decline of the P/E ratio is expected to be limited.

TOPIX-17 returns by sector

	End of Dec to end of Jan	End of Jan to End of Feb	End of Feb to most recent	Year-to-date return
TOPIX	-4.8	-0.5	2.5	-2.9
Steel & nonferrous metals	2.7	7.8	2.4	32.5
Financials (ex. banks)	4.1	-2.7	7.4	28.7
Energy resources	7.1	2.3	11.4	21.9
Banks	7.0	1.3	6.2	15.1
Commercial & Wholesale trade	0.3	2.2	10.8	13.6
Transportation & Logistics	-1.8	4.3	5.2	11.6
Real estate	1.7	1.3	3.8	7.0
Electric power & Gas	0.9	4.5	1.2	6.7
Retail trade	-1.5	2.5	-1.3	-0.3
Pharmaceutical	-5.2	5.3	-0.2	-0.3
Foods	-1.3	1.0	-2.1	-2.4
Construction & Materials	-2.8	0.2	0.2	-2.4
IT & Services, Others	-7.7	0.7	4.5	-2.9
Automobiles & transportation equipment	1.9	-3.1	-3.7	-4.9
Raw materials & Chemicals	-4.8	-2.1	-0.4	-6.5
Machinery	-7.3	-3.6	4.3	-6.7

Source: Made by MHRT based upon Refinitiv.

TOPIX forward EPS and forward P/E ratio

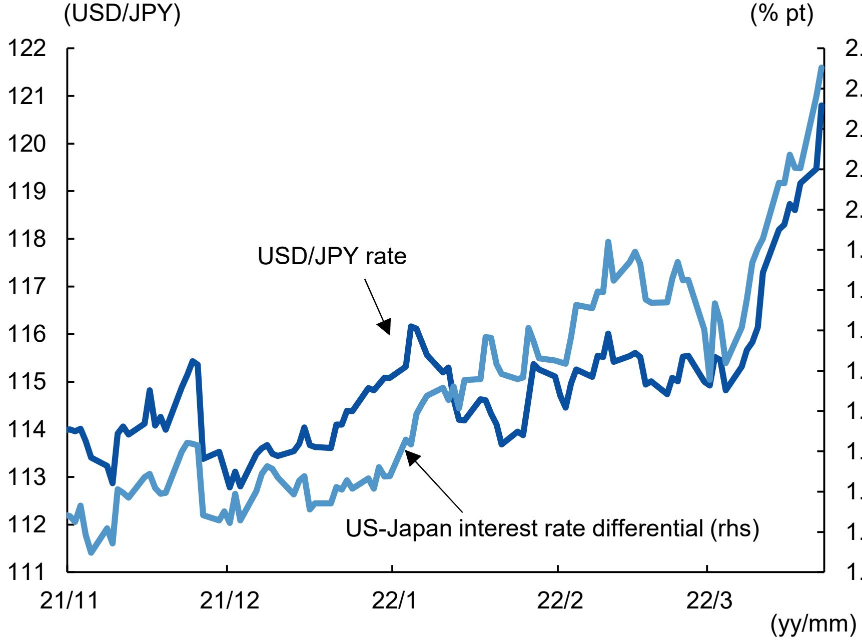


Note: Forward EPS and forward P/E ratio are based on a 12-month forward forecast.
Source: Made by MHRT based upon Refinitiv.

Forex market: the dollar strengthened to the 1 USD = JPY 120 level for the first time since February 2016

