Chapter 3

Exploring Kansai's Profitable Industrial Structure

In "Kansai and the Asia Pacific Economic Outlook 2022-23," Chapter 4, Section 1, the lack of investment was identified as the cause of the subsidence of the Kansai economy[1]. The report also pointed out that, now that the environment for infrastructure facilities is being prepared for the economic turnaround of the Kansai economy, the challenge is how to attract and foster profitable industries. In this chapter, we first reviewed the industrial structure of the Kansai economy using basic data, identify growth industries, and examine the future industrial structure. The Osaka-Kansai Expo will be an extremely important milestone in the development of industries that will become new strengths of the Kansai region. The development of Chapter 3 is as follows.

In Section 2, based on the analysis in Section 1, strategies for attracting investment and human resources are discussed, and industries that will become new strengths of the Kansai region are considered. In doing so, it selects fields that will solve global issues from a long-term perspective and combines them with the DX business perspective to examine which industries will become the new strengths of the Kansai region.

In Section 3, the current state of the labor market in Kansai is reviewed, issues are identified, and future responses to labor supply constraints are discussed.

1) This point is analyzed in detail in Asia Pacific Institute of Research (2022) and Inada (2022).

Section 1
Characteristics of Kansai's Industrial Structure: The Relationship between Value-Added Share and Productivity

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1. Basic data

The basic data used in this analysis is from the "2016 Economic Census for Business Activity" conducted by the Statistics Bureau of the Ministry of Internal Affairs and Communications. Specifically, the value added and the number of business employees are sorted by industry, and the value added per worker is calculated as an indicator of a "profitable industry." Using this index, we compare indices in Southern Kanto, Tokai, Kansai, and Kyushu in 2015[2] and clarify the characteristics of the industrial structure[3].

The "Economic Census for Business Activity" is a survey conducted every five years covering all establishments and companies located in Japan in order to grasp economic activities in all industrial fields at the same point in time. The survey covers 19 major, 97 medium, 598 minor, and 742 suvsectors of industries. It has a wider scope than Prefectural Accounts, which analyze regional value added, and has the advantage of providing detailed information on the number of employees, sales, and value added by industry[4]. The definitions of the three indicators in the Economic Census of Activity are shown in Table 3-1-1. Using this basic data, let's check the economic position of each region and examine its characteristics.

2) The regional divisions here are as follows.
Southern Kanto: Saitama, Chiba, Tokyo, Kanagawa; Tokai: Gifu, Shizuoka, Aichi, Mie; Kansai: Osaka, Kyoto, Hyogo, Shiga, Nara, Wakayama, Fukui; Kyushu: Fukuoka, Saga, Nagasaki, Kumamoto, Oita, Miyazaki, Kagoshima. The data for Kansai are based on the data for the seven prefectures.

3) The most recent Economic Census of Japan (2021 Census) was released on June 27, 2023, but at the time of writing this report, cross-sectional data was not available for this survey. Therefore, the analysis in Section 1 is based on the 2016 Census of Activity. However, for the manufacturing industry subcategories described below, a portion of the results of the 2021 Survey had already been published (in December 2022) and is used in this analysis.

4) In the "Economic Census - Activity Survey, 2016," accounting items such as the value of manufactured goods shipped, value added, and total investment are actual results for the period from January to December 2015. The number of establishments and employees are as of June 1, 2016.

Table 3-1-1 Economic Census for Business Activity

Definition of Business Establishments
A unit for each location where economic activity takes place, which in principle has the following requirements 1. An establishment is a unit of place which occupies a certain space(1 plot) and in which business activities are performed under a single management agency. 2. having employees and facilities to produce, sell and provide services on a continuous basis
Definition of Employee
"Persons engaged" refers to all those who belong to the establishments and work. Therefore, persons engaged include employees loaned or dispatched to the separately operated establishments such as other companies. Conversely, loaned or dispatched employees from the separately operated establishments such as other companies, who do not receive their wage/salary (including wages in kind) from the establishments concerned, are not included in persons engaged, even if they work at the establishments. However, family workers working at establishments of individual proprietorships are regarded as persons engaged, even if they do not receive any wage/salary.
Definition of value added
Value added = sales value - total cost + total wages and salaries + taxes and public imposition Total cost = cost of goods sold + selling cost and administrative expenses This survey does not include some of the gross domestic product items included in national accounts of Japan, mainly: Consumption of fixed capital, employer's share of social insurance premiums, imputed rent for owner-occupied homes, research and development costs, added value for farmers, foresters and fishermen, public enterprises, and government service producers

Source: Ministry of Internal Affairs and Communications, Economic Census for Business Activity.

2. Industrial structure of Kansai: analysis based on economic census

(1) Comparison of industrial structure of each region

Reference Table 3-1-1 below shows the value added, the number of employee, and the value added per employee for the entire country, Southern Kanto, Tokai, Kansai, and Kyushu. The following analysis focuses on value added and the number of workers.

Figure 3-1-1 compares the national share of value added for all industries in the above regions. As the figure shows, the Southern Kanto region has the highest share at 35.0%, followed by Kansai at 16.4%, Tokai at 13.2%, and Kyushu at 7.9%. In order to clarify the industrial structure of each region, the top five industries in terms of value added by major industry category are listed below:[5)]

5) As shown in Reference Table 3-1-1, "Mining, quarrying, and gravel extraction" and "Electricity, gas, heat supply, and water supply" have by far the highest value added per capita. Since these are equipment industries with a high capital equipment ratio, the value added per worker is high. For this reason, Tables 3-1-2 and 3-1-3 below compare value added per worker excluding these two industries.

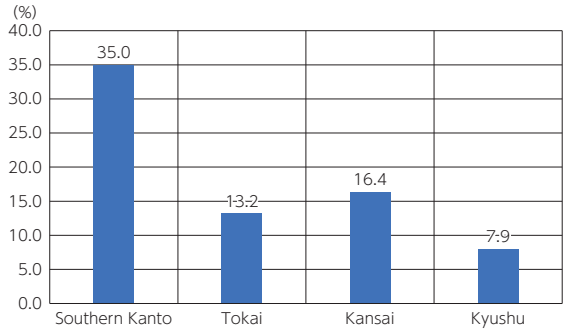

Figure 3-1-1 Comparison of national share of value added: 2015

Source: Ministry of Internal Affairs and Communications, Economic Census and Survey of Economic Activity, 2016

[Comparison of industrial structure of each region]

Figure 3-1-2 compares the shares of the top five industries in terms of value added in each region[6]. The top five industries in Japan in terms of value added are "Wholesale and Retail trade" at 21.2%, followed by "Manufacturing" at 20.3%, "Medical, health care and welfare" at 7.7%, "Construction" at 7.2%, and "Finance

