

Section 2

THE KANSAI ECONOMY: RECENT DEVELOPMENTS AND SHORT-TERM FORECASTS

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1. Retrospective of the Kansai Economy in FY 2021

In FY 2021, the Kansai economy recovered somewhat from the previous year, but was still at the mercy of the COVID-19 outbreak and continued to be weak due to new downward pressures such as the shortage of semiconductors and soaring raw material prices. The number of new COVID-19 infections reached its fourth and fifth waves in April and August 2021, and a state of emergency was declared both times. New infections subsided in early fall, but at the beginning of 2022 they started increasing at an unprecedented pace. The resulting sixth wave was due to the emergence of the highly infectious Omicron strain. In mid-February the number of daily infections increased to nearly 25,000, almost five times the peak of the fifth wave. In the summer of 2022, there was a seventh wave of infections, but no restrictions were imposed. Entry restrictions into Japan were relaxed, and tourism resumed. Economic activity normalized on the premise of life “With Corona”.

If we divide the Kansai economy into four major sectors (the household, corporate, external and public sectors), trends in FY 2021 can be summarized as follows. The household sector recovered from the previous year’s decline, but remained weak due to the spread of COVID-19 and the two emergency states. Recovery in the income and employment environment was slow. The corporate sector generally recovered compared to the sharp deterioration in the previous year, but both the manufacturing and non-manufacturing industries remained stagnant due to significant downward pressure from a variety of risk factors. In the external sector, both exports and imports expanded. Goods exports to China, Europe and the U.S. all recovered. Service exports, such as inbound tourism, finally began to show signs of recovery as economic activity normalized. Imports rose sharply, partly due to soaring energy prices. Finally, Kansai’s public sector performed well, in contrast to the nation as a whole. Below, we proceed to discuss these trends by sector in more detail.

(1) Household sector

In FY 2021, the household sector in the Kansai region recovered from the decline in the previous year, but did not reach a full-fledged recovery, partly

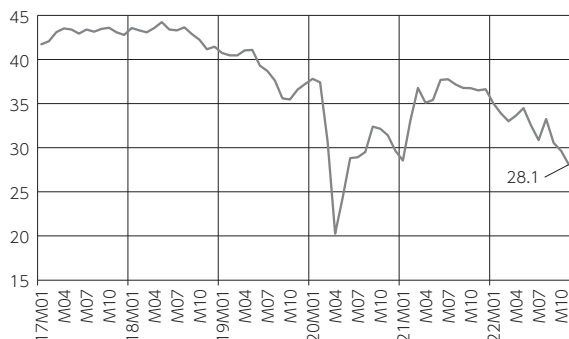


Figure 2-2-1 Consumer Confidence Index

Source: Cabinet Office, "Survey of Consumption Trends"

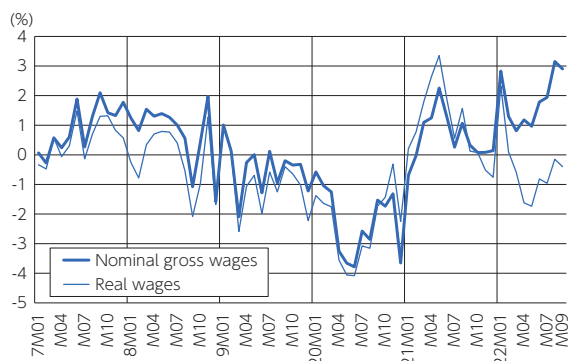


Figure 2-2-2 Gross Nominal Wages and Real Wages (% change from the same month of the previous year)

Source: Ministry of Health, Labour and Welfare, "Monthly Labor Survey," etc.

due to the two states of emergency. In particular, the income and employment environment recovered more slowly than in the rest of the country.

Consumer Sentiment

Consumer sentiment improved in FY 2021 compared to FY 2020, when it deteriorated sharply, but the pace of recovery was slow (Figure 2-2-1). The sentiment continued to deteriorate in FY 2022 due to growing uncertainty over the future, including the spread of COVID-19, Russia's invasion of Ukraine, and the accompanying high resource prices.

Income environment

Although the income environment improved compared to the previous year, it did not recover to its pre-pandemic level (Figure 2-2-2). Gross salaries in

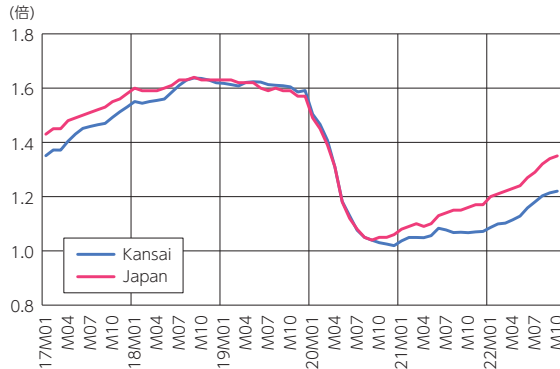


Figure 2-2-3 Effective Job Openings to Applicants Ratio (Seasonally Adjusted)

Source: Ministry of Health, Labour and Welfare, "General Employment Placement Situation"

Kansai (APIR estimate) averaged 312,654 yen per month in FY 2021. This was a decrease of -2.2% from the previous year, and the first YoY decrease in three years. The figure was slightly lower than the national average (320,256 yen), and -1.3% lower than the pre-pandemic FY 2019.

