

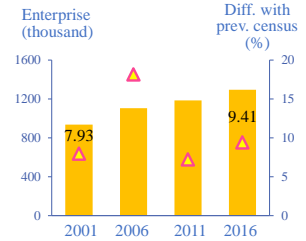
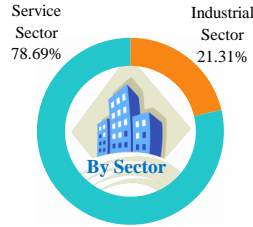
## **(I) Summary of main statistical results**

The domestic economy was affected by the global economy. The economic growth rate dropped from 3.80% in 2011 to 2.20% in 2013, and rebounded to 4.02% in 2014. However, due to the autonomy of supply chain in China and the continued decline in the prices of raw materials for agricultural and industrial industry, which affected exports and production performance, so that it was reduced to 0.81% in 2015. In the second half of 2016, with the recovery of the international economy, the domestic economy grew at a steady pace, and the domestic economy grew quarter by quarter. However, the housing market turned from hot to warm, domestic demand was still weak, and the economic growth rate slightly increased to 1.51%. According to the 2016 census statistics, the number of enterprises of domestic Industry and Service reached 1.296 million, up 9.41% from 2011, creating 8.83 million jobs, increasing 10.14%; gross value of production was NT\$13.9 trillion, a growth of 24.63%, and the value added ratio also increased from 37.33% to 44.77%, and its operating performance improved.

## Number of enterprises



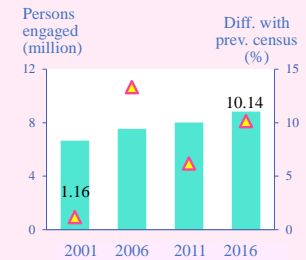
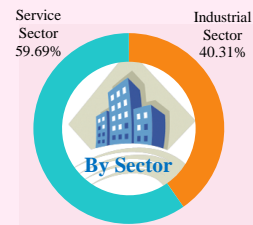
End of 2016  
**1,296,304 enterprises**  
 ↑ **9.41%**  
 (2011- end of 2016)



## Persons engaged



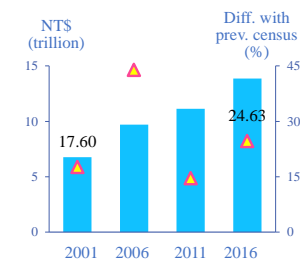
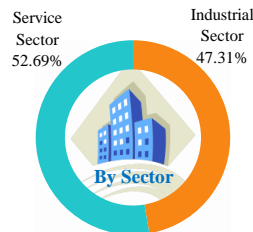
End of 2016  
**8,830,013 persons**  
 ↑ **10.14%**  
 (2011- end of 2016)



## Gross value of production



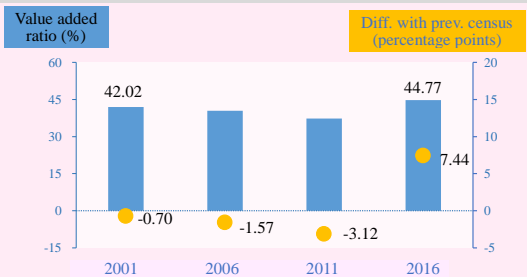
2016  
**NT\$ 13.8711 trillion**  
 ↑ **24.63%**  
 (2011- 2016)



## Value added ratio



2016  
**44.77%**  
 ↑ **7.44 percentage points**  
 (2011- 2016)



Note: "Public Administration and Defense", "Above schools at all levels" (except preschool), "Activities of Membership Organizations", "Activities of Households as Employers of Domestic Personnel", "Artistic Creation" etc., were excluded from the 2016 Industry and Service Census.

## **(II) Domestic industry status and structural changes**

### **1. Basic operation overview**

#### **▲ Over 110 thousand enterprises and over 810 thousand persons engaged in the industries increased over past five years; Accommodation and Food Service Activities contributed to increase over 20%.**

By the end of 2016, the number of enterprise units of all industries amounted to 1,296,304, with an increase of 111,490 units or 9.41% for past five years, comparing to previous censuses, only higher than that of 7.21% in 2011 and 7.93% in 2001. The number of persons engaged amounted 8,830,013 persons, with an increase of 813,211 persons or 10.14% for past five years, higher than that of 6.18% in 2011. Among two major sectors, the number of enterprises amounted to 1,020,046 or accounted for 78.69% and the number of persons engaged amounted to 5,271,040 or 59.69% in Service Sector, both higher than 276,258 enterprises and 3,558,973 persons of Industrial Sector.

Among the sectors, the number of enterprises in Manufacturing was 161,334 or shared 12.45%, with 2,963,630 persons engaged, or accounted for 33.56%; there were 509,937 enterprises or 39.34% in Wholesale and Retail Trade, with 2,011,226 persons engaged or accounted for 22.78%. Both accounted for 52% of the number of enterprises, and contributed 56% job opportunities, which are the main players in the domestic industry.

Compared with the end of 2011, as Accommodation and Food Service Activities benefited from the tourism and the trend of eating out, the number of enterprises increased by 32,289, number of persons engaged increased by 179,078, contributing 28.96% and 22.02% of the total increase respectively, and an important source of industrial growth. The number of enterprises in Manufacturing only increased by 4,091 for past five years, benefiting from the development of high-end semiconductor capacity, and the driven by metals and machinery industry, the number of persons engaged increased by 174,612, and the contribution increased by 21.47%; the number of enterprises in Wholesale and Retail Trade increased by 14,238 or 2.87%, the number of persons engaged increased by 98,764 or 5.16%; the growth rate was lower than the overall average, the industry growth was slow.