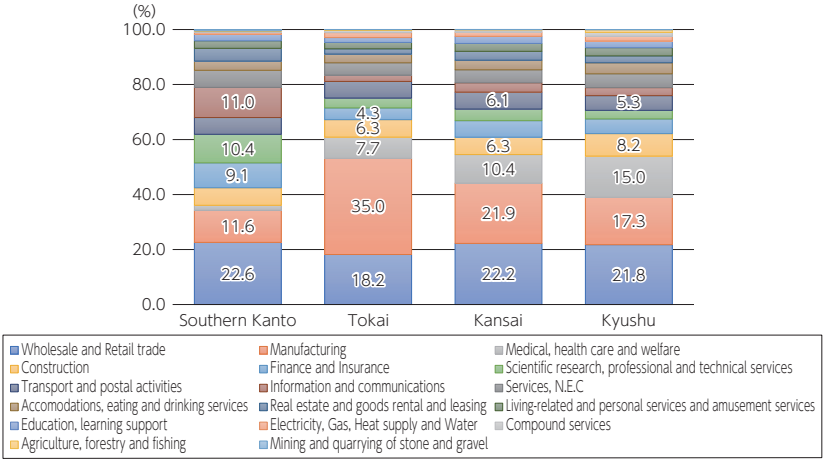

Figure 3-1-2 Share of value added by industry (top 5 industries) in each region: 2015

Source: Prepared by the author using the "2016 Economic Census - Activity Survey," Statistics Bureau, Ministry of Internal Affairs and Communications

6) See Reference Table below for detailed shares for all industries.

and Insurance" at 6.5%.

<Southern Kanto>
In the Southern Kanto region, the industry with the highest share of value added was "Wholesale and Retail trade" (22.6%), followed by "Manufacturing" (11.6%), "Information and communications" (11.0%), "Scientific research, professional and technical services" (10.4%) and "Finance and Insurance" (9.1%).

The above shows that the share of value added in the "Information and communications," "Scientific research, professional and technical services," and "Finance and Insurance" industries is higher in the Southern Kanto region than in other regions, with the "Information and communication" and "Finance and Insurance" industries in particular having overwhelmingly high shares.

<Tokai>
In Tokai, the industry with the highest share of value added was "Manufacturing" (35.0%), followed by "Wholesale and Retail trade" (18.2%), "Medical, health care and welfare" (7.7%), "Construction" (6.3%), and "Transportation and postal services" (6.0%).

As shown above, the share of value added in the "Manufacturing" sector is overwhelmingly higher in the Tokai region than in other regions.

<Kansai>
In Kansai, the industry with the highest share of value added was "Wholesale and Retail trade" (22.2%), followed by "Manufacturing" (21.9%), "Medical, health care and welfare" (10.4%), "Construction" (6.3%) and "Transportation and postal services" (6.1%).

The above shows that the share of value added in the "Wholesale and Retail trade" and "Manufacturing" sectors is high in Kansai, similar to that of the nation as a whole.

<Kyushu>
In Kyushu, the industry with the highest share of value added was "Wholesale and Retail trade" (21.8%), followed by "Manufacturing" (17.3%), "Medical, health care and welfare" (15.0%), "Construction" (8.2%), and "Transportation and postal services" (5.3%), Construction" (8.2%) and "Transportation and postal services" (5.3%) followed.

The industrial structure of Kyushu is similar to that of Kansai, but the share of "Medical, health care and welfare" is higher than that of other regions.

(2) Comparison of Industrial Structure in Kansai Prefectures

Following Section 1.2 (1), we compare and analyze the industrial structure of the prefectures in Kansai[7]. In this section, the definition of Kansai is based on seven prefectures for comparisons among regions. When comparisons are made among prefectures in the Kansai region, they are made on the basis of ten prefectures (Fukui, Mie, Shiga, Kyoto, Osaka, Hyogo, Nara, Wakayama, Tottori, and Tokushima prefectures), which are wider economic zones.

Before examining the characteristics of the industrial structure of the prefectures in the Kansai region, we must first look at the national market share. As Figure 3-1-3 shows, Osaka Prefecture has the highest share at 8.3%, followed by Hyogo Prefecture at 3.6%, Kyoto Prefecture at 1.7%, Mie Prefecture at 1.3%, Shiga Prefecture at 1.0%, Nara Prefecture at 0.6%, Fukui Prefecture at 0.6%, Wakayama Prefecture at 0.5%, Tokushima Prefecture at 0.5% and Tottori Prefecture at 0.3%.

[Comparison of Industrial Structure in Kansai Prefectures]

Figure 3-1-4 compares the shares of the top five value-added industries in each of the prefectures in the Kansai region.

As shown in the figure, the characteristics of the industrial structure of each prefecture indicate that the top three industries are "Wholesale and Retail trade," "Manufacturing," and "Medical, health care and welfare". Of these, Shiga (43.1%) and Mie (36.5%) prefectures have higher shares of the "Manufacturing"

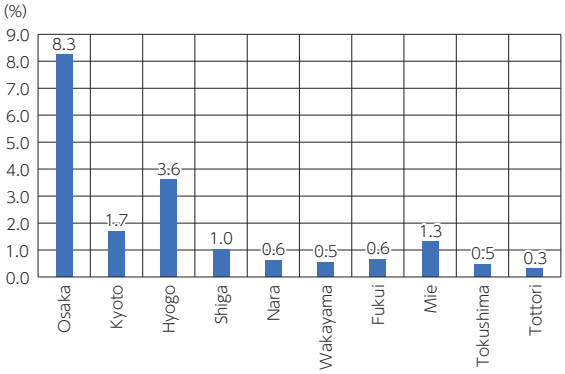

Figure 3-1-3 Comparison of national share of value added: Greater Kansai (2015)

Source: Prepared by the author using the "2016 Economic Census - Activity Survey," Statistics Bureau, Ministry of Internal Affairs and Communications

7) See Reference Table 3-1-2 below for detailed figures.

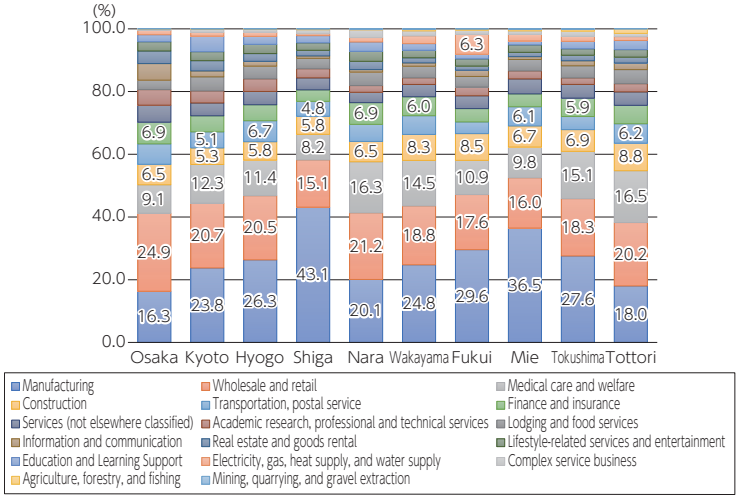

Figure 3-1-4 Comparison of Kansai prefectures' shares of value added by industry (top 5 industries): 2015

Source: Ministry of Internal Affairs and Communications, Economic Census and Survey of Economic Activity, 2016

industry than the average share in the Kansai region (21.9%), which is a characteristic of both prefectures. In the "Wholesale and Retail trade" category, Osaka Prefecture's share (24.9%) is higher than that of the other prefectures and above the Kansai average (22.2%). In the third category, "Medical, health care and welfare", the share is higher than the Kansai average (10.4%) in all prefectures except Osaka, Shiga, and Mie.