Real wages (i.e. excluding the effect of price fluctuations based on the consumer price index) were up +0.9% from the previous year, the first YoY increase in four years. However, they were -0.9% lower relative to the pre-pandemic FY 2019. In FY 2022, real wages keep decreasing as wage hikes are failing to keep pace with the pace of price hikes.

Employment environment

Compared to the nation as a whole, Kansai's recovery has been slow (Figure 2-2-3), with the ratio of job offers to job applicants in FY 2021 being 1.07. This was a decrease of 0.01 points from the previous year and the third consecutive year of deterioration. The national average was 1.16, exceeding the previous year's level for the first time in two years. The nation as a whole has been on a gradual but steady recovery trend, widening the gap with the Kansai region, where the recovery has lagged.

Large retailers' sales

The overall sales of large retailers in the Kansai region in FY 2021 was 3,494.5 billion yen, up 1.7% from the previous year, the first year-on-year increase in four years (Figure 2-2-4).

Therein, department store sales totaled 1,187.1 billion yen, up +6.9% from the previous year, marking the first increase in four years. The number of customers recovered too — although there were several states of emergency in FY 2021, the restrictions were less severe compared to FY 2020. However,

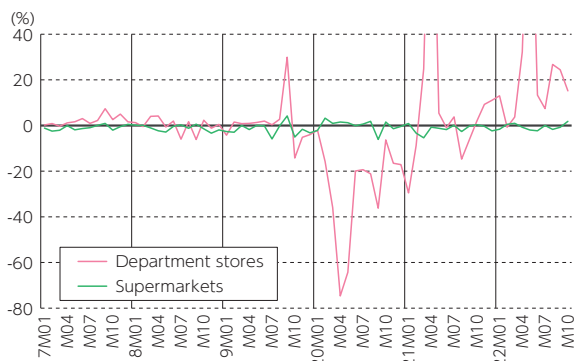


Figure 2-2-4 Department store and supermarket sales (y/y: %)

Note: Based on all stores; 150.4% in April 2021.

Source: "Department Store and Supermarket Sales", Kinki Bureau of Economy, Trade and Industry

department store sales remained -20.3% lower relative to the pre-pandemic FY 2019.

On the other hand, supermarket sales in FY 2021 totaled 2,307.4 billion yen, down -0.8% from the previous year.

(2) Corporate sector

In FY 2021, the corporate sector in the Kansai region recovered from the significant deterioration in the previous year, but failed to achieve a robust recovery. The manufacturing sector experienced ups and downs due to supply-constraining factors such as the global shortage of semiconductors and soaring raw material prices. In the non-manufacturing sector, growth was sluggish, especially in face-to-face services.

Business confidence

According to the Bank of Japan's Tankan survey, the Diffusion Index (DI) for business conditions in Kansai (firms of all sizes in all industries) continued to recover in FY 2021, turning positive for the first time in eight quarters at +5 in the December 2021 survey (Figure 2-2-5). Since then, it has remained in positive territory for five consecutive quarters, reaching +5 again in the December 2022 survey. There is no significant difference from the national average.

By industry, improvement in FY 2021 was led by the manufacturing sector. In FY 2022, the pace of recovery in the non-manufacturing sector was slow due to measures aimed at curbing the spread of COVID-19. In FY 2022, growth in the manufacturing sector has been sluggish due to high resource prices and lockdowns in China. According to the December 2022 survey, the DI for the

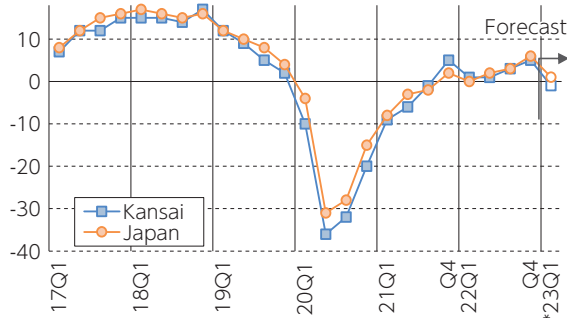


Figure 2-2-5

DI for business conditions according to the Bank of Japan's Tankan survey (all sizes, all industries)

Note: * denotes that it is a forecast.

