

## Column A

## The Impact of the Decelerating Chinese Economy on the Economies of Kansai Prefectures: A Focus on Declining Exports

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## 1. Introduction

Column A explores the impact of the Chinese economic slowdown on the Kansai economy.

The Chinese economy maintained a steady GDP growth rate of around +6% until 2019, but this rapidly slowed down to +2.3% in 2020 due to the COVID-19 pandemic. In 2023, although economic activity normalized with the end of the Zero-COVID policy in China, growth remained below pre-COVID-19 pandemic levels, as shown in [Figure 2-CA-1](#).

As China's domestic demand trends, we found the total retail value of social consumption goods rebounding to +12.4% year on year (YoY) in 2021, before dropping again by -0.8% in 2022. In 2023, it grew by +7.8%, though this is still lower than pre-COVID-19 pandemic growth rate of +8.1%, as shown in [Figure 2-CA-2](#). The lower domestic demand in China will lead to reduced Chinese imports and, in turn, could reduce Japanese exports.

Against this background, China's share of Japan's exports grew

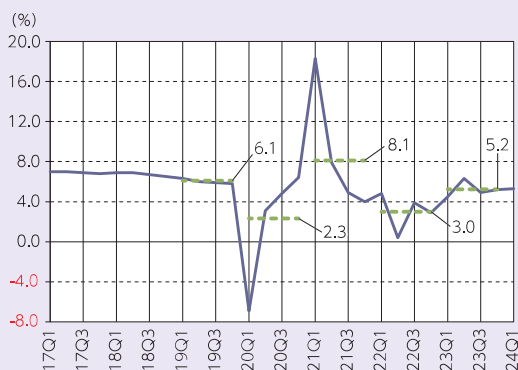
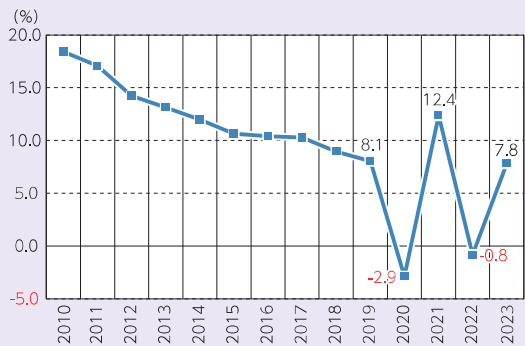


Figure 2-CA-1

Changes in China's real GDP growth rate

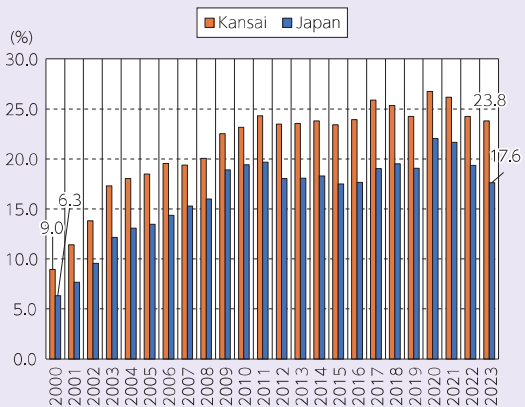
Note: The solid line shows QoQ growth, and the broken line shows YoY growth.

Source: Prepared by the author from the National Bureau of Statistics of China and the CEIC database.



**Figure 2-CA-2** Changes in total retail sales of consumer goods

Source: Prepared by the author from the National Bureau of Statistics of China and the CEIC database.



**Figure 2-CA-3** Comparison of export share to China: Japan vs. Kansai (2000-23)

Source: Prepared by the author from the Ministry of Finance's 'Trade Statistics.'

from 6.3% in 2000 to 17.6% in 2023, while the share of the Kansai region increased from 9.0% to 23.8% over the same period. During this time, Kansai's share of exports to China has averaged around +6 percentage points above the national share, as shown in [Figure 2-CA-3](#).

After joining the World Trade Organization (WTO) in 2001, China surpassed the U.S. and became the largest export destination for Japan

since 2004. Since then, China has continued to be a key driver of Japan's exports. In particular, as mentioned above, the Kansai economy enjoys a large share of exports to China, and has been strongly benefiting from the high growth of the Chinese economy and increasing the value of its exports to China. On the other hand, the economic slowdown in China directly impacts Kansai's exports to China.

The following section focuses on changes in trade with China since 2000, including those in the trade structure, and begins by identifying the major products responsible for the decline in exports from the Kansai region to China in 2023. We then analyze the impact of changes in Kansai exports to China on the Kansai economy using the APIR-Kansai Interregional Input-Output Table.