Looking at other industries, "Construction" occupies the fourth-largest share (6.3%) in Kansai. It exceeds the Kansai average in all prefectures except Hyogo (5.8%), Shiga (5.8%), and Kyoto (5.3%). Only Hyogo Prefecture (6.7%) has a higher percentage than the Kansai average (6.1%) in the "Transportation, postal service" category.

The share of "Finance and Insurance" was higher than the Kansai average (6.0%) in Osaka (6.9%) and Nara (6.9%) prefectures. In "Electricity, gas, heat supply, and water supply," Fukui Prefecture's share of 6.3% is overwhelmingly higher than that of the other prefectures (Kansai average: 1.5%). This is a characteristic of the energy supply structure in Kansai.

Section 1.3 calculates the value added per business employee (hereinafter referred to as "value added per capita") and analyzes the characteristics of each region and prefecture.

3. Analysis of profitable industries: comparison of value added per capita

(1) Comparison of regional value added per capita

This section compares the ranking of the share of value added (Figure 3-1-2) and that of value added per capita (Table 3-1-2) to see whether the industrial structure of each region has a "profitable structure."

As shown in Table 3-1-2, the top five industries nationwide in terms of value added per capita are "Finance and Insurance" at JPY12.27 million, followed by "Information and communications" at JPY9.76 million, "Scientific research, professional and technical services" at JPY9.63 million, "Real estate and goods rental and leasing" at JPY6.79 million and "Manufacturing" at JPY6.60 million.

In the Southern Kanto region, the industries with the highest value added per capita are "Finance and Insurance" (JPY15.68 million), "Scientific research, professional and technical services" (JPY14.16 million), "Information and communications" (JPY10.92 million), "Real estate and goods rental and leasing" (JPY8.85 million) and "Construction" (JPY7.04 million). The top three industries exceeded JPY10 million.

The top five industries in terms of value added share include "Finance and Insurance," "Scientific research, professional and technical services," and

Table 3-1-2 Comparison of the top five industries in terms of value added per capita:2015: Unit: JPY ten thousands

	Nationwide	Southern Kanto	Tokai	Kansai	Kyushu
1st	Finance and Insurance	Finance and Insurance	Finance and Insurance	Finance and Insurance	Finance and Insurance
	1,227	1,568	1,028	1,181	907
2nd	Information and communications	Scientific research, professional and technical services	Information and communications	Information and communications	Information and communications
	976	1,416	789	836	789
3rd	Scientific research, professional and technical services	Information and communications	Manufacturing	Scientific research, professional and technical services	Manufacturing
	963	1,092	730	743	565
4th	Real estate and goods rental and leasing	Real estate and goods rental and leasing	Scientific research, professional and technical services	Manufacturing	Scientific research, professional and technical services
	679	885	709	668	549
5th	Manufacturing	Construction	Transport and postal activities	Construction	Compound services
	660	704	609	637	539

Source: Ministry of Internal Affairs and Communications, Economic Census and Survey of Economic Activity, 2008

"Information and communications." These industries have by far the highest value added per capita compared to other regions. Therefore, it can be said that the Southern Kanto region has a profitable industrial structure.

In Tokai, the industries with the highest value added per capita are "Finance and Insurance" (JPY10.28 million), "Information and communications" (JPY7.89 million), "Manufacturing" (JPY7.3 million), "Scientific research, professional and technical services" (JPY7.09 million) and "Transportation and postal services" (JPY6.09 million).

Two of the top five industries in terms of value added share are included here: "Manufacturing" and "Transportation and postal services." In particular, the manufacturing industry is characterized by a higher share of value added and value added per capita than the other regions.

In Kansai, the industries with the highest value added per capita are "Finance and Insurance" (JPY11.81 million), "Information and communications" (JPY8.36 million), "Scientific research, professional and technical services" (JPY7.43 million), "Manufacturing" (JPY6.68 million) and "Construction" (JPY6.37 million).

Of the top five industries in terms of value added share, only two industries, "Manufacturing" and "Construction," have high value added per capita. "Wholesale and Retail trade" which has the largest share of value added, is not included in the top five industries in terms of value added per capita. This suggests that the Kansai region does not have a more profitable industrial structure than the Southern Kanto region.

Finally, in Kyushu, the industries with the highest per capita added value are "Finance and Insurance" (JPY9.07 million), "Information and communications" (JPY7.89 million), "Manufacturing" (JPY5.65 million), "Scientific research, professional and technical services" (JPY5.49 million) and "Compound services" (JPY5.39 million).

Of the top five industries in terms of value added share, only "Manufacturing" has a high value added per capita. As described below, Kyushu has by far the highest value added in the semiconductor industry on the basis of subsections of industries (see box).

Box Comparison of Semiconductor Related Industries in Kansai and Kyushu Based on Economic Census

As shown in Table 3-1-2, on major indutries basis, the value added per capita in Kyushu is lower than that in Kansai in almost all industries. However, the situation is different in the manufacturing industry related to

the semiconductor industry (on a subsectors basis). Figure 3-1-5 compares the electronic parts, devices and circuits manufacturing industry in Kansai and Kyushu[8]. As the figure shows, in Kyushu, the value added per capita of "integrated circuit manufacturing" and "semiconductor device manufacturing" is high, with many industries exceeding JPY10 million. On the other hand, in Kansai, "resistors, capacitors, transformers and composite parts" and "electronic circuit board manufacturing" are high. Thus, it can be said that Kyushu is mainly engaged in the manufacture of integrated circuits, while Kansai is strong in the manufacture of circuit boards on which the integrated circuits are mounted. By reviewing the semiconductor-related industries into subsectors, the characteristics of each region can be observed.