Source: Bank of Japan, Osaka Branch, "Short-term Economic Survey of Enterprises"

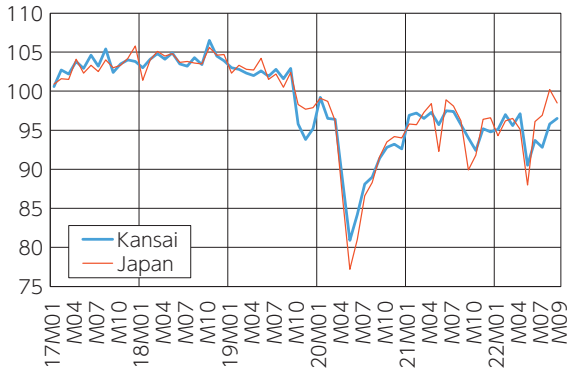


Figure 2-2-6

Industrial Production Index (seasonally adjusted, 2015=100)

Source: "Kinki Region Industrial Production Trends," Kinki Bureau of Economy, Trade and Industry

manufacturing sector was +1, while that for the non-manufacturing sector was +9. **Industrial production**

Although production picked up in FY 2021, growth was sluggish due to the global shortage of semiconductors and soaring raw material prices (Figure 2-2-6) The production index for the full year of FY 2021 was 95.6 (2015=100, seasonally adjusted). This was an increase of +5.0% over the previous year, marking the first increase in production in three years. However, production has not recovered to its pre-pandemic level, remaining -3.6% lower relative to FY 2019.

On a monthly basis, from July to October 2021, production declined for four consecutive months due to the impact of production adjustments caused by supply constraints in the automotive industry. In addition, since the beginning

Table 2-2-1

BOJ Tankan: Planned Capital Investment

	Kansai		
	All industries	Manufacturing	Non-manufacturing
FY 2021	-8.9	-4.9	-11.5
FY 2022	15.9	24.0	10.6
	Japan		
	All industries	Manufacturing	Non-manufacturing
FY 2021	-0.8	1.1	-1.9
FY 2022	15.1	20.3	12.1

Source: Bank of Japan, Osaka Branch, "National Short-term Economic Survey of Enterprises in the Kinki Region"

of 2022, production has been at a standstill due to soaring energy prices.

Capital investment

The impact of COVID-19 resulted in subdued investment in FY 2021, down -8.9% from the previous year (Table 2-2-1). By industry, the manufacturing and non-manufacturing sectors showed declines of -4.9% and -11.5%, respectively. A significant rebound is expected in FY 2022, as planned investment is +15.9% higher. By industry, planned investment in the manufacturing and non-manufacturing sectors is +24.0% and +10.6% higher, respectively.

(3) External sector

In FY 2021, both exports and imports expanded in the external sector of the Kansai region. Goods exports to Europe and the U.S. recovered in addition to firm exports to China. Exports of services, such as inbound demand, finally began to show signs of recovery from a bottoming-out phase as economic activity normalized. Imports increased substantially, partly due to a sharp rise in energy prices.

Trade in goods

Both exports and imports expanded in FY2021 (Figure 2-2-7). Exports totaled 19,237.5 billion yen, a significant increase of 22.4% over the previous year. This was the first year-on-year increase in four years. Exports of semiconductors and other electronic components and construction and mining equipment increased significantly, reaching a yearly record high. On a monthly basis, the monthly growth has been near double-digit for 20 consecutive months from March 2021 to October 2022.

By region, exports to Europe and the U.S. recovered significantly, in addition to those to China, which had recovered earlier in the previous year (Figure 2-2-8). Since the beginning of 2022, exports to the U.S. and the EU have been robust, while those to China have grown only modestly compared to Europe and

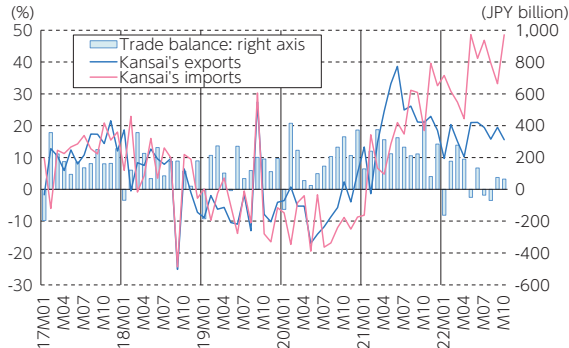


Figure 2-2-7 Exports, imports, and trade balance

Source: Osaka Customs, "Overview of Trade in the Kinki Region"

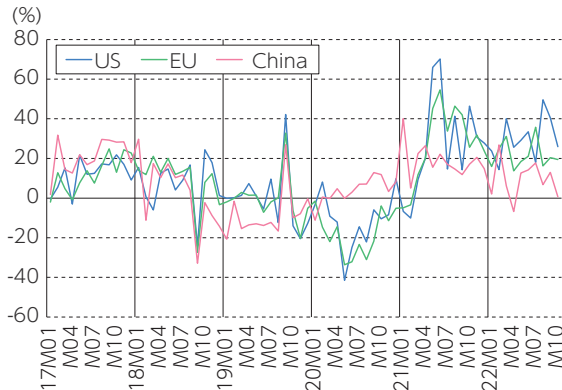


Figure 2-2-8 Exports by region (YoY)

Source: Osaka Customs, "Overview of Trade in the Kinki Region"

the U.S., partly due to the impact of the lockdown.

Imports totaled 16,597.0 billion yen, up 25.2% from the previous year, the first year-on-year increase in three years. Natural gas and manufactured gas increased due to soaring energy prices, and pharmaceuticals increased due to imports of new COVID-19 vaccines.

The trade balance, which is the value of exports minus the value of imports, showed a surplus of 2,640.5 billion yen, the seventh consecutive year of surplus. However, the recent remarkable growth in imports has led to a trade deficit in some months in 2022.