## 2. Kansai's Trade with China

### (1) Changes in Kansai's Trade with China and the Structure of Trade

Figure 2-CA-4 shows the change in the value of Kansai's exports to China using a line graph and the share of the principal commodities

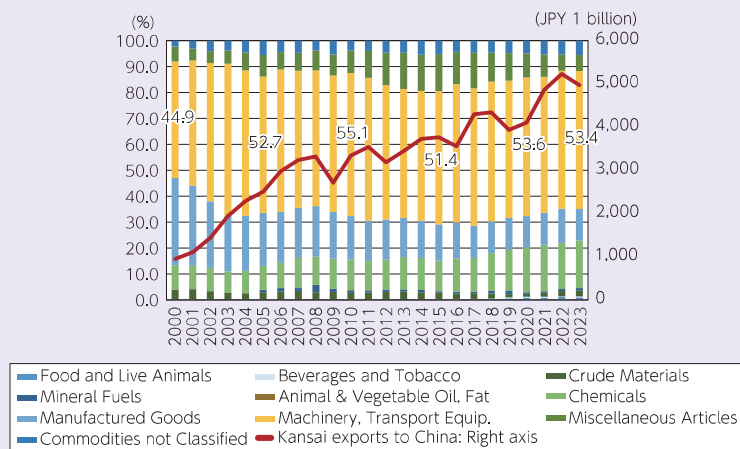


Figure 2-CA-4 Changes in Kansai's exports to China and its share (2000-23)

Source: Prepared by the author from the Ministry of Finance's 'Trade Statistics'.

within one-digit principal commodity code (P.C. code)<sup>1)</sup> from 2000 to 2023 using a bar chart. The value of Kansai's exports to China increased nearly fivefold, from JPY 943.4 billion in 2000 to JPY 4,971.8 billion in 2023, with an average annual growth rate of +7.5%. The share of "Machinery, Transport Equip." has always been the largest during this period.

Next, we compared the share of Kansai's exports to China between 2000 and 2023. The share of "Machinery, Transport Equip." increased from 44.9% in 2000 to 53.4% in 2023, an increase of +8.5 percentage points. The share of "Chemicals" increased by +9.1 percentage points from 9.3% to 18.4%. On the other hand, the share of "Manufactured Goods" decreased by -21.6 percentage points from 33.8% to 12.2%.

As indicated by the export share, the structure of exports to China is denominated by "Machinery, Transport Equip.," which accounted for 53.4% in 2023, as shown in Table 2-CA-1.

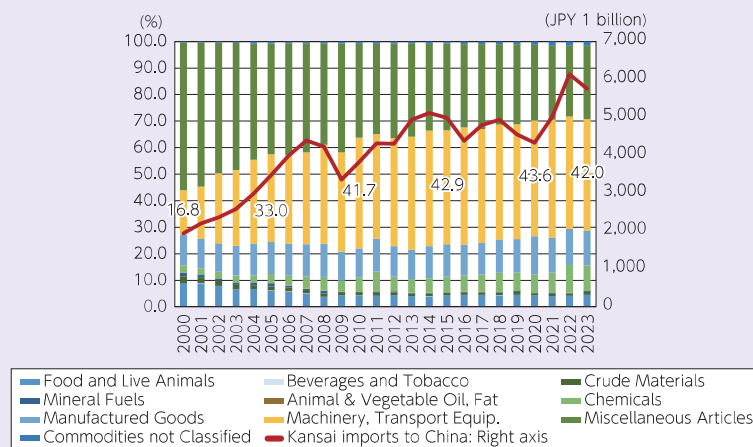
Figure 2-CA-5 shows the changes in the value of Kansai's imports from China and the share of principal commodities within one-digit P.C. code from 2000 to 2023. Kansai's imports from China increased from JPY 193.6 billion in 2000 to JPY 575.6 billion in 2023, an increase of nearly

**Table 2-CA-1** Changes in Kansai's exports to China by product (2000-23)  
(Unit: %, %pt)

Principal Commodity Code	Articles	Share: 2000	Share: 2023	Difference in share: 2023-2000
0	Food and Live Animals	0.2	1.0	0.8
1	Beverages and Tobacco	0.0	0.4	0.4
2	Crude Materials	3.5	2.4	-1.1
3	Mineral Fuels	0.2	0.9	0.6
4	Animal & Vegetable Oil, Fat	0.0	0.0	-0.0
5	<b>Chemicals</b>	<b>9.3</b>	<b>18.4</b>	<b>9.1</b>
6	<b>Manufactured Goods</b>	<b>33.8</b>	<b>12.2</b>	<b>-21.6</b>
7	<b>Machinery, Transport Equip.</b>	<b>44.9</b>	<b>53.4</b>	<b>8.5</b>
8	Miscellaneous Articles	5.8	6.2	0.4
9	Commodities not Classified	2.3	5.6	3.3
<b>Kansai exports to China</b>		<b>100.0</b>	<b>100.0</b>	

Source: Prepared by the author from the Ministry of Finance's "Trade Statistics".