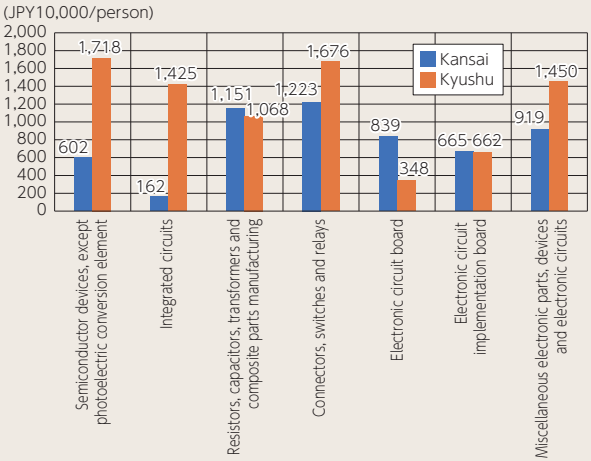

Figure 3-1-5 Comparison of value added per capita in the electronic parts, devices and circuits manufacturing industry subsector subcategory: Kansai vs. Kyushu

Source: Prepared by the author using the "2016 Economic Census - Activity Survey," Statistics Bureau, Ministry of Internal Affairs and Communications

(2) Comparison of value added per capita in Kansai prefectures

Next, let us examine the characteristics of the top five industries in each of the prefectures in the Kansai region in terms of value added per capita. See Figure 3-1-4 for the top five industries in terms of share of value added in each prefecture.

8) The regional classification of Kansai is based on Shiga, Kyoto, Osaka, Hyogo, Nara, and Wakayama prefectures.

As Table 3-1-3 shows, the per capita value added in the "Finance and Insurance" is the highest in each of the prefectures in the Kansai region. In particular, Osaka, Hyogo, and Nara Prefectures have more than JPY10 million, but only Osaka Prefecture has more than the national average (JPY12.27 million).

Table 3-1-3 Comparison of top 5 industries in value added per capita: 2015: in JPY million

	Kansai	Osaka	Kyoto	Hyogo	Shiga	Nara
1st	Finance and Insurance	Finance and Insurance	Finance and Insurance	Finance and Insurance	Finance and Insurance	Finance and Insurance
	1,145	1,319	945	1,134	886	1,177
2nd	Information and communications	Information and communications	Information and communications	Information and communications	Manufacturing	Compound services
	830	894	678	695	744	781
3rd	Scientific research, professional and technical services	Scientific research, professional and technical services	Manufacturing	Manufacturing	Compound services	Information and communications
	724	843	655	665	650	688
4th	Manufacturing	Construction	Scientific research, professional and technical services	Scientific research, professional and technical services	Scientific research, professional and technical services	Construction
	663	740	653	664	648	551
5th	Construction	Real estate and goods rental and leasing	Real estate and goods rental and leasing	Construction	Information and communications	Scientific research, professional and technical services
	619	717	589	578	590	534

	Wakayama	Fukui	Mie	Tokushima	Tottori
1st	Finance and Insurance	Finance and Insurance	Finance and Insurance	Finance and Insurance	Finance and Insurance
	944	868	858	981	809
2nd	Manufacturing	Information and communications	Information and communications	Information and communications	Information and communications
	644	707	667	844	696
3rd	Information and communications	Manufacturing	Manufacturing	Manufacturing	Manufacturing
	564	668	640	717	479
4th	Construction	Scientific research, professional and technical services	Scientific research, professional and technical services	Compound services	Transport and postal activities
	513	549	594	544	477
5th	Transport and postal activities	Compound services	Construction	Scientific research, professional and technical services	Scientific research, professional and technical services
	462	544	560	469	469

Source: Ministry of Internal Affairs and Communications, Economic Census and Survey of Economic Activity, 2016

Next, the per capita value added of the "Information and communications" is ranked second in Osaka, Kyoto, Hyogo, Fukui, Mie, Tokushima and Tottori prefectures, and third in Nara and Wakayama prefectures. However, the value added per capita is in the range of 5-8 million JPY, while that in the southern Kanto region is more than JPY10 million.

The value added per capita in the "Scientific research, professional and technical services "industry is ranked third in Osaka and Shiga Prefectures, and fourth in Kyoto, Hyogo, Fukui, and Mie Prefectures, in the range of JPY4-8 million, below the national average (JPY9.63 million).

Shiga and Wakayama prefectures rank second, respectively, in value added per capita in the "Manufacturing", while Kyoto, Hyogo, Fukui, Mie, Tokushima, and Tottori prefectures all rank third. Osaka and Nara prefectures are not included in the top five industries. Value added in Fukui, Shiga, Hyogo and Tokushima prefectures is higher than the national average (JPY6.6 million).

Finally, the per capita value added of the "construction industry" ranks fourth in Osaka, Nara, and Wakayama prefectures, and fifth in Hyogo, Shiga, and Mie prefectures.

(3) Analysis of value added per capita by manufacturing industry subsector basis

In order to discover the industries that are Kansai's strengths, more detailed data will be needed, not only on the major categories.

Figure 3-1-6 compares the share of value added in each region in the manufacturing medium classification. The share of the manufacturing industry in the Kansai region is 18.5% of the national total. The following industries were also classified into the manufacturing industry by above 20% share: Other Manufacturing (34.2%), Machinery and equipment for general trade (32.7%), Tanning and Leather Products and Furs (29.9%), Textile Industry (28.6%), Iron and steel products (27.1%), Metal products (22.0%), Machinery and equipment for production (21.5%), Chemical industry (20.9%), Beverage, Tobacco and Feed (20.6%), Printing and related industries (20.1%), and Electric machinery (19.9%).

Below, we focus on "Electrical machinery," "Machinery and equipment for general trade," "Machinery and equipment for production," and "Metal products," and examine the value added per capita for each of these industry subsectors.

First, let's look at the "Electrical machinery, equipment and supplies" (Table 3-1-4). The "Miscellaneous electrical machinery equipment and supplies" accounted for the largest share (47.3%), followed by the "Kitchen ware" (46.3%), "Power and distribution transformers, except electronic appliances

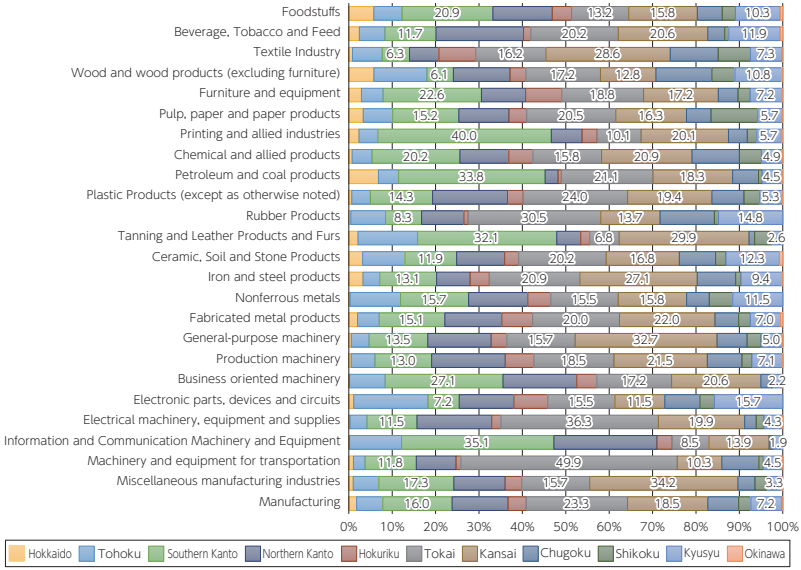

Figure 3-1-6 Comparison of value-added share of manufacturing medium classification: 2020