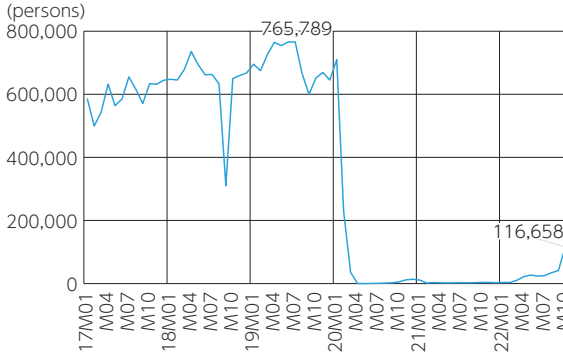


Figure 2-2-9 Number of international visitors to Japan (persons)

Source: Ministry of Justice, "Immigration Statistics"

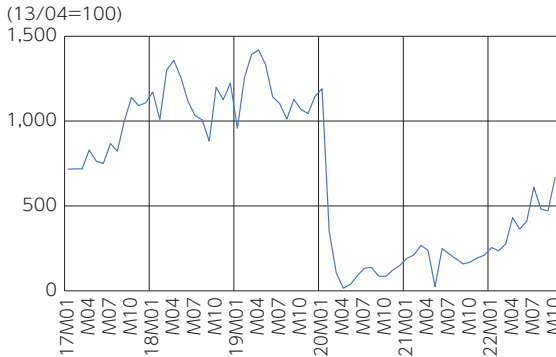


Figure 2-2-10 Department store duty-free sales (April 2013=100)

Source) Bank of Japan, Osaka Branch, "Department Store Duty Free Sales (Kansai Region)"

Inbound tourism

Inbound tourism (exports of services) continued to bottom out during FY 2021, and finally showed signs of recovery in FY 2022 as entry restrictions were eased sequentially. According to the Ministry of Justice, the number of international visitors to Japan in FY 2021 was 405,000, 42,000 of which arrived at Kansai International Airport (Figure 2-2-9). The number was +25.0% higher than FY 2020. The increase, which is attributable to the Tokyo Olympics, was the first year-on-year increase in three years. In October 2022, the number of visitors to Japan exceeded 100,000 for the first time since February 2020 due to the removal of the cap on the number of visitors and the lifting of the ban on the entry of individual travelers.

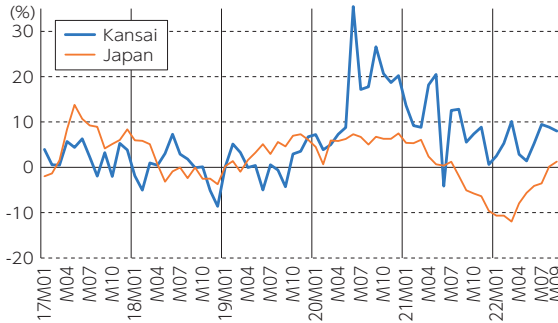


Figure 2-2-11 Public works output (YoY)

Source: Ministry of Land, Infrastructure, Transport and Tourism, "Comprehensive Construction Statistics"

Department store duty-free sales are recovering too (Figure 2-2-10). According to the Osaka branch of the Bank of Japan, duty-free sales at department stores in the Kansai region in FY 2021 increased +58.3% over the previous year. In FY 2022, the increase in the number of foreign tourists and the rapid depreciation of the yen acted as a tailwind for a recovery in spending by visitors.

(4) Public sector

The public sector (public works) in the Kansai region remained steady. In FY2021, the value of completed public works in the Kansai region totaled 2,757.5 billion yen, up +7.5% from the previous year (Figure 2-2-12). This is the third consecutive year of year-on-year increase. Large-scale public investment projects are in progress, including the development of land on Yumeshima in the Osaka Bay area, the new Nagoya-Kobe Expressway, and the Yodogawa Left Bank Route. In FY 2022, the public works are likely to grow YoY too.

On the other hand, nationwide, in contrast to Kansai, there was a slowdown: the value of completed public works in FY 2021 totaled 21,834.3 billion yen, down -8.0% from the previous year. This slowdown is thought to have been caused by the absence of demand for construction related to the Tokyo Olympics (the figure for the southern Kanto region was -10.4% YoY).

2. Kansai Economic Forecast: FY 2022-2024

Our forecasts for the Kansai economy presented below reflect the latest economic indicators within and outside the Kansai region, including the second preliminary GDP figures for 2022 Q3.

(1) Kansai GRP growth forecast: +1.5% in FY 2022, +1.2% in FY 2023, +1.5% in FY 2024

We forecast that Kansai's real GRP growth will be +1.5% in FY 2022, +1.2% in FY 2023, and +1.5% in FY 2024 (Table 2-2-2, Figure 2-2-12). After two consecutive years of negative growth in FY 2019 and FY 2020, positive growth in the 1% range means that the momentum of recovery is weak, and it will take until FY 2023 for Kansai's GRP to recover to its pre-pandemic level.