1) The principal commodity code is a code that indicates the type and characteristics of a trade item based on the Trade Statistics item number.



**Figure 2-CA-5** Changes in Kansai's imports to China and its share (2000-23)

Source: Prepared by the author from the Ministry of Finance's 'Trade Statistics'.

three times, and the average annual growth rate during this period was +4.9%. The share of "Machinery, Transport Equip." increased, while that of "Miscellaneous Articles" decreased.

Similarly, we compared the share of Kansai's imports from China between 2000 and 2023. The share of "Machinery, Transport Equip." increased from 16.8% in 2000 to 42.0% in 2023, an increase of +25.2 percentage points. The share of "Manufactured Goods" increased only +1.6 percentage points from 11.6% to 13.2%. On the other hand, "Miscellaneous Articles" decreased by -28.0 percentage points from 55.6% to 27.6%.

The top three principal commodities within one-digit P.C. code were, in order, "Miscellaneous Articles," "Machinery, Transport Equip.," and "Manufactured Goods" in 2000. By 2023, this order had shifted to "Machinery, Transport Equip.," "Miscellaneous Articles," and "Manufactured Goods." Thus, Kansai's major imports from China are shifting from "Miscellaneous Articles" such as clothing to "Machinery, Transport Equip." such as Machinery, as shown in [Table 2-CA-2](#).

Table 2-CA-2

Changes in Kansai's imports to China by product (2000-23)  
(Unit: %, %pt)

Principal Commodity Code	Articles	Share: 2000	Share: 2023	Difference in share: 2023-2000
0	Food and Live Animals	9.0	4.6	-4.4
1	Beverages and Tobacco	0.1	0.0	-0.0
2	Crude Materials	2.5	1.0	-1.5
3	Mineral Fuels	1.4	0.4	-1.0
4	Animal & Vegetable Oil, Fat	0.0	0.0	0.0
5	Chemicals	2.7	9.5	6.9
6	<b>Manufactured Goods</b>	<b>11.6</b>	<b>13.2</b>	<b>1.6</b>
7	<b>Machinery, Transport Equip.</b>	<b>16.8</b>	<b>42.0</b>	<b>25.2</b>
8	<b>Miscellaneous Articles</b>	<b>55.6</b>	<b>27.6</b>	<b>-28.0</b>
9	Commodities not Classified	0.4	1.6	1.3
<b>Kansai imports to China</b>		<b>100.0</b>	<b>100.0</b>	

Source: Prepared by the author from the Ministry of Finance's 'Trade Statistics'.

## (2) Items Contributing to the Decrease in Exports to China

As we have seen, Kansai's exports to and imports from China declined from 2022 to 2023. Here, we focus only on Kansai's exports to China, and check the principal commodities within three-digit P.C. code that contributed to the decrease in exports in 2023.

The top three exports within one-digit P.C. code were, in order, "Machinery, Transport Equip.," which accounts for 53.4%; "Chemicals," which accounts for 18.4%; and "Manufactured Goods," which accounts for 12.2%. They were also the top three principal commodities that contributed significantly to the decrease in exports in 2023. Specifically, "Machinery, Transport Equip.," "Manufactured Goods," and "Chemicals" respectively decreased by -JPY 140.3 billion, -JPY 87.5 billion, and -JPY 15.6 billion, YoY, pushing down overall exports in 2023, as shown in Table 2-CA-3.

Next, we checked the market share breakdown of the top three principal commodities by three-digit P.C. code: "Machinery, Transport Equip.," "Chemicals," and "Manufactured Goods," to identify which commodities are expected to see the largest decrease in export value from 2022.