Source: Ministry of Internal Affairs and Communications Statistics Bureau, 2021 Economic Census for Business Activity

Table 3-1-4 Value added per capita by manufacturing industry subsector: Electrical machinery, equipment and supplies: Kansai: 2020

Industry medium classification	Industry subsectors	National share: %.	Value added per capita: 10,000 yen
Electrical machinery, equipment and supplies	Miscellaneous electrical machinery equipment and supplies	47.3	2,593
	Kitchen ware	46.3	2,320
	Power and distribution transformers, except electronic appliances transformers	38.0	1,464
	Industrial process controlling instruments	31.5	1,923
	Miscellaneous industrial electrical apparatus, including those for vehicles and vessels	29.0	976
	Generators, motors and other rotating electrical machinery	26.5	2,065
	Miscellaneous household electric appliances	25.8	1,296
	Home comfort	21.2	2,391
	Clothes treatment and cleaner	17.7	2,380

Source: Ministry of Internal Affairs and Communications Statistics Bureau, 2021 Economic Census for Business Activity

transformers" (38.0%), and "Industrial process controlling instruments" (31.5%). Half of the industries listed in the subsectors have a per-capita value-added of more than 20 million yen, far exceeding the average for the manufacturing industry in the Kansai region (6.63 million yen).

Next, let's look at the "General-purpose machinery"[9]. As shown in Table 3-1-5, the industries with particularly high shares are "Steam engines, turbines and water wheels, except marine engines" (65.5%), "Fire extinguishing equipment and its apparatus" (64.6%), and "Miscellaneous engines and turbines" (64.0%). The top three industries with the highest value added per capita were "Boiler manufacturing" (JPY51.28 million), "Refrigerating machines and air conditioning apparatus" (JPY30.75 million), and "Elevator and escalators" (JPY30.27 million).

Next, let's look at the "Production machinery." As shown in Table 3-1-6, the industries with particularly high shares are "Molds and dies, parts and accessories for nonmetal products" (55.4%), "Machinery for fabrication of plastic and its equipment" (47.9%), and "Dyeing and finishing machinery" (42.9%). The top three industries with the highest value added per capita were "Molds and dies, parts and accessories for nonmetal products"(JPY33.58 million), "Machinery for fabrication of plastic and its equipment" (JPY27.17 million), and "Packing machines" (JPY16.05 million).

Finally, we look at the "Fabricated metal products." As shown in Table 3-1-7, the industries with particularly high shares are "hand saw and saw blades

Table 3-1-5 Value added per capita by manufacturing industry subsector: General-purpose machinery: Kansai: 2020

Industry medium classification	Industry subsectors	National share: %.	Value added per capita: 10,000 yen
General-purpose machinery	Steam engines, turbines and water wheels, except marine engines	65.5	2,331
	Fire extinguishing equipment and its apparatus	64.6	2,303
	Miscellaneous engines and turbines	64.0	2,523
	Refrigerating machines and air conditioning apparatus	50.3	3,075
	Elevators and escalators	44.3	3,027
	Boilers	33.4	5,128
	Pumps and pumping equipments	33.0	1,440

Source: Ministry of Internal Affairs and Communications Statistics Bureau, 2021 Economic Census for Business Activity

9) The "General-purpose machinery" is engaged in the manufacture of general machinery and apparatus that are widely used when assembled or installed in various types of machinery.

Table 3-1-6 Value added per capita by manufacturing industry subsectors: Production machinery: Kansai: 2020

Industry medium classification	Industry subsectors	National share: %.	Value added per capita: 10,000 yen
Production machinery	Molds and dies, parts and accessories for nonmetal products	55.4	3,358
	Machinery for fabrication of plastic and its equipment	47.9	2,717
	Dyeing and finishing machinery	42.9	445
	Machinery and equipment for construction and mining	34.9	1,394
	Textile machinery parts, attachments and accessories	33.7	674
	Chemical machinery and its equipment	29.0	1,280
	Packing machines	28.9	1,605
	Sewing machinery and equipment	26.8	761

Source: Ministry of Internal Affairs and Communications Statistics Bureau, 2021 Economic Census for Business Activity

Table 3-1-7 Value added per capita by manufacturing industry subsectors: Fabricated metal products: Kansai: 2020

Industry medium classification	Industry subsectors	National share: %.	Value added per capita: 10,000 yen
Fabricated metal products	Hand saws and saw blades	62.9	1,198
	Work tools	52.5	1,137
	Nails	42.6	831
	Gas and oil appliances	35.0	1,888
	Tin cans and other plated sheet products	31.9	976
	Plumbers' supplies, except valves and cocks	31.4	1,350
	Constructional metal products, except iron framework	29.2	2,363
	Bolts, nuts, rivets, machine screws and wood screws	28.6	1,035
	Fabricated metal products, n.e.c.	28.4	969
	Miscellaneous hardware	27.2	976
	Edge tools, artisans' tools and hand tools, except files, saws and knives for kitchen use	26.9	1,078
	Coating metal products	26.2	769
	Heat treated metal	25.3	936
	Miscellaneous fabricated wire products	25.2	1,002
	Galvanized and other hot-dip coated metal products, except coated steel	23.4	830
	Edge tools for machinery	22.3	757

Source: Ministry of Internal Affairs and Communications Statistics Bureau, 2021 Economic Census for Business Activity

manufacturing" (62.9%), "working tool manufacturing" (52.5%), and "nail manufacturing" (42.6%).

The top three industries with the highest per capita value added were "Constructional metal products, except iron framework" (JPY23.63 million), "Gas and oil appliances" (JPY18.88 million), and "Plumbers' supplies, except valves and cocks" (JPY13.5 million).

4. Summary

As we have seen, in Sections 1.2 and 1.3, we have compiled basic data for the creation of profitable industries in the Kansai region. The results of this analysis are summarized as follows.

(1) Share of value added by region: In the Southern Kanto region, the shares of "Information and communications," "Scientific research, professional and technical services," and "Finance and Insurance" are higher than those of other regions. In Tokai, the share of "Manufacturing" is overwhelmingly high. The industrial structure of Kansai and Kyushu is similar to that of the entire nation, with "Wholesale and Retail trade," "Manufacturing," and "Medical, health care and welfare" at the center.

(2) Looking at value added per capita by region, three of the top five industries in the southern Kanto region match the top five industries in terms of market share. Therefore, it can be said that the Southern Kanto region has a profitable industrial structure. In Tokai, two of the top five industries in terms of value added are "Manufacturing" and "Transportation and postal services." In particular, the value added per capita in the "Manufacturing" industry is higher than in other regions. In the Kansai region, only two of the top five industries in terms of value added per capita are the "Manufacturing" and "Construction" industries. "Wholesale and Retail trade," which has the largest share of value added, is not among the top five industries in terms of value added per capita. This indicates that Kansai does not have a profitable industrial structure.