**Figure 1 Changes of Number of Enterprises and Number of Persons Engaged of Major Industries Between 2011 to 2016**



**Table 1 Operation Status of Enterprise Units of All Industries**

End of 2016

	Number of enterprises				Number of persons engaged			
	(Enterprise)	Structure (%)	Increase or decrease in 5 years		(Person)	Structure (%)	Increase or decrease in 5 years	
			Real number (Enterprise)	Ratio (%)			Real number (Person)	Ratio (%)
<b>Grand total</b>	<b>1 296 304</b>	<b>100.00</b>	<b>111 490</b>	<b>9.41</b>	<b>8 830 013</b>	<b>100.00</b>	<b>813 211</b>	<b>10.14</b>
<b>Industrial Sector</b>	<b>276 258</b>	<b>21.31</b>	<b>27 032</b>	<b>10.85</b>	<b>3 558 973</b>	<b>40.31</b>	<b>194 847</b>	<b>5.79</b>
Mining and Quarrying	282	0.02	- 150	-34.72	3 703	0.04	- 653	-14.99
Manufacturing	161 334	12.45	4 091	2.60	2 963 630	33.56	174 612	6.26
Electricity and Gas Supply	667	0.05	491	278.98	33 411	0.38	839	2.58
Water Supply and Remediation Activities	5 306	0.41	303	6.06	35 742	0.40	5 764	19.23
Construction	108 669	8.38	22 297	25.82	522 487	5.92	14 285	2.81
<b>Service Sector</b>	<b>1 020 046</b>	<b>78.69</b>	<b>84 458</b>	<b>9.03</b>	<b>5 271 040</b>	<b>59.69</b>	<b>618 364</b>	<b>13.29</b>
Wholesale and Retail Trade	509 937	39.34	14 238	2.87	2 011 226	22.78	98 764	5.16
Transportation and Storage	47 830	3.69	- 6 784	-12.42	376 929	4.27	20 852	5.86
Accommodation and Food Service Activities	144 654	11.16	32 289	28.74	597 887	6.77	179 078	42.76
Information and Communication	16 446	1.27	3 281	24.92	227 009	2.57	35 349	18.44
Financial and Insurance Activities; Compulsory Social Security	20 362	1.57	6 556	47.49	402 156	4.55	16 649	4.32
Real Estate Activities	28 088	2.17	8 012	39.91	120 339	1.36	18 093	17.70
Prof., Scientific and Technical Activities	52 525	4.05	-	-	283 373	3.21	-	-
Support Service Activities	24 747	1.91	2 926	13.41	399 007	4.52	46 010	13.03
Education	23 133	1.78	-	-	148 679	1.68	-	-
Human Health and Social Work Activities	28 106	2.17	2 108	8.11	421 072	4.77	57 365	15.77
Arts, Entertainment and Recreation	19 362	1.49	2 301	13.49	82 993	0.94	12 445	17.64
Other Service Activities	104 856	8.09	12 159	13.12	200 370	2.27	39 680	24.69

Note: 1. The result of this census was processed with computers. Due to numeric rounding, there might be inconsistent in last digits between totals and associated itemized numbers. (The following tables are the same.)

2. In this statistic table, "-" indicates no numerical value or no statistics; "0" Indicates a numerical value was less than half unit. (The following tables are the same.)

3. Education in the 2016 Industry and Service Census only covers preschools for Pre-primary Education (exclude primary school (inclusive) and above schools at all levels), Educational Support Activities and Other Education, such as overseas study and study tour services agencies, all kinds of cram schools, talent classes and car driving classes, etc., among which preschool is the new added scope of 2016 census, so that no comparison for the increase or decrease in 5 years. (The following tables are the same.)

4. Research & Development Service was new added scope in Prof., Scientific and Technical Activities at 2016 census, so that no comparison for the increase or decrease in 5 years. (The following tables are the same.)

## 2. Output overview

### ▲ Total value of production increased by 3.91%, gross value of production increased by 24.63%, driving the value added ratio rose by 7.44 percentage points for past 5 years.

In 2016, the total value of production was NT\$30 trillion 983 billion in all industries. Affected by, low price of international petrochemical and metal products and slowdown of domestic export trade, it only increased by NT\$1 trillion 167.1 billion or 3.91% in 5 years, being the lowest increase rate of the previous censuses.

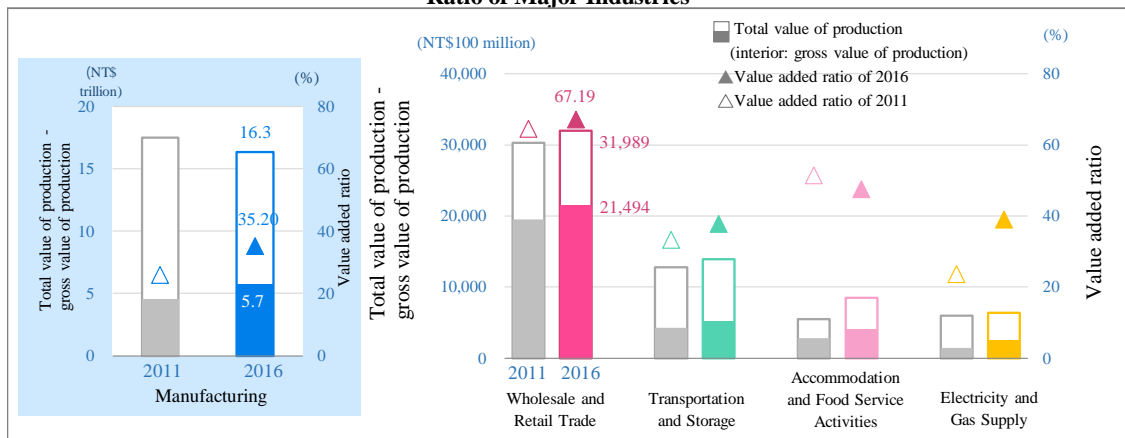
Deducting the intermediate consumption as raw material input, outsourcing processing, and service cost, the gross value of production was NT\$13 trillion 871.1 billion in 2016, benefiting from the significant drop in raw material costs, an increase of NT\$ 2 trillion 741.2 billion or 24.63% in 5 years, while driving the value added ratio from 37.33% to 44.77% in 2011 and 2016 respectively, with an increase of 7.44 percentage points.