In terms of the contribution of demand categories to growth, private demand will drive growth by +1.7 percentage points in FY 2022, +0.9 percentage points in FY 2023, and +1.2% in FY 2024. Public demand will prop up growth modestly by +0.2 percentage points from FY 2022 to FY 2024. On the other hand, external demand will depress growth by -0.4 percentage point in FY 2022, and will contribute only +0.1 percentage point in FY 2023 and FY 2024.

Comparing the Kansai and Japan economic forecasts (Figure 2-2-13), there are no major differences.

Table 2-2-2 Economic Forecasts for Kansai

FY	2020	2021	2022	2023	2024
Private final consumption expenditure	▲5.4	1.9	2.1	1.2	1.2
Private residential investment	▲3.0	▲4.0	▲3.4	1.8	1.7
Private non-residential capital investment	▲6.8	1.6	2.8	3.1	3.1
Government final consumption expenditure	2.8	3.0	1.0	1.0	0.7
Public fixed capital formation	8.0	▲1.5	0.9	2.6	2.2
Exports	▲2.1	6.9	2.2	0.6	2.8
Imports	▲2.4	5.6	3.7	0.1	2.7
Real GRP	▲4.1	1.9	1.5	1.2	1.5
Private demand (contribution)	▲4.9	0.8	1.7	0.9	1.2
Public demand (contribution)	0.7	0.4	0.2	0.2	0.2
Net exports (contribution)	0.1	0.7	▲0.4	0.1	0.1
Nominal GRP	▲3.3	1.9	1.5	2.6	2.8
GRP deflator	0.8	▲0.1	0.0	1.4	1.3
Consumer price index	▲0.3	0.0	3.1	2.0	1.5
Industrial Production Index	▲8.3	5.2	1.5	1.9	1.9
Unemployment rate	3.1	3.0	2.9	2.8	2.7

Note: Unit percentages are YoY growth rates except for the unemployment rate, which is the actual forecast for FY2020-21 and the forecast for FY2022-24.

Source: Prepared by the author

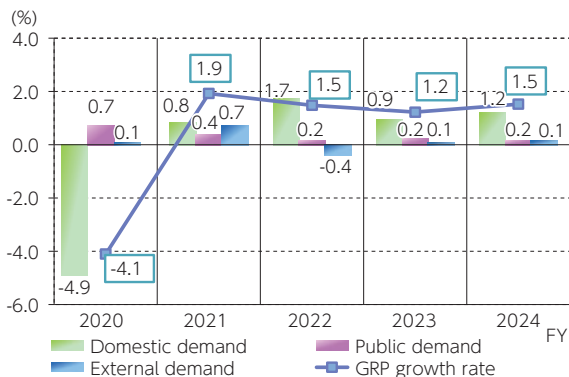


Figure 2-2-12 GRP Forecast Results and Contribution to Growth

Note: FY2020-FY2021 are actual forecasts; FY2022-FY24 are forecasts.
 Source: Prepared by the author

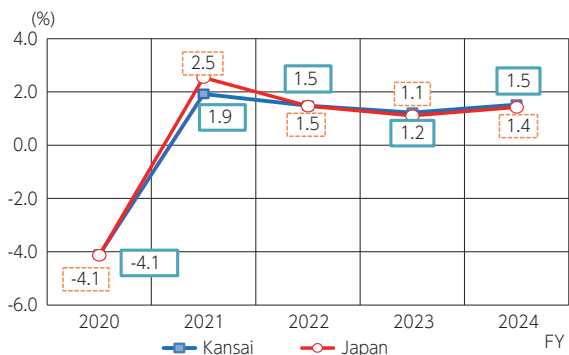


Figure 2-2-13 Economic Growth Rates in Kansai and Nationwide

Source: Prepared by the author

(2) Forecasts by sector

Private sector

The contribution of private demand to GRP growth is forecast to be +1.7 percentage points in FY 2022, +0.9 percentage points in FY 2023, and +1.2 percentage points in FY 2024. In FY 2021, the contribution of private demand to GRP growth turned positive for the first time in three years, and it is expected to keep underpinning economic growth in Kansai.

The household component of the private sector consists of real private final consumption expenditures and real private residential investment. The former

is projected to grow by +2.1% in FY 2022, +1.2% in FY 2023, and +1.2% in FY 2024. The normalization of economic activity, including the easing of COVID-19 restrictions, will allow private consumption to recover and boost overall growth. On the other hand, real residential investment is projected to shrink by -3.4% in FY 2022 due to a sharp rise in construction material prices. However, it is expected to recover by +1.8% in FY 2023, and +1.7% in FY 2024.

Public sector

The contribution of public demand to real GRP growth is forecast to be +0.2 percentage points in FY 2022, +0.2 percentage points in FY 2023, and +0.2 percentage points in FY 2024. The public sector will provide solid underlying growth.

Therein, real government final consumption expenditure growth is expected to be +1.0% in FY 2022, +1.0% in FY 2023, and +0.7% in FY 2024. The growth rate will gradually contract as the boosting effect of COVID-related spending wears off. On the other hand, real public fixed capital formation is expected to grow by +0.9% in FY 2022, +2.6% in FY 2023, and +2.6% in FY 2024. The acceleration reflects expected progress in the development of infrastructure related to the World Expo 2025 which will be held in Osaka, Kansai. For that reason, the growth rate of public investment in Kansai is expected to be higher than that of the nation as a whole.