"Machinery, Transport Equip." includes "Machinery (701),"

Table 2-CA-3

Changes in Kansai's exports to China by product (2023)  
(Unit: %, JPY 1 million, %pt)

Principal Commodity Code	Articles	Share: 2023	YoY	Contribution
0	Food and Live Animals	1.0	-7,974	-0.2
1	Beverages and Tobacco	0.4	1,055	0.0
2	Crude Materials	2.4	9,750	0.2
3	Mineral Fuels	0.9	6,211	0.1
4	Animal & Vegetable Oil, Fat	0.0	-92	-0.0
<b>5</b>	<b>Chemicals</b>	<b>18.4</b>	<b>-15,587</b>	<b>-0.3</b>
<b>6</b>	<b>Manufactured Goods</b>	<b>12.2</b>	<b>-87,464</b>	<b>-1.7</b>
609	Non-metallic Mineral Ware	1.3	-12,011	-0.2
611	Iron and Steel Products	2.8	-8,945	-0.2
613	Non-ferrous Metals	2.7	-58,538	-1.1
<b>7</b>	<b>Machinery, Transport Equip.</b>	<b>53.4</b>	<b>-140,256</b>	<b>-2.7</b>
701	Machinery	21.3	117,500	2.2
703	Electrical Machinery	31.3	-261,233	-5.0
705	Transport Equipment	0.8	3,477	0.1
8	Miscellaneous Articles	6.2	-11,990	-0.2
9	Commodities not Classified	5.6	-11,601	-0.2
<b>Total</b>		<b>100.0</b>	<b>-259,003</b>	<b>-5.0</b>

Source: Prepared by the author from the Ministry of Finance's 'Trade Statistics'.

"Electrical Machinery (703)," and "Transport Equipment (705)." Of these, "Electrical Machinery" (-JPY 261.2 billion YoY) contributed the most to the decrease in exports (-5.0 percentage points).

"Manufactured Goods" includes "Leather, Dressed Fur Skins (601)," "Rubber Manufactured (603)," "Wood & Cork Manufactured (605)," "Paper & Paper Manufactured (606)," "Textile Yarn, Fabrics (607)," "Non-metallic Mineral Ware (609)," "Iron and Steel Products (611)," "Non-ferrous Metals (613)," "Manufactures of Metals (615)," etc. Of these, "Non-ferrous Metals" (-JPY 58.5 billion YoY) contributed to the decrease in exports (-1.1 percentage point).

"Chemicals" includes "Chemical Elements, Compound (501)," "Mineral Tar, Crude Chemical (503)," "Dyeing Tanning, Colouring (505)," "Medical Products (507)," "Essential Oils, Perfume (509)," "Fertilizers (511)," "Explosive & Pyrotecnic (513)," "Plastic Materials (515)," and "Chemical Materials N.E.S. (517)". Of these, "Essential Oils,

Perfume” (-JPY 19.4 billion YoY) contributed to the decrease in exports (-0.4 percentage points).

The Kansai region has served as a key supply center for parts in the global supply chain focused on China. Thus, a decline in exports from Kansai to China is expected to have a significant impact on the production across various industries in the Kansai region. In the following sections, we will analyze the impact on different prefectures and industries within the Kansai region using the APIR-Kansai inter-regional input-output table.

### 3. An Analysis of China’s Impact on the Economies of Kansai Prefectures Based on the Input-Output Table

#### (1) Trends in the Exports of Major Products in the Input-Output Table

First, we examined how the changes in trade with China have affected the Kansai economy.

Among the top three categories in Table 2-CA-3, “Machinery, Transport Equip.,” “Chemicals,” and “Manufactured Goods,” the five-digit P.C. code for principal commodities are divided into those with a decrease (minus) in exports to China, those with an increase (plus), and the total of these (net total). The total of negative items is -JPY 563.6 billion, and the total of positive items is +JPY 320.3 billion, resulting in a net total of -JPY 243.3 billion as shown in Table 2-CA-4.

From this data, we used the APIR-Kansai inter-regional input-output table to calculate economic ripple effects by 24 sectors and the Kansai region within 10 prefectures, taking into account commercial margins,

Table 2-CA-4 YoY change in Kansai exports to China in 2023 (top 3 share)

Unit: JPY 1 million	
Subtotal: minus	-563,645
Subtotal: plus	320,338
Net total	-243,307

Source: Prepared by the author from the Ministry of Finance’s ‘Trade Statistics’.



freight rates, etc.<sup>2)</sup> The “Production machinery” (+JPY 124.5 billion), and “Plastic products and rubber products” (+JPY 14.3 billion) sectors had positive growth of net total. The “Electronic components” (-JPY 138.2 billion), and “Non-ferrous metals” (-JPY 51.1 billion) had negative growth, as shown in Figure 2-CA-6. With the exception of Shiga Prefecture (+JPY 15.1 billion), all other prefectures experienced negative values, with particularly large declines in Mie Prefecture (-JPY 118.7 billion), Hyogo Prefecture (-JPY 61.2 billion), and Osaka Prefecture (-JPY 23.3 billion), as shown in Figure 2-CA-7.