Among the two major sectors, Industrial Sector contributed NT\$18 trillion 670.1 billion or 60.26% of total value of production, which is higher than Service Sector's NT\$12 trillion 312.9 billion, but gross value of production was NT\$6 trillion 561.9 billion or 47.31%, lower than Service Sector's NT\$7 trillion 309.1 billion or 52.69%, and its value added ratio 35.15% was also lower than Service Sector's 59.36%.

Among the major industries, Manufacturing with total value of production NT\$16 trillion 332.8 billion, and gross value of production NT\$5 trillion 749 billion, contributed 52.72% of the entire total value of production and 41.45% of entire gross value of production, respectively, still being the focus of production. Comparing with 2011, due to the decline in the price of petrochemical and metal industries, total value of production decreased by 6.53%, while the gross value of production increased by 26.79% due to the reduction of the intermediate consumption

cost burden, and the optoelectronic industry's economic recovery, and the value added ratio has also risen by 9.25 percentage points to 35.20%. Due to the slowdown of domestic export trade, the industry's recovery is limited, Wholesale and Retail Trade's total value of production, and gross value of production grew 5.68% and 9.99% only respectively for past five years, and value added ratio increased by 2.63 percentage points to 67.19%. As for Accommodation and Food Service Activities, its total value of production, and gross value of production increased by 56.18% and 44.35%, respectively, but value added ratio decreased by 3.90 percentage points due to rising costs. In addition, Transportation and Storage, Electricity and Gas Supply also benefited from the drop in international fuel prices, with value added ratio rising by 4.48 and 15.36 percentage points respectively.

**Figure 2 Total Value of Production, Gross Value of Production and Value Added Ratio of Major Industries**



**Table 2 Output Overview of Enterprise Units of All Industries**

2016

	Total value of production				Gross value of production				Value Added Ratio	
	(NT\$ million)	Structure (%)	Increase or decrease for past 5 years		(NT\$ million)	Structure (%)	Increase or decrease for past 5 years		(%)	Increase or decrease for past 5 years  (Percentage point)
			Real number (NT\$ million)	Ratio (%)			Real number (NT\$ million)	Ratio (%)		
<b>Grand total (Overall average)</b>	<b>30 983 006</b>	<b>100.00</b>	<b>1 167 072</b>	<b>3.91</b>	<b>13 871 075</b>	<b>100.00</b>	<b>2 741 197</b>	<b>24.63</b>	<b>44.77</b>	<b>7.44</b>
<b>Industrial Sector</b>	<b>18 670 105</b>	<b>60.26</b>	<b>- 969 133</b>	<b>-4.93</b>	<b>6 561 934</b>	<b>47.31</b>	<b>1 351 600</b>	<b>25.94</b>	<b>35.15</b>	<b>8.62</b>
Mining and Quarrying	21 001	0.07	- 6 064	-22.41	6 207	0.04	- 3 684	-37.25	29.55	-6.99
Manufacturing	16 332 808	52.72	-1 140 884	-6.53	5 749 031	41.45	1 214 903	26.79	35.20	9.25
Electricity and Gas Supply	636 227	2.05	35 372	5.89	248 172	1.79	106 052	74.62	39.01	15.36
Water Supply and Remediation Activities	151 827	0.49	30 260	24.89	58 418	0.42	11 066	23.37	38.48	-0.47
Construction	1 528 242	4.93	112 183	7.92	500 107	3.61	23 263	4.88	32.72	-0.95
<b>Service Sector</b>	<b>12 312 901</b>	<b>39.74</b>	<b>2 136 205</b>	<b>20.99</b>	<b>7 309 141</b>	<b>52.69</b>	<b>1 389 597</b>	<b>23.47</b>	<b>59.36</b>	<b>1.19</b>
Wholesale and Retail Trade	3 198 939	10.32	171 987	5.68	2 149 390	15.50	195 238	9.99	67.19	2.63
Transportation and Storage	1 389 474	4.48	112 956	8.85	525 023	3.79	99 783	23.46	37.79	4.48
Accommodation and Food Service Activities	853 099	2.75	306 888	56.18	405 826	2.93	124 694	44.35	47.57	-3.90
Information and Communication	1 000 527	3.23	132 317	15.24	470 924	3.40	48 996	11.61	47.07	-1.53
Financial and Insurance Activities; Compulsory Social Security	2 946 284	9.51	756 493	34.55	2 126 141	15.33	581 845	37.68	72.16	1.64
Real Estate Activities	517 413	1.67	98 788	23.60	271 243	1.96	2 843	1.06	52.42	-11.69
Prof., Scientific and Technical Activities	660 995	2.13	-	-	315 093	2.27	-	-	47.67	-
Support Service Activities	415 364	1.34	117 981	39.67	262 256	1.89	68 575	35.41	63.14	-1.99
Education	129 840	0.42	-	-	84 255	0.61	-	-	64.89	-
Human Health and Social Work Activities	814 823	2.63	164 215	25.24	488 062	3.52	119 483	32.42	59.90	3.25
Arts, Entertainment and Recreation	116 526	0.38	25 196	27.59	62 056	0.45	12 701	25.73	53.26	-0.78
Other Service Activities	269 617	0.87	72 107	36.51	148 873	1.07	38 178	34.49	55.22	-0.83