External sector

The external sector consists of international net exports (exports minus imports) and domestic extraterritorial net transactions (net economic transactions with other domestic regions). The contribution of external demand to real GRP growth is projected to be -0.4 percentage points in FY 2022, +0.1 percentage points in FY 2023, and +0.1 percentage points in FY 2024.

For overseas transactions, real export growth is projected to be +2.2% in FY 2022, +0.6% in FY 2023, and +2.8% in FY 2024. FY 2022 exports to Europe and the U.S., which are currently strong, and a recovery in inbound demand due to the relaxation of border control measures, will contribute to growth. In FY 2024, growth will be somewhat higher, but will not be strong enough to drive the economy. Real import growth is projected to be +3.7% in FY 2022, +0.1% in FY 2023, and +2.7% in FY 2024. The contribution of net exports to real GRP growth will be -0.4 percentage points in FY 2022, +0.2 percentage points in FY 2023, and +0.1 percentage points in FY 2024.

The contribution of real domestic net exports, is projected to be -0.0 percentage points in FY 2022, -0.1 percentage points in FY 2023, and +0.0 percentage points in FY 2024. The contribution to growth is negligible.

Employment environment

The unemployment rate remained in the 2% range through FY 2019, but worsened to 3.1% and 3.0% in FY 2020 and FY 2021, respectively. Looking ahead, we forecast a gradual improvement to 2.9% in FY 2022, 2.8% in FY 2023, and 2.7% in FY 2024.

3. Advance Estimates of the GRPs of Kansai Prefectures (FY 2020-FY 2022)

In Japan, official prefectural GRP figures are released about two years later than the release of the national GDP figure. For that reason, APIR has been making its own early estimates of the actual GRPs for the six prefectures in the Kansai region for previous years that have not yet been published. In this section, we present the results of the early estimates up to FY 2022 as the latest version.

Table 2-2-3 shows our estimates. The total real GRP of the six Kansai prefectures is estimated at 84.7 trillion yen in FY 2020, 85.1 trillion yen in FY 2021, and 86.9 trillion yen in FY 2022. The real GRP growth rate is estimated at -3.8% in FY 2020, +0.4% in FY 2021, and +2.2% in FY 2022. FY 2020 marked be the first negative growth in five years. As a juxtaposition, the growth rate of the Kansai

Table 2-2-3

Summary of Early Estimates and Very Short-Term Forecast Results

	Osaka	Hyogo	Kyoto	Shiga	Nara	Wakayama	Total (Kansai)	Japan
● Goodness of fit								
Adjusted R-square	0.83	0.96	0.87	0.79	0.77	0.73	-	-
MAPE of GRP (%)	0.94	0.41	0.92	1.98	0.57	1.08	-	-
MAPE of GRP growth(%)	1.42	0.70	1.67	2.42	0.74	1.67	-	-
Durbin-Watson statistic	2.17	2.75	2.77	1.59	1.45	2.71	-	-
● Real GRP (trillion yen)								
FY2019(confirmed)	40.7	22.1	10.7	7.0	3.9	3.7	88.0	549.9
FY2020(estimate)	39.2	21.2	10.3	6.7	3.7	3.5	84.7	524.9
FY2021(estimate)	39.6	21.4	10.3	6.6	3.7	3.5	85.1	536.9
FY2022(forecast)	40.3	21.7	10.6	7.0	3.7	3.6	86.9	-
● Real growth rate (%)								
FY2019(confirmed)	-1.5	-0.2	0.2	0.2	-0.8	-0.3	-0.7	-0.9
FY2020(estimate)	-3.5	-4.0	-3.1	-3.7	-4.8	-6.5	-3.8	-4.6
FY2021(estimate)	0.8	0.8	0.0	-2.2	-0.1	0.4	0.4	2.3
FY2022(forecast)	2.0	1.6	2.2	5.7	0.9	3.5	2.2	-
● Contribution to the real growth rate								
FY2019(confirmed)	-0.7	0.0	0.0	0.0	0.0	0.0	-0.7	-
FY2020(estimate)	-1.6	-1.0	-0.4	-0.3	-0.2	-0.3	-3.8	-
FY2021(estimate)	0.4	0.2	0.0	-0.2	0.0	0.0	0.4	-
FY2022(forecast)	0.9	0.4	0.3	0.4	0.0	0.1	2.2	-

Note: MAPE stands for Mean Absolute Percentage Error.