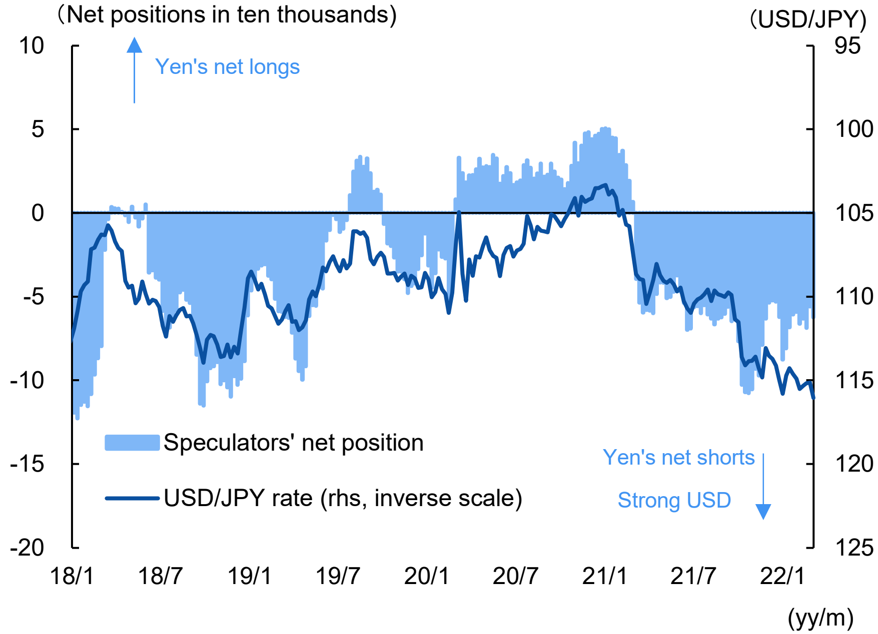
- The USD/JPY rate: the dollar strengthened against the yen to the 1 USD=JPY 120 level for the first time since February 2016 on a closing basis.
  - US interest rates rose due to concerns regarding inflation stemming from the rise of commodity prices, a "hawkish" FOMC meeting (March 15 to 16), and suggestions of a possible rate hike of over 25 basis points by FRB officials including FRB Chair Jerome Powell. This led to the widening of the Japan-US interest rate differential, causing the yen to weaken against the dollar.
- Given the limited room for further US interest rate rises, the USD/JPY rate is expected to remain in a flat range.
  - Amid the accumulation of yen net short positions to a certain degree, and lingering uncertainties over the situation in Ukraine, it will be necessary to keep a close eye upon the possibility of a rapid rise of yen-strengthening pressures due to the unwinding of positions in response to a further rise of tensions.

The USD/JPY rate and the US-Japan interest rate differential



Note: US-Japan interest rate differential = 5yr UST yield – 5yr JGB yield.
Source: Made by MHRT based upon Bloomberg.

USD/JPY rate and net positions among speculators



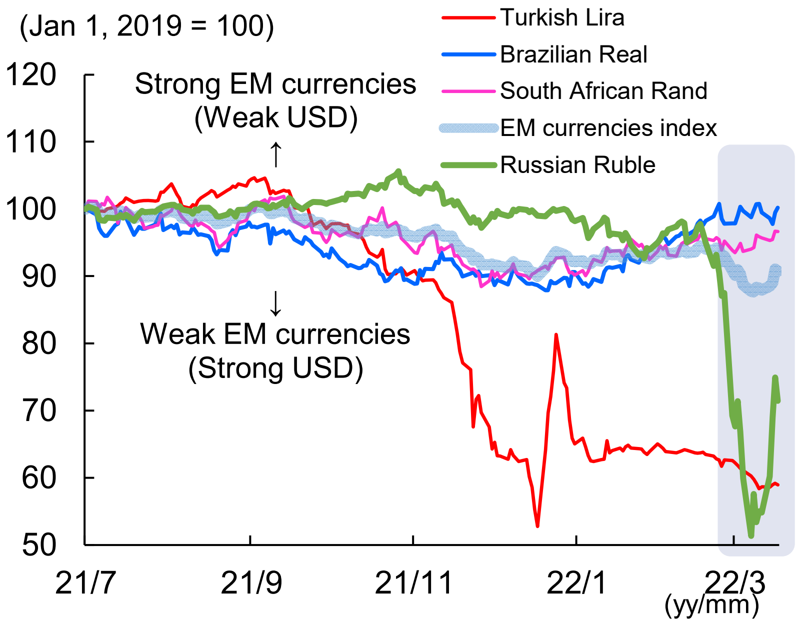
Source: Made by MHRT based upon Bloomberg.