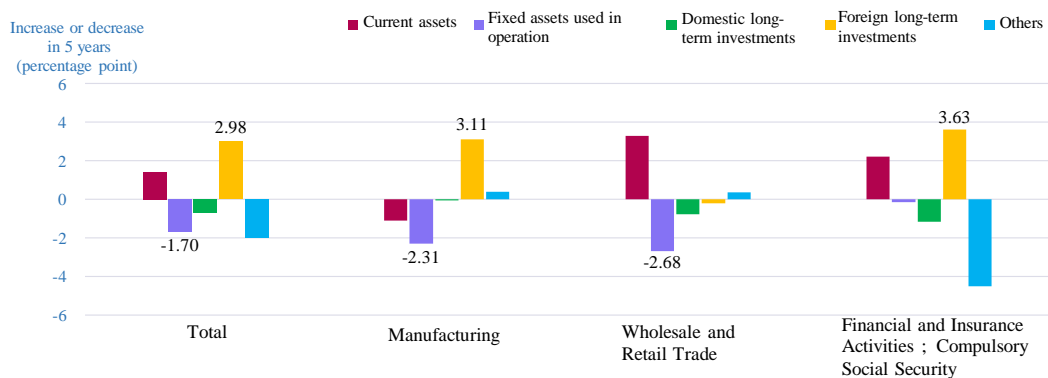
### 3. Overview of asset utilization

#### ▲ The assets used in operation of all industries in 2016 amounted to NT\$186 trillion 126.1 billion, with an increase of 35.58% for past five years.

By the end of 2016, the assets used in operation of Industry and Service was NT\$186 trillion 126.1 billion. Affected by the international economic situation, the corporate investment strategy was still conservative, so it increased by 35.58% in 5 years, only over 28.70% in 2011 among previous censuses. With an observation on structure, foreign long-term investments accounted for 19.43%, an increase of 2.98 percentage points, comparing with the end of 2011; due to insufficient capital expansion, the proportion of the fixed assets used in operation decreased by 18.32% from 20.02% at the end of 2011.

With an observation on major industries, the assets used in operation in Financial and Insurance Activities, Compulsory Social Security was NT\$115 trillion 354.4 billion by the end of 2016, accounting for more than 60% of all; compared with the end of 2011, due to high savings rate and high penetration rate of the policy, the growth rate was 39.63%. The proportion of foreign long-term investments increased by 3.63 percentage points to 25.39% for past five years, due to relaxation of foreign investment limits. The assets used in operation of Manufacturing was NT\$34 trillion 360.4 billion, accounting for nearly 20% of the total, with a growth rate of 26.87% for past five years, of which the foreign long-term investments increased by 3.11 percentage points to 17.67%, and fixed assets used in operation fell by 2.31 percentage points to 32.25%.

**Figure 3 Changes of Structure of Assets Used in Operation of Major Industries**



Note : 1. The "long-term investments" of Insurance of the Person & Non-life Insurance in the Financial and Insurance Activities includes "investment property".  
 2. Other assets include intangible assets, receivables over one year, deferred charges (expenditures), and refundable deposits, etc. Financial and Insurance Activities also include "load, remittance and discount".

In terms of the average scale of assets used in operation, the average utilization of per enterprise was NT\$143.58 million at the end of 2016, with an increase of NT\$27.72 million or 23.92%, comparing with the end of 2011. Among the major industries, Financial and Insurance Activities, Compulsory Social Security and Electricity and Gas Supply have changed greatly due to the rise of individual investment companies and small-scale power plants. In addition, Manufacturing has a total of NT\$212.98 million, with an increase of NT\$40.74 million or 23.65% for past five years.