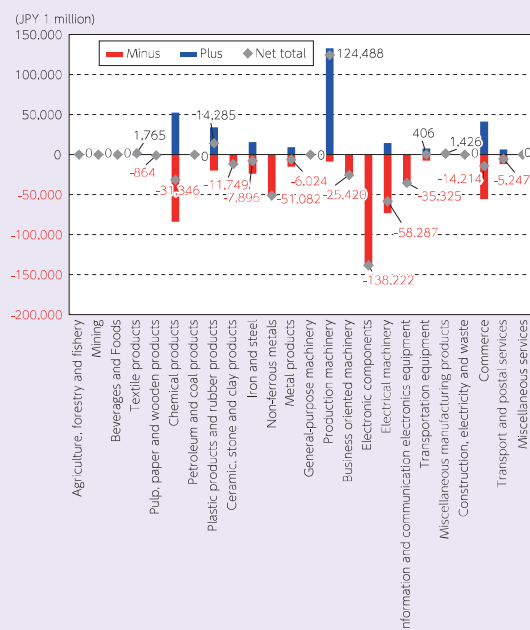


Figure 2-CA-6

Changes in export value by industry corresponding to the inter-industry relations table

Source: Prepared by the author.

- 2) The export values from Trade Statistics are converted to producer price assessments. Specifically, we first obtain the commercial margin rate and freight rate for each export cell (export value by sector) from the national input-output table. Next, the commercial margins and freight rates are multiplied by the export value in the Trade Statistics to estimate the commercial margins and freight rates. Finally, these margins and freight rates are stripped from the original cells and assigned to the commerce and transportation sectors.

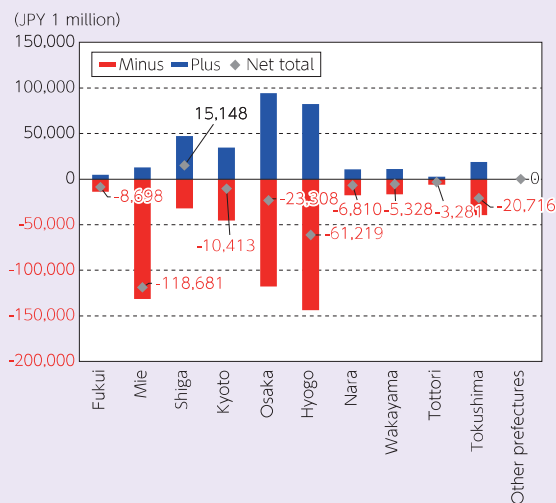


Figure 2-CA-7

Changes in export value by prefecture and industry

Source: Prepared by the author.

## (2) Economic Ripple Effects

Second, we estimated the economic ripple effects resulting from changes in the value of exports for each industry and prefecture. The economic ripple effects are calculated for each of the industries that had positive or negative export values in the previous year, and the results are also presented on a net total basis, adding up these effects. In terms of induced production amount, the negative effect was -JPY 1,071.3 billion and the positive effect was +JPY 608.2 billion, for a net total effect of -JPY 463.1 billion. In terms of induced value added, the negative effect was -JPY 435.8 billion, while the positive effect was +JPY 274.4 billion, for a net total effect of -JPY 161.3 billion, as shown in Table 2-CA-5.

By industry, most of the industries show a negative net total effect. The industries with particularly large negative effects are “Electronic components” (-JPY 184.2 billion), “Non-ferrous metals” (-JPY 79.2 billion), and “Chemical products” (-JPY 55.7 billion). On the other hand, only four industries had positive effects: “Production machinery” (+JPY 142.5 billion), “Plastic materials and rubber products” (+JPY 9.7 billion),

Table 2-CA-5

YoY change in Kansai exports to China in 2023  
(top 3 share of one-digit P.C. code)

Unit: JPY 1 million

	Minus	Plus	Net total
Production	-1,071,275	608,194	-463,081
Value added	-435,778	274,432	-161,346

Source: Prepared by the author.