(3) In terms of manufacturing subsectors, the per capita value added in the Kansai region is high for "Boiler manufacturing" and "Molds and dies, parts and accessories for nonmetal products." Similarly, in Kyushu, the value added per capita is high in the "Integrated circuit" and "Semiconductor device" industries. This is due to Kyushu's efforts to become the so-called "Silicon Island Kyushu," where high-value-added semiconductor-related industries have been steadily

concentrated[10].

In terms of major industry categories, the industrial structure of the Kansai region cannot be said to be profitable. However, when looking at the manufacturing industry on subsectors basis, there are some industries that have a high market share and high value added per capita. Based on the results of this analysis, Section 2 discusses industries that will become the new strengths of the Kansai region.

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10) For more information on recent semiconductor-related activity in Kyushu, see Kyushu Bureau of Economy, Trade and Industry (2022) and Kyushu Economic Research Institute (2023).

Reference Table 3-1-1 Comparison of value added, number of business employees,

Industry	Nationwide			Southern Kanto		
	vlalue added	Number of business employees	Value added per capita	vlalue added	Number of business employees	Value added per capita
Unit	JPY million	person	JPY ten thousands	JPY million	person	JPY ten thousands
Wholesale and Retail trade	61,407,746	11,362,022	540.5	22,912,727	3,491,739	656.2
Manufacturing	58,881,864	8,923,721	659.8	11,788,316	1,698,847	693.9
Medical, health care and welfare	22,366,210	7,025,613	318.4	1,886,899	1,807,111	104.4
Construction	20,763,296	3,564,232	582.5	6,457,792	917,775	703.6
Finance and Insurance	18,830,881	1,535,224	1,226.6	9,182,347	585,645	1,567.9
Scientific research, professional and technical services	17,228,871	1,789,444	962.8	10,531,999	743,617	1,416.3
Transport and postal activities	16,959,527	3,093,342	548.3	6,180,019	994,691	621.3
Information and communications	16,023,415	1,642,108	975.8	11,118,275	1,017,878	1,092.3
Services, N.E.C	15,232,647	4,038,313	377.2	6,291,205	1,408,928	446.5
Accomodations, eating and drinking services	10,137,119	4,705,392	215.4	3,406,164	1,445,600	235.6
Real estate and goods rental and leasing	9,205,138	1,355,286	679.2	4,695,639	530,546	885.1
Living-related and personal services and amusement services	7,851,378	2,183,576	359.6	2,769,757	644,826	429.5
Education, learning support	6,513,183	1,729,974	376.5	2,441,235	596,591	409.2
Electricity, Gas, Heat supply and Water	3,782,707	179,274	2,110.0	664,267	38,363	1,731.5
Compound services	2,543,621	481,331	528.5	474,793	90,337	525.6
Agriculture, forestry and fishing	1,175,186	346,292	339.4	93,111	25,230	369.0
Mining and quarrying of stone and gravel	632,731	19,138	3,306.2	487,825	3,440	14,181.0

Industry	Nationwide		Southern Kanto	
	vlalue added	Number of business employees	vlalue added	Number of business employees
Unit	%	%	%	%
Wholesale and Retail trade	21.2	21.1	22.6	21.8
Manufacturing	20.3	16.5	11.6	10.6
Medical, health care and welfare	7.7	13.0	1.9	11.3
Construction	7.2	6.6	6.4	5.7
Finance and Insurance	6.5	2.8	9.1	3.7
Scientific research, professional and technical services	6.0	3.3	10.4	4.6
Transport and postal activities	5.9	5.7	6.1	6.2
Information and communications	5.5	3.0	11.0	6.3
Services, N.E.C	5.3	7.5	6.2	8.8
Accomodations, eating and drinking services	3.5	8.7	3.4	9.0
Real estate and goods rental and leasing	3.2	2.5	4.6	3.3
Living-related and personal services and amusement services	2.7	4.0	2.7	4.0
Education, learning support	2.2	3.2	2.4	3.7
Electricity, Gas, Heat supply and Water	1.3	0.3	0.7	0.2
Compound services	0.9	0.9	0.5	0.6
Agriculture, forestry and fishing	0.4	0.6	0.1	0.2
Mining and quarrying of stone and gravel	0.2	0.0	0.5	0.0

Source: Compiled by Ministry of Internal Affairs and Communications, Statistics Bureau, from "Economic Census

and value added per capita: Southern Kanto, Tokai, Kansai, and Kyushu, 2015

Tokai			Kansai			Kyusyu		
vlalue added	Number of business employees	Value added per capita	vlalue added	Number of business employees	Value added per capita	vlalue added	Number of business employees	Value added per capita
JPY million	person	JPY ten thousands	JPY million	person	JPY ten thousands	JPY million	person	JPY ten thousands
6,955,599	1,317,976	527.7	10,538,174	1,959,273	537.9	5,001,492	1,110,761	450.3
13,376,745	1,831,761	730.3	10,390,054	1,555,843	667.8	3,969,178	702,865	564.7
2,944,875	723,547	407.0	4,918,594	1,251,953	392.9	3,438,520	911,462	377.3
2,426,381	415,314	584.2	3,003,398	471,183	637.4	1,875,882	384,023	488.5
1,631,794	158,672	1,028.4	2,842,764	240,774	1,180.7	1,228,668	135,438	907.2
1,376,805	194,109	709.3	2,006,929	270,265	742.6	718,531	130,839	549.2
2,305,041	378,803	608.5	2,909,563	507,139	573.7	1,229,568	279,687	439.6
877,315	111,248	788.6	1,605,828	191,991	836.4	668,022	84,694	788.7
1,716,309	477,766	359.2	2,243,198	654,675	342.6	1,156,946	354,232	326.6
1,213,330	580,893	208.9	1,658,896	813,061	204.0	919,597	450,583	204.1
732,162	132,534	552.4	1,527,890	244,857	624.0	577,902	108,673	531.8
880,029	265,436	331.5	1,354,265	347,604	389.6	683,054	218,061	313.2
680,800	183,186	371.6	1,230,201	327,522	375.6	557,558	156,814	355.6
689,017	25,125	2,742.4	730,375	25,046	2,916.1	393,054	20,013	1,964.0
308,087	55,277	557.4	368,557	67,917	542.7	322,579	59,824	539.2
111,319	30,281	367.6	66,154	26,324	251.3	223,699	60,833	367.7
10,654	1,629	654.0	6,780	905	749.2	22,993	2,634	872.9