**Table 3 Assets Used in Operation of Enterprise Units of All Industries**

	By the end of 2016						By the end of 2011				
	Assets used in operation					Average assets used in operation per enterprise (NT\$1,000)	Assets used in operation				Average assets used in operation per enterprise (NT\$1,000)
	Increase or decrease in 5 years (NT\$billion)	Main structure	Current assets (%)	Fixed assets used in operation (%)	Foreign long-term investments (%)		Main structure				
							Current assets (%)	Fixed assets used in operation (%)	Foreign long-term investments (%)		
<b>Grand total (Overall average)</b>	<b>186 126.1</b>	<b>35.58</b>	<b>31.99</b>	<b>18.32</b>	<b>19.43</b>	<b>143 582</b>	<b>137 279.4</b>	<b>30.58</b>	<b>20.02</b>	<b>16.45</b>	<b>115 866</b>
<b>Industrial Sector</b>	<b>39 680.2</b>	<b>26.44</b>	<b>37.63</b>	<b>35.50</b>	<b>15.45</b>	<b>143 635</b>	<b>31 383.8</b>	<b>38.57</b>	<b>38.46</b>	<b>12.65</b>	<b>125 925</b>
Mining and Quarrying	19.8	7.24	24.85	73.45	-	70 060	18.4	22.96	74.99	-	42 648
Manufacturing	34 360.4	26.87	38.52	32.25	17.67	212 977	27 082.9	39.64	34.56	14.56	172 236
Electricity and Gas Supply	2 325.7	21.53	6.98	75.15	0.58	3 486 871	1 913.8	6.91	90.36	0.12	10 873 824
Water Supply and Remediation Activities	638.9	25.06	11.51	83.54	0.18	120 418	510.9	7.22	87.93	0.14	102 117
Construction	2 335.4	25.71	62.32	30.26	1.93	21 491	1 857.8	64.37	27.86	1.21	21 509
<b>Service Sector</b>	<b>146 445.8</b>	<b>38.29</b>	<b>30.47</b>	<b>13.66</b>	<b>20.51</b>	<b>143 568</b>	<b>105 895.6</b>	<b>28.21</b>	<b>14.56</b>	<b>17.58</b>	<b>113 186</b>
Wholesale and Retail Trade	10 988.4	24.36	41.29	50.16	3.76	21 548	8 836.2	37.99	52.84	3.96	17 826
Transportation and Storage	5 614.7	22.11	10.97	79.23	3.71	117 389	4 598.0	10.29	78.90	4.22	84 192
Accommodation and Food Service Activities	1 632.0	45.82	11.63	81.88	0.70	11 282	1 119.2	11.42	83.01	0.79	9 960
Information and Communication	2 175.4	25.98	27.06	43.39	1.70	132 275	1 726.8	27.32	46.11	1.45	131 166
Financial and Insurance Activities; Compulsory Social Security	115 354.4	39.63	30.28	1.62	25.39	5 665 182	82 615.8	28.08	1.76	21.76	5 984 050
Real Estate Activities	5 326.9	64.53	47.63	43.90	1.07	189 650	3 237.7	47.40	39.93	1.41	161 271
Prof., Scientific and Technical Activities	1 273.4	-	34.93	55.00	0.54	24 244	635.7	33.31	60.82	1.28	13 357
Support Service Activities	682.3	41.43	28.66	63.15	0.93	27 570	482.4	25.49	66.72	0.65	22 107
Education	438.8	-	6.88	91.32	0.01	18 967	357.6	4.69	95.11	0.00	17 279
Human Health and Social Work Activities	1 595.1	22.67	22.61	57.07	0.02	56 754	1 300.4	19.75	57.69	0.01	50 017
Arts, Entertainment and Recreation	614.8	29.90	9.45	85.70	0.11	31 754	473.3	7.70	87.93	0.58	27 740
Other Service Activities	749.7	46.23	17.59	79.17	0.15	7 149	512.7	12.87	85.43	0.05	5 531

Note: 1. In this table, Assets used in operation excludes "Investment Property" except for Insurance of the Person and Non-life Insurance of Financial and Insurance Activities.

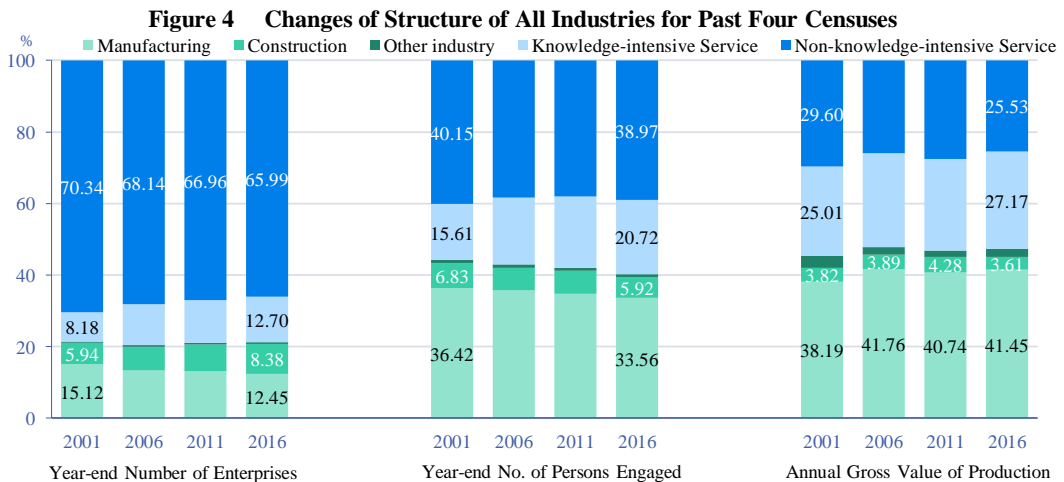
2. Fixed assets used in operation includes own fixed assets and rented or borrowed fixed assets.

#### 4. Long-term industrial structure change

**▲ Manufacturing contributed overall employment opportunities declined by more than 2 percentage points, and gross value of production increased by more than 3 percentage points for past 15 years.**