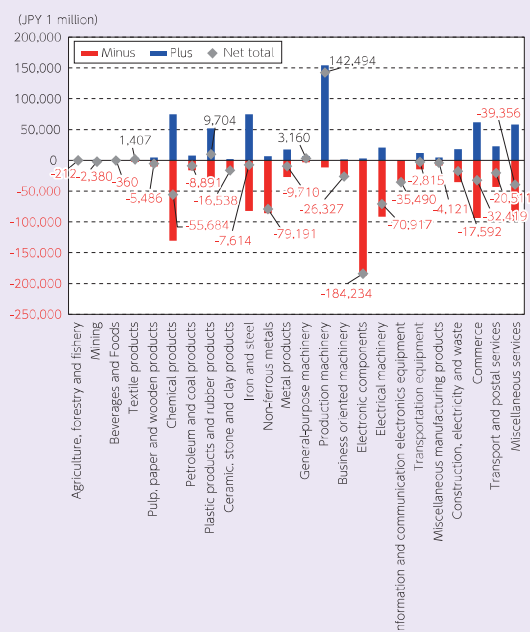


Figure 2-CA-8

Induced production amount by industry

Source: Prepared by the author.

“General-purpose machinery” (+JPY 3.2 billion), and “Textile products” (+JPY 1.4 billion), as shown in Figure 2-CA-8.

By prefecture, only Shiga Prefecture had a positive net effect (+JPY 10.8 billion). All other prefectures had a negative net effect, with particularly large negative effects in Mie Prefecture (-JPY 160.1 billion), other

prefectures<sup>3)</sup> (-JPY 104.4 billion), and Hyogo Prefecture (-JPY 80.3 billion), as shown in Figure 2-CA-9.

When examining the production ripple effects of the export change by industry, “Miscellaneous services,” which had no effect on the change in export value (Figure 2-CA-6), had a large negative impact on induced production (Figure 2-CA-8). Therein, services related to the manufacturing industry had a notably large negative effect. On the other hand, “General-purpose machinery” had a positive effect on induced production, likely due to the fact that “General-purpose machinery” is an upstream industry for “Production machinery” and “Plastic products and rubber products.”

The trend by prefecture was almost the same as that of the change in exports, but even in Shiga Prefecture, where the change in exports was +JPY 15.1 billion, the increase in the production ripple effect was only +JPY 10.8 billion, which was smaller than the increase in the export value. The negative effect of many industries on exports to China has

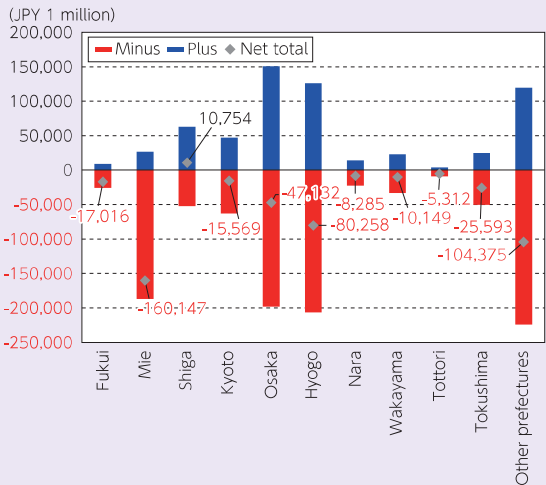


Figure 2-CA-9 Induced production amount by prefecture

Source: Prepared by the author.

3) Other prefectures refer to prefectures outside the Kansai region.

reduced the amount of economic ripple effects. The other prefectures also show a large negative value due to the large transactions with the prefectures in the Kansai region.

Thus, it can be concluded that the impact of China's economic slowdown has cast a large shadow over various regions and industries other than manufacturing.

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### (3) Summary

We have examined the changes in trade with China in 2023 and their impact on the Kansai economy by examining data from the APIR-Kansai Interregional Input-Output Table, focusing on both industry and regional perspectives. By industry, the change in exports to China was largely positive for "Production machinery," while by region, exports were negative in all prefectures except Shiga Prefecture. Mie Prefecture, in particular, is considered to have experienced a large net negative value because of its large transactions in electronic parts, etc., which had a large negative value.

On the other hand, when examining the economic ripple effects, the net total of "Miscellaneous services," which had no change in the value of exports, is significantly negative. This indicates that the service industry related to the manufacturing industry, such as services to business establishments, has been greatly affected by the economic ripple effect. Although we did not consider the change in exports to China in other prefectures, the change in exports in the Kansai region spilled over to other prefectures, resulting in negative economic ripple effects in other prefectures as well.