MIZUHO

EM financial markets: EM capital outflows reflecting Russia's invasion of Ukraine

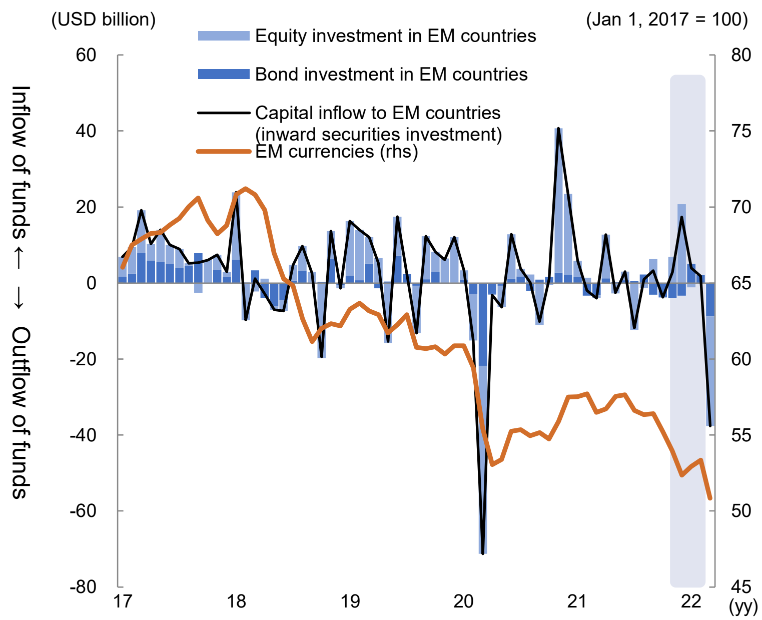
- Russia's invasion of Ukraine (February 24) triggered a Russian market sell-off, with a triple depreciation of stocks, bonds, and its currency.
  - ■ The longer the invasion of Ukraine and sanctions against Russia continue, the more serious the impact on the Russian economy will be, and the longer the Russian sell-off will continue.
- Currently funds are also flowing out of EM countries other than Russia. Capital outflows prompted by the invasion of Ukraine and the US interest rate hike was equivalent to 40% of the amount at the time of the Covid-19 crisis (February to May 2020), in the half-month period up to mid-March alone (based on daily statistics published by IIF, see below figure on the right).
- In Brazil, a resource-rich country with a trade surplus, interest rate hikes for currency defense and inflation control and the appreciation of commodities are supporting the currency. However, in many other EM countries, especially those with current account deficits, capital outflow (currency depreciation) pressures are expected to continue for the time being.

EM stocks and EM currencies



Note: EM stocks are indicated by MSCI Emerging Markets.
EM currencies index is indicated by the *JP Morgan Emerging Markets FX Index*.
Source: Made by MHRT based upon Refinitiv.

Flow of funds to EM countries and EM currencies



Note: Emerging market currencies are based on the *JP Morgan Emerging Markets FX Index*. Flow of funds is based on 15 countries (published data by IIF up to March 16)
Source: Made by MHRT based upon IIF and Refinitiv.

Outlook on the financial markets

		Mar 22, 2022	Jan-Mar	Apr-Jun	Jul-Sep
Japan	Interest rate on Policy-Rate balances (End of term, %)	-0.10	-0.10	-0.10	-0.10
	Newly-issued JGBs (10yr, %)	0.22	0.10 to 0.20	0.10 to 0.20	0.10 to 0.20
	Nikkei Stock Average (JPY)	27,224	27,000 to 28,500	27,500 to 28,500	27,500 to 28,500
US	Federal Funds Rate (End of term, %)	0.00 to 0.25	0.25 to 0.50	0.75 to 1.00	1.25 to 1.50
	Long-term UST (10yr, %)	2.38	1.75 to 1.95	1.95 to 2.35	2.05 to 2.45
	Dow Jones Average (USD)	34,807	33,800 to 35,600	33,500 to 35,300	33,300 to 35,100
Eurozone	ECB deposit facility rate (End of term, %)	-0.50	-0.50	-0.50	-0.50
	Long-term government bond (Germany, 10yr, %)	0.51	0.00 to 0.20	0.10 to 0.50	0.15 to 0.55
Forex	USD/JPY rate (USD/JPY)	120.80	114 to 116	118 to 121	119 to 122
	EUR/USD rate (EUR/USD)	1.103	1.12 to 1.14	1.10 to 1.12	1.09 to 1.11

Note: 1. The foreign exchange rates (actual) are NY closing rates.
2. The projected policy interest rate indicated for the Oct-Dec, Jan-Mar, and Apr-Jun quarters is the end of quarter closing rate, while others indicate that the average value in the quarter will fall within the range indicated.

Source: Made by MHRT based upon Bloomberg.