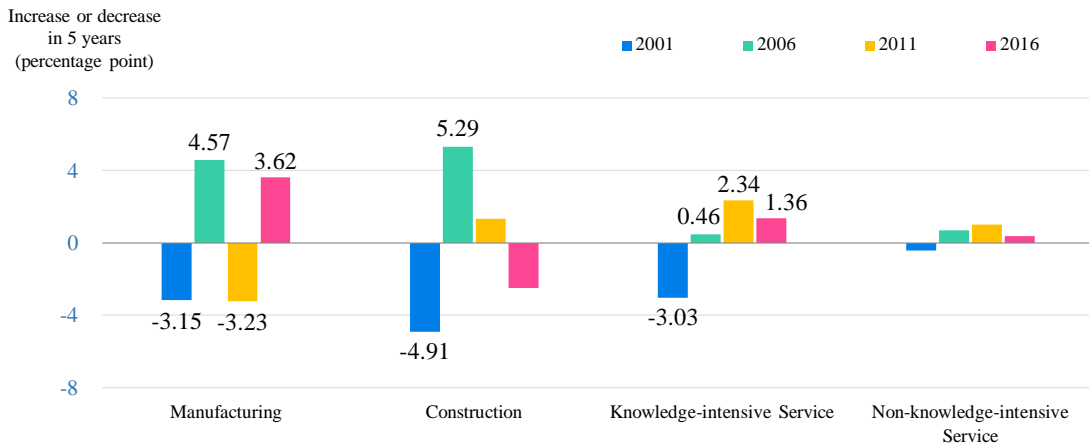
With an observation on the changes in the employment structure of the past four censuses, the proportion of Service Sector in the employment market continued to increase, from 55.76% to 59.69% in 2001 and 2016, respectively, of which the Knowledge-intensive Service increased from 15.61% to 20.72%, as the main source of growth for Service Sector. In Industrial Sector, Manufacturing has been affected by industry shifts, overseas production, automation, etc., and the proportion of the employment market has declined, from 36.42% to 33.56% in 2001 and 2016, respectively, with a decrease of 2.86 percentage points.

In terms of the gross value of production, the proportion of Industrial Sector increased from 45.40% to 47.31%, with an increase of 1.91 percentage points for past 15 years. Manufacturing was affected by the international economic cycle, and the contribution of gross value of production was increased from 38.19% to 41.76% in 2001 and 2006, respectively. In 2011, due to the impact of the financial tsunami and the European debt crisis, gross value of production slowed down to 40.74%. In 2016, the proportion of the electronics industry rebounded, and the proportion increased to 41.45%. As for Construction, with the expansion of the real estate market, its proportion from 3.82% in 2001 rose to a high of 4.28% in 2011, and fell to 3.61% in 2016 due to the cooling of the housing market. In the Service Sector, Non-knowledge-intensive Service reduced 4.07 percentage points to 25.53% for past 15 years, and Knowledge-intensive Service increased 2.16 percentage points to 27.17%.



Regarding the profit rate changes in the recent four censuses, The Industrial Sector was fluctuating and volatile. The main cause of Manufacturing was affected by the global economy. It fell by 3.15 and 3.23 percentage points in 2001 and 2011 censuses respectively. In 2006 and 2016 censuses, it increased by 4.57 and 3.62 percentage points. The profit rate of Service Sector has grown steadily, among which the same of Knowledge-intensive Service increased from 7.38% in 2001 to 11.54% in 2016, with an increase of 4.16 percentage points. During the same period, the same of Non-knowledge-intensive Service increased from 5.09% to 7.14%, with an increase of 2.05 percentage points.