Source: APIR "Kansai Economic Insight Quarterly" No. 61

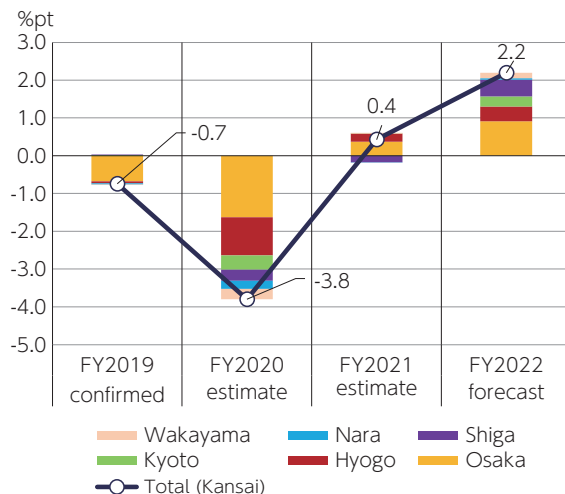


Figure 2-2-14 Kansai's contribution to real growth by prefecture

Source: APIR "Kansai Economic Insight Quarterly" No. 61

economy (calculated by summing the real GRPs of its prefectures) during the Global Financial Crisis was -3.1% in 2008 and -4.2% in 2009. Therefore, the impact of COVID-19 in FY 2020 is comparable to that of the Global Financial Crisis in a single year.

A glance at the contribution of each prefecture to the overall Kansai economy (Figure 2-2-14) shows that in FY 2020, all prefectures in the Kansai region suffered a significant setback due to the impact of COVID-19. In FY 2020, Osaka and Hyogo prefectures made a large negative contribution, while other prefectures experienced a deterioration comparable to the once seen during the Global Financial Crisis in 2008-2009. In FY 2022, all prefectures are expected to see positive growth and enter a phase of full-fledged recovery centered on Osaka Prefecture.

4. The risk of economic slowdown in China and its impact on the Kansai economy

(1) COVID-19 infection situation in China

The Chinese government has been implementing a policy to thoroughly suppress the spread of COVID-19, the so-called "zero-COVID policy," following the urban lockdown of Wuhan City in January 2020. As Figure 2-2-15 shows, the policy was initially successful, and the increase in the number of infections

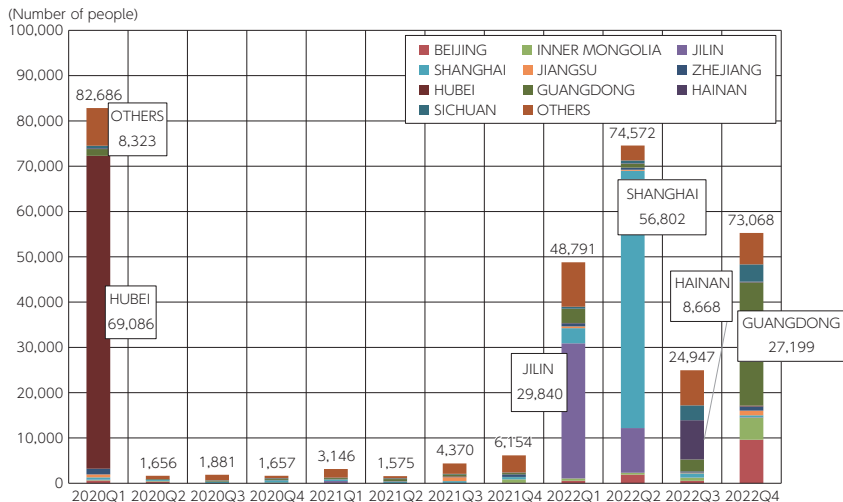


Figure 2-2-15 Number of new positives in China

Note: Jan-Mar 2020 to Oct-Dec 2022; Oct-Dec 2022 figures are as of Nov 24. Does not include asymptotically infected patients.
 Source: Prepared by the author from CEIC.

slowed sharply after April 2020 and remained low until 2021. However, with the emergence of the Omicron strain in 2022, the number of infections started increasing rapidly. A quarterly review of the number of infections by region shows a significant increase in the Jilin Province 2022 Q1 and in Shanghai and other cities in 2022 Q2. In response, lockdowns were imposed, and the curfews and factory shutdowns that resulted brought about a significant slowdown in China’s real GDP growth rate, as discussed below.

(2) The Zero-COVID policy and growth slowdown

The aforementioned zero-COVID policy has had a significant impact on production and consumption in affected areas. In March 2022, lockdowns were imposed in Changchun City in the Jilin Province, which is home to automotive-related companies and high-tech industry clusters, as well as in Shenzhen City in the Guangdong Province. In April, a lockdown was imposed in Shanghai, resulting in the shutdown of factory operations, which had a major impact on supply chains both in China and globally.

Table 2-2-4 shows the nominal GRP of each province and directly controlled city in China as well as their real GRP growth rates (YoY) for the January-September period of 2022 in descending order of economic size.