Tokai		Kansai		Kyusyu	
vlalue added	Number of business employees	vlalue added	Number of business employees	vlalue added	Number of business employees
%	%	%	%	%	%
18.2	19.1	22.2	21.9	21.8	21.5
35.0	26.6	21.9	17.4	17.3	13.6
7.7	10.5	10.4	14.0	15.0	17.6
6.3	6.0	6.3	5.3	8.2	7.4
4.3	2.3	6.0	2.7	5.3	2.6
3.6	2.8	4.2	3.0	3.1	2.5
6.0	5.5	6.1	5.7	5.3	5.4
2.3	1.6	3.4	2.1	2.9	1.6
4.5	6.9	4.7	7.3	5.0	6.8
3.2	8.4	3.5	9.1	4.0	8.7
1.9	1.9	3.2	2.7	2.5	2.1
2.3	3.9	2.9	3.9	3.0	4.2
1.8	2.7	2.6	3.7	2.4	3.0
1.8	0.4	1.5	0.3	1.7	0.4
0.8	0.8	0.8	0.8	1.4	1.2
0.3	0.4	0.1	0.3	1.0	1.2
0.0	0.0	0.0	0.0	0.1	0.1

for Business Activity, 2016

Reference Table 3-1-2 Comparison of value added, number of business employees,

Industry	Kansai			Osaka		
	vlalue added	Number of business employees	Value added per capita	vlalue added	Number of business employees	Value added per capita
Unit	JPY million	person	JPY ten thousands	JPY million	person	JPY ten thousands
Manufacturing	12,290,053	1,854,919	662.6	3,903,126	580,642	672.2
Wholesale and Retail trade	11,563,646	2,204,808	524.5	5,951,964	954,966	623.3
Medical, health care and welfare	5,635,262	1,433,653	393.1	2,167,982	540,276	401.3
Construction	3,425,756	553,648	618.8	1,563,572	211,267	740.1
Transport and postal activities	3,251,630	575,162	565.3	1,558,366	245,452	634.9
Finance and Insurance	3,126,717	273,101	1,144.9	1,656,989	125,658	1,318.6
Services, N.E.C	2,519,080	734,053	343.2	1,291,641	339,041	381.0
Scientific research, professional and technical services	2,154,120	297,334	724.5	1,188,402	140,926	843.3
Accomodations, eating and drinking services	1,887,246	923,530	204.4	721,746	353,704	204.1
Information and communications	1,679,250	202,218	830.4	1,264,057	141,430	893.8
Real estate and goods rental and leasing	1,619,731	267,200	606.2	960,697	133,967	717.1
Living-related and personal services and amusement services	1,491,643	400,321	372.6	700,924	148,695	471.4
Education, learning support	1,334,978	360,517	370.3	539,189	135,560	397.7
Electricity, Gas, Heat supply and Water	842,426	29,895	2,817.9	333,988	12,130	2,753.4
Compound services	440,794	83,431	528.3	104,164	21,132	492.9
Agriculture, forestry and fishing	109,729	39,975	274.5	7,514	2,100	357.8
Mining and quarrying of stone and gravel	10,638	1,466	725.6	915	109	839.4

Industry	Wakayama			Fukui		
	vlalue added	Number of business employees	Value added per capita	vlalue added	Number of business employees	Value added per capita
Unit	JPY million	person	JPY ten thousands	JPY million	person	JPY ten thousands
Manufacturing	385,792	59,951	643.5	552,886	82,733	668.3
Wholesale and Retail trade	292,504	77,054	379.6	328,485	72,470	453.3
Medical, health care and welfare	226,279	60,953	371.2	203,855	46,777	435.8
Construction	128,911	25,143	512.7	159,289	31,495	505.8
Transport and postal activities	93,146	20,182	461.5	69,790	15,962	437.2
Finance and Insurance	94,081	9,965	944.1	79,347	9,144	867.7
Services, N.E.C	61,037	21,330	286.2	76,474	23,405	326.7
Scientific research, professional and technical services	33,232	7,233	459.4	52,036	9,475	549.2
Accomodations, eating and drinking services	57,538	32,824	175.3	62,954	30,114	209.1
Information and communications	16,378	2,902	564.4	37,518	5,305	707.2
Real estate and goods rental and leasing	25,443	8,104	314.0	24,493	4,947	495.1
Living-related and personal services and amusement services	37,214	15,188	245.0	42,623	13,619	313.0
Education, learning support	33,234	9,722	341.8	27,938	8,277	337.5
Electricity, Gas, Heat supply and Water	38,296	1,201	3,188.7	117,947	3,543	3,329.0
Compound services	24,783	5,468	453.2	26,431	4,857	544.2
Agriculture, forestry and fishing	8,953	3,347	267.5	6,373	4,372	145.8
Mining and quarrying of stone and gravel	1,279	128	999.2	446	84	531.0

Industry	Kansai		Osaka	
	vlalue added	Number of business employees	vlalue added	Number of business employees
Unit	%	%	%	%
Manufacturing	23.0	18.1	16.3	14.2
Wholesale and Retail trade	21.7	21.5	24.9	23.4
Medical, health care and welfare	10.6	14.0	9.1	13.2
Construction	6.4	5.4	6.5	5.2
Transport and postal activities	6.1	5.6	6.5	6.0
Finance and Insurance	5.9	2.7	6.9	3.1
Services, N.E.C	4.7	7.2	5.4	8.3
Scientific research, professional and technical services	4.0	2.9	5.0	3.4
Accomodations, eating and drinking services	3.5	9.0	3.0	8.7
Information and communications	3.1	2.0	5.3	3.5
Real estate and goods rental and leasing	3.0	2.6	4.0	3.3
Living-related and personal services and amusement services	2.8	3.9	2.9	3.6
Education, learning support	2.5	3.5	2.3	3.3
Electricity, Gas, Heat supply and Water	1.6	0.3	1.4	0.3
Compound services	0.8	0.8	0.4	0.5
Agriculture, forestry and fishing	0.2	0.4	0.0	0.1
Mining and quarrying of stone and gravel	0.0	0.0	0.0	0.0

Industry	Wakayama		Fukui	
	vlalue added	Number of business employees	vlalue added	Number of business employees
Unit	%	%	%	%
Manufacturing	24.8	16.6	29.6	22.6
Wholesale and Retail trade	18.8	21.4	17.6	19.8
Medical, health care and welfare	14.5	16.9	10.9	12.8
Construction	8.3	7.0	8.5	8.6
Transport and postal activities	6.0	5.6	3.7	4.4
Finance and Insurance	6.0	2.8	4.2	2.5
Services, N.E.C	3.9	5.9	4.1	6.4
Scientific research, professional and technical services	2.1	2.0	2.8	2.6
Accomodations, eating and drinking services	3.7	9.1	3.4	8.2
Information and communications	1.1	0.8	2.0	1.4
Real estate and goods rental and leasing	1.6	2.2	1.3	1.3
Living-related and personal services and amusement services	2.4	4.2	2.3	3.7
Education, learning support	2.1	2.7	1.5	2.3
Electricity, Gas, Heat supply and Water	2.5	0.3	6.3	1.0
Compound services	1.6	1.5	1.4	1.3
Agriculture, forestry and fishing	0.6	0.9	0.3	1.2
Mining and quarrying of stone and gravel	0.1	0.0	0.0	0.0