**Figure 5 Change of Profit Rate of All Industries for Past Four Censuses**



**Table 4 Changes of structure of All Industries for Past Four Censuses**

	2016		2011		2006		2001	
	Real number	Increase or decrease for past 5 years (% , Percentage point)	Real number	Increase or decrease for past 5 years (% , Percentage point)	Real number	Increase or decrease for past 5 years (% , Percentage point)	Real number	Increase or decrease for past 5 years (% , Percentage point)
<b>Year-end number of enterprises (Enterprise)</b>								
<b>Grand total</b>	<b>1 296 304</b>	<b>9.41</b>	<b>1 184 814</b>	<b>7.21</b>	<b>1 105 102</b>	<b>18.15</b>	<b>935 316</b>	<b>7.93</b>
<b>Industrial Sector</b>	<b>276 258</b>	<b>10.85</b>	<b>249 226</b>	<b>10.25</b>	<b>226 048</b>	<b>12.52</b>	<b>200 890</b>	<b>-2.44</b>
Manufacturing	161 334	2.60	157 243	6.23	148 017	4.70	141 376	-8.53
Construction	108 669	25.82	86 372	17.74	73 360	31.99	55 579	15.22
Other industry	6 255	11.48	5 611	20.12	4 671	18.70	3 935	26.36
<b>Service Sector</b>	<b>1 020 046</b>	<b>9.03</b>	<b>935 588</b>	<b>6.43</b>	<b>879 054</b>	<b>19.69</b>	<b>734 426</b>	<b>11.16</b>
Knowledge-intensive	164 652	15.72	142 288	12.87	126 062	64.77	76 509	22.90
Non-knowledge-intensive	855 394	7.83	793 300	5.35	752 992	14.45	657 917	9.94
<b>Year-end No. of persons engaged (Person)</b>								
<b>Grand total</b>	<b>8 830 013</b>	<b>10.14</b>	<b>8 016 802</b>	<b>6.18</b>	<b>7 549 912</b>	<b>13.31</b>	<b>6 663 350</b>	<b>1.16</b>
<b>Industrial Sector</b>	<b>3 558 973</b>	<b>5.79</b>	<b>3 364 126</b>	<b>3.82</b>	<b>3 240 266</b>	<b>9.93</b>	<b>2 947 651</b>	<b>-5.99</b>
Manufacturing	2 963 630	6.26	2 789 018	3.45	2 695 984	11.09	2 426 791	-3.85
Construction	522 487	2.81	508 202	6.02	479 357	5.36	454 969	-15.35
Other industry	72 856	8.89	66 906	3.05	64 925	-1.47	65 891	-10.96
<b>Service Sector</b>	<b>5 271 040</b>	<b>13.29</b>	<b>4 652 676</b>	<b>7.96</b>	<b>4 309 646</b>	<b>15.98</b>	<b>3 715 699</b>	<b>7.65</b>
Knowledge-intensive	1 829 584	14.23	1 601 669	12.84	1 419 421	36.43	1 040 440	13.71
Non-knowledge-intensive	3 441 456	12.80	3 051 007	5.56	2 890 225	8.04	2 675 259	5.46
<b>Annual gross value of production (NT\$ billion)</b>								
<b>Grand total</b>	<b>13 871.1</b>	<b>24.63</b>	<b>11 129.9</b>	<b>14.59</b>	<b>9 712.4</b>	<b>43.87</b>	<b>6 750.7</b>	<b>17.60</b>
<b>Industrial Sector</b>	<b>6 561.9</b>	<b>25.94</b>	<b>5 210.3</b>	<b>12.23</b>	<b>4 642.7</b>	<b>51.50</b>	<b>3 064.5</b>	<b>9.17</b>
Manufacturing	5 749.0	26.79	4 534.1	11.79	4 055.8	57.30	2 578.4	13.48
Construction	500.1	4.88	476.8	26.24	377.7	46.39	258.0	-21.06
Other industry	312.8	56.90	199.4	-4.68	209.2	-8.27	228.0	9.62
<b>Service Sector</b>	<b>7 309.1</b>	<b>23.47</b>	<b>5 919.5</b>	<b>16.76</b>	<b>5 069.7</b>	<b>37.53</b>	<b>3 686.2</b>	<b>25.67</b>
Knowledge-intensive	3 768.3	32.07	2 853.2	11.69	2 554.6	51.33	1 688.1	32.23
Non-knowledge-intensive	3 540.8	15.47	3 066.3	21.92	2 515.1	25.87	1 998.1	20.63
<b>Profit rate (%)</b>								
<b>Overall average</b>	<b>8.70</b>	<b>2.31</b>	<b>6.39</b>	<b>-0.84</b>	<b>7.23</b>	<b>2.30</b>	<b>4.93</b>	<b>-2.19</b>
<b>Industrial Sector</b>	<b>8.25</b>	<b>3.37</b>	<b>4.88</b>	<b>-2.99</b>	<b>7.87</b>	<b>4.35</b>	<b>3.52</b>	<b>-3.35</b>
Manufacturing	8.41	3.62	4.79	-3.23	8.02	4.57	3.45	-3.15
Construction	6.40	-2.48	8.88	1.31	7.57	5.29	2.28	-4.91
Other industry	8.07	8.90	-0.83	-4.55	3.72	-4.42	8.14	-3.76
<b>Service Sector</b>	<b>9.15</b>	<b>1.01</b>	<b>8.14</b>	<b>1.54</b>	<b>6.60</b>	<b>0.57</b>	<b>6.03</b>	<b>-1.30</b>
Knowledge-intensive	11.54	1.36	10.18	2.34	7.84	0.46	7.38	-3.03
Non-knowledge-intensive	7.14	0.37	6.77	1.00	5.77	0.68	5.09	-0.42

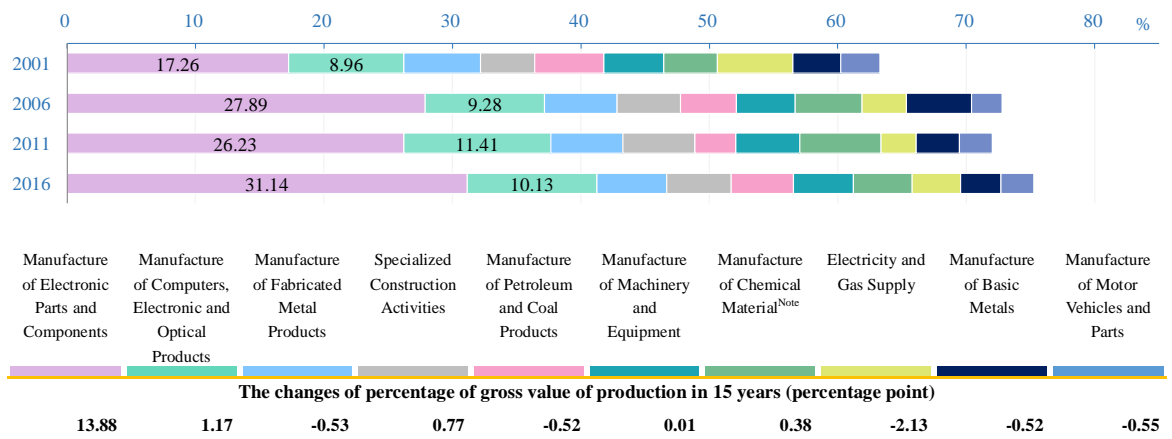
### (III) Industrial development focus

#### 1. Output focus

▲ **Manufacture of Electronic Parts and Components contributed 31.14% of gross value of production in Industrial Sector, and the gross value of production of Financial Service Activities also accounted for 21.84% of the Service Sector.**

In 2016, the gross value of production in Industrial Sector was NT\$6 trillion 561.9 billion, that subsector ranking in the top 10 contributed a total of 75% of the Sector. Among them, the same of Manufacture of Electronic Parts and Components was NT\$2 trillion 43.2 billion, accounting for 31.14% of the Sector, with an increase of 13.88 percentage points comparing with 2001, and provided 609,058 employment opportunities, which was the main force for the development of Industrial Sector; Manufacture of Computers, Electronic and Optical Products contributed 10.13% of gross value of production, only with an increase of 1.17 percentage points comparing with 2001. In the past five years, because the demand for electronic consumer products has weakened, and output growth has slowed down, so the percentage was lower than 11.41% of 2011.