Table 2-2-4 Economic Scale and Real Growth Rates of Chinese Regions

Rank	Provinces and Municipalities	2021 Nominal GRP(billion yuan)	share of GDP	2022(Jan-Sep) Real GRP growth rate (%)
1	GUANGDONG	12,437.0	10.9	2.3
2	JIANGSU	11,636.4	10.2	2.3
3	SHANDONG	8,309.6	7.3	4.0
4	ZHEJIANG	7,351.6	6.5	3.1
5	HENAN	5,888.7	5.2	3.7
6	SICHUAN	5,385.1	4.7	1.5
7	HUBEI	5,001.3	4.4	4.7
8	FUJIAN	4,881.0	4.3	5.2
9	HUNAN	4,606.3	4.0	4.8
10	SHANGHAI	4,321.5	3.8	-1.4
11	ANHUI	4,295.9	3.8	3.3
12	HEBEI	4,039.1	3.6	3.7
13	BEIJING	4,027.0	3.5	0.8
14	SHAANXI	2,980.1	2.6	4.8
15	JIANGXI	2,962.0	2.6	5.0
16	CHONGQING	2,789.4	2.5	3.1
17	LIAONING	2,758.4	2.4	2.1
18	YUNNAN	2,714.7	2.4	3.8
19	GUANGXI	2,474.1	2.2	3.1
20	SHANXI	2,259.0	2.0	5.3
21	INNER MONGOLIA	2,051.4	1.8	5.0
22	GUIZHOU	1,958.6	1.7	2.8
23	XINJIANG	1,598.4	1.4	3.9
24	TIANJIN	1,569.5	1.4	1.0
25	HEILONGJIANG	1,487.9	1.3	2.9
26	JILIN	1,323.6	1.2	-1.6
27	GANSU	1,024.3	0.9	4.1
28	HAINAN	647.5	0.6	-0.5
29	NINGXIA	452.2	0.4	4.9
30	QINGHAI	334.7	0.3	2.6
31	TIBET	208.0	0.2	2.0

Note: Real GRP growth rates are for January-September 2022 (YoY).

Source: Prepared by the author from CEIC.

Notably, Shanghai (-1.4%) and the Jilin Province (-1.6%), where lockdowns were particularly severe, experienced negative growth. In addition, in provinces with large economies, such as Guangdong (+2.3%) and Jiangsu (+2.3%), where lockdowns were imposed, the GDP growth rate was lower than that of China as a whole (+3.0%).

In 2022 Q4, the COVID-19 infection situation remained unsettled, with

lockdowns in major cities such as Chengdu in the Sichuan Province, Chongqing, and Guangzhou in the Guangdong Province. As a result, there are concerns that China's GDP growth rate might deteriorate further.

(3) The impact of China's economic slowdown on the Kansai economy

To analyze the impact of the deterioration in the Chinese economy caused by China's zero-COVID policy on the Kansai economy, first we estimate an export function. This helps us assess the impact of the Chinese economy on the exports of the Kansai and Japan. The data used are Chinese real GDP and real export indices (on an annual basis) for Kansai and the nation as a whole. The functional form of the export function to be estimated is as follows:

$$\log(kan_ex) = const + a \log(ch_gdp)$$

Note: kan_ex indicates Kansai real export index and ch_gdp indicates Chinese real GDP.

According to our estimates, the income elasticity of Chinese real GDP with respect to Kansai and national exports is 0.462 for Kansai and 0.304 for Japan. This means that a 1% change in China's GDP would result in a 0.462% and 0.304% change in Kansai and Japan's exports, respectively. The results suggest that the impact of changes in the Chinese economy is greater in the Kansai region than in the nation as a whole.

Next, based on these estimates, we conducted a simulation using the APIR-developed Kansai Economic Forecasting Model to see how the slowdown in the Chinese economy would affect the entire Kansai economy through exports. Assuming that China's real GDP declines by -1%, real exports from Kansai would decline by -0.462%. This -0.462% decrease in Kansai's real exports would reduce Kansai's real GRP by -0.12% in FY 2022, -0.13% in FY 2023, and -0.13% in FY 2024. In monetary terms, the decrease is between 94.3 billion yen and 108.2 billion yen. The impact on private-sector facilities is particularly large, ranging from -0.33% to -0.36%. Simulation results are shown in [Table 2-2-5](#).

Table 2-2-5 Simulation results

	FY	2022	2023	2024
Private final consumption expenditure (JPY billion)				
A. base		47,424	47,951	48,470
B. simulation		47,420	47,945	48,463
	divergence(B-A)	-4	-7	-8
	deviation ratio(%)	-0.01	-0.01	-0.02
Private non-residential capital investment(JPY billion)				
A. base		14,240	14,533	15,006
B. simulation		14,189	14,480	14,956
	divergence(B-A)	-51	-53	-50
	deviation ratio(%)	-0.36	-0.36	-0.33
Exports(JPY billion)				
A. base		30,018	30,069	31,063
B. simulation		29,880	29,930	30,919
	divergence(B-A)	-139	-139	-143
	deviation ratio(%)	-0.46	-0.46	-0.46
Imports(JPY billion)				
A. base		27,238	27,151	28,074
B. simulation		27,130	27,027	27,944
	divergence(B-A)	-109	-124	-130
	deviation ratio(%)	-0.40	-0.46	-0.46
Real GRP(JPY billion)				
A. base		87,446	88,430	89,694
B. simulation		87,344	88,316	89,579
	divergence(B-A)	-102.4	-113.6	-115.4
	deviation ratio(%)	-0.12	-0.13	-0.13
Real GRP growth rate(%)				
A. base		1.8	1.1	1.4
B. simulation		1.7	1.1	1.4
	deviation ratio(%)	-0.12	-0.01	0.00

Source: APIR "Kansai Economic Insight Quarterly" No. 61