Source: Compiled by Ministry of Internal Affairs and Communications, Statistics Bureau, from "Economic Census

and value added per capita: 2015, based on 2 prefectures in the Kansai region

Kyoto			Hyogo			Shiga			Nara		
vlalue added JPY million	Number of business employees person	Value added per capita JPY ten thousands	vlalue added JPY million	Number of business employees person	Value added per capita JPY ten thousands	vlalue added JPY million	Number of business employees person	Value added per capita JPY ten thousands	vlalue added JPY million	Number of business employees person	Value added per capita JPY ten thousands
1,161,752	177,493	654.5	2,746,998	412,892	665.3	1,287,526	173,029	744.1	351,974	69,103	509.3
1,010,254	231,489	436.4	2,133,266	428,327	498.0	449,455	105,913	424.4	372,246	89,054	418.0
603,709	155,585	388.0	1,187,219	307,252	386.4	243,881	66,413	367.2	285,669	74,697	382.4
257,265	46,987	547.5	608,592	105,226	578.4	172,134	30,435	565.6	113,635	20,630	550.8
251,652	50,623	497.1	699,237	128,217	545.4	141,870	28,155	503.9	95,502	18,548	514.9
250,324	26,493	944.9	531,244	46,855	1,133.8	109,411	12,350	885.9	121,368	10,309	1,177.3
200,197	69,772	286.9	441,955	138,610	318.8	114,063	37,957	300.5	57,831	24,560	235.5
187,662	28,751	652.7	420,992	63,411	663.9	87,018	13,426	648.1	37,587	7,043	533.7
219,696	106,928	205.5	422,203	200,966	210.1	99,105	49,192	201.5	75,654	39,333	192.3
92,353	13,617	678.2	159,121	22,897	694.9	22,775	3,860	590.0	13,626	1,980	688.2
159,917	27,130	589.4	257,570	50,890	506.1	53,456	11,011	485.5	46,314	8,808	525.8
139,354	40,078	347.7	307,456	87,529	351.3	70,898	22,255	318.6	55,796	20,240	275.7
243,402	60,760	400.6	265,496	75,841	350.1	68,699	20,272	338.9	52,243	17,090	305.7
57,695	1,980	2,913.9	139,346	4,435	3,142.0	18,389	806	2,281.5	24,714	951	2,598.7
45,351	7,969	569.1	87,175	17,195	507.0	37,622	5,789	649.9	43,031	5,507	781.4
9,509	3,979	239.0	20,985	6,695	313.4	8,072	4,660	173.2	4,748	1,171	405.5
756	144	525.0	1,940	275	705.5	531	102	520.6	913	63	1,449.2

Mie			Tokushima			Tottori		
vlalue added JPY million	Number of business employees person	Value added per capita JPY ten thousands	vlalue added JPY million	Number of business employees person	Value added per capita JPY ten thousands	vlalue added JPY million	Number of business employees person	Value added per capita JPY ten thousands
1,374,563	214,691	640.3	365,875	51,063	716.5	159,561	33,322	478.8
604,120	140,098	431.2	242,309	59,001	410.7	179,043	46,436	385.6
370,199	93,764	394.8	200,122	50,631	395.3	146,347	37,305	392.3
252,614	45,089	560.3	91,935	20,341	452.0	77,809	17,035	456.8
231,686	43,348	534.5	55,445	13,151	421.6	54,936	11,524	476.7
154,147	17,961	858.2	77,826	7,937	980.5	51,980	6,429	808.5
180,104	49,948	360.6	57,851	16,240	356.2	37,927	13,190	287.5
96,318	16,215	594.0	27,711	5,912	468.7	23,162	4,942	468.7
137,333	66,815	205.5	51,260	23,896	214.5	39,757	19,758	201.2
33,593	5,038	666.8	21,203	2,511	844.4	18,626	2,678	695.5
51,840	12,447	416.5	23,388	6,130	381.5	16,613	3,766	441.1
89,084	31,989	278.5	27,121	11,813	229.6	21,173	8,915	237.5
47,445	15,630	303.6	31,560	9,750	323.7	25,772	7,615	338.4
80,085	3,102	2,581.7	21,169	1,054	2,008.4	10,797	693	1,558.0
40,786	8,276	492.8	22,297	4,097	544.2	9,154	3,141	291.4
22,198	6,892	322.1	8,531	3,217	265.2	12,846	3,542	362.7
2,829	337	839.5	915	189	484.1	114	35	325.7

Kyoto		Hyogo		Shiga		Nara	
vlalue added %	Number of business employees %	vlalue added %	Number of business employees %	vlalue added %	Number of business employees %	vlalue added %	Number of business employees %
23.8	16.9	26.3	19.7	43.1	29.5	20.1	16.9
20.7	22.1	20.5	20.4	15.1	18.1	21.2	21.8
12.3	14.8	11.4	14.6	8.2	11.3	16.3	18.3
5.3	4.5	5.8	5.0	5.8	5.2	6.5	5.0
5.1	4.8	6.7	6.1	4.8	4.8	5.4	4.5
5.1	2.5	5.1	2.2	3.7	2.1	6.9	2.5
4.1	6.6	4.2	6.6	3.8	6.5	3.3	6.0
3.8	2.7	4.0	3.0	2.9	2.3	2.1	1.7
4.5	10.2	4.0	9.6	3.3	8.4	4.3	9.6
1.9	1.3	1.5	1.1	0.8	0.7	0.8	0.5
3.3	2.6	2.5	2.4	1.8	1.9	2.6	2.2
2.8	3.8	2.9	4.2	2.4	3.8	3.2	4.9
5.0	5.8	2.5	3.6	2.3	3.5	3.0	4.2
1.2	0.2	1.3	0.2	0.6	0.1	1.4	0.2
0.9	0.8	0.8	0.8	1.3	1.0	2.5	1.3
0.2	0.4	0.2	0.3	0.3	0.8	0.3	0.3
0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0

Mie		Tokushima		Tottori	
vlalue added %	Number of business employees %	vlalue added %	Number of business employees %	vlalue added %	Number of business employees %
36.5	27.8	27.6	17.8	18.0	15.1
16.0	18.2	18.3	20.6	20.2	21.1
9.8	12.2	15.1	17.6	16.5	16.9
6.7	5.8	6.9	7.1	8.8	7.7
6.1	5.6	4.2	4.6	6.2	5.2
4.1	2.3	5.9	2.8	5.9	2.9
4.8	6.5	4.4	5.7	4.3	6.0
2.6	2.1	2.1	2.1	2.6	2.2
3.6	8.7	3.9	8.3	4.5	9.0
0.9	0.7	1.6	0.9	2.1	1.2
1.4	1.6	1.8	2.1	1.9	1.7
2.4	4.1	2.0	4.1	2.4	4.0
1.3	2.0	2.4	3.4	2.9	3.5
2.1	0.4	1.6	0.4	1.2	0.3
1.1	1.1	1.7	1.4	1.0	1.4
0.6	0.9	0.6	1.1	1.5	1.6
0.1	0.0	0.1	0.1	0.0	0.0

for Business Activity, 2016