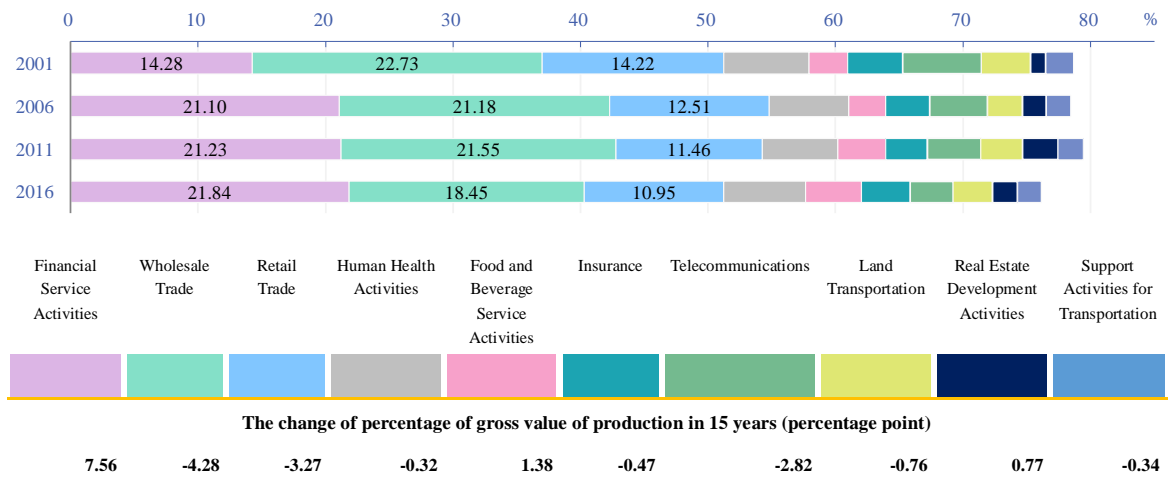
**Figure 6 The Structure of Top 10 Subsectors in Industrial Sector by Gross Value of Production**



Note: Refers to the abbreviation of "Manufacture of Chemical Material, Fertilizers and Nitrogen Compounds, Plastic and Rubber Materials, Man-made Fibres Manufacturing". (The following are the same.)

In 2016, the gross value of production of Service Sector was NT\$7 trillion 309.1 billion, subsector ranking in the top 10 contributed a total of 76% of the Sector, and the same of Financial Service Activities was NT\$1 trillion 596 billion contributing to 22% of the Sector as the most, mainly because the improvement of business operations after the financial reform, with a growth by 7.56 percentage points for past 15 years, especially from 14.28% to 21.10% between 2001 and 2006 as most significant. Wholesale Trade and Retail Trade contributed a total of NT\$2 trillion 149.4 billion or nearly 30% of gross value of production, and 38% of employment opportunities. However, the percentage of gross value of production decreased by 7.55 percentage points for past 15 years, especially Wholesale Trade, which was affected by the slowdown of foreign trade exports, declined of 3.10 percentage points comparing with 2011 as most obvious.

**Figure 7 The Structure of Top 10 Subsectors in Service Sector by Gross Value of Production**





**Table 5 Gross Value of Production Overview of Top 10 Subsectors**

2016

	Annual gross value of production		Profit rate		Year-end number of persons engaged		Year-end number of enterprises	
	(NT\$ million)	Increase or decrease for past 5 years (%)	(%)	Increase or decrease for past 5 years (Percentage point)	(Person)	Increase or decrease for past 5 years (%)	(Enterprise)	Increase or decrease for past 5 years (%)
<b>Grand total (Overall average)</b>	<b>13 871 075</b>	<b>24.63</b>	<b>8.70</b>	<b>2.31</b>	<b>8 830 013</b>	<b>10.14</b>	<b>1 296 304</b>	<b>9.41</b>
<b>Industrial Sector</b>	<b>6 561 934</b>	<b>25.94</b>	<b>8.25</b>	<b>3.37</b>	<b>3 558 973</b>	<b>5.79</b>	<b>276 258</b>	<b>10.85</b>
<b>Top 10 Subsectors (Sort by gross value of production)</b>								
Manufacture of Electronic Parts and Components	2 043 153	49.52	13.10	12.14	609 058	6.88	5 908	-1.12
Manufacture of Computers, Electronic and Optical Products	664 629	11.81	3.98	0.46	220 519	0.48	3 505	-1.99
Manufacture of Fabricated Metal Products	355 845	21.81	9.80	1.78	375 190	8.22	43 041	4.44
Specialized Construction Activities	329 116	12.24	8.67	-3.11	352 446	6.15	88 117	27.90
Manufacture of Petroleum and Coal Products	318 314	92.21	10.31	10.87	22 054	-2.18	143	-7.14
Manufacture of Machinery and Equipment	306 510	17.81	9.94	0.46	263 974	10.34	19 252	0.80
Manufacture of Chemical Material, Fertilizers and Nitrogen Compounds, Plastic and Rubber Materials, Man-made Fibres	297 720	-9.52	13.31	2.08	94 723	11.63	1 715	10.93
Electricity and Gas Supply	248 172	74.62	8.65	11.77	33 411	2.58	667	278.98
Manufacture of Basic Metals	207 905	18.24	5.82	2.12	110 387	12.38	4 768	2.30
Manufacture of Motor Vehicles and Parts	165 375	23.23	9.18	2.61	101 515	5.26	3 435	-2.19
<b>Service Sector</b>	<b>7 309 141</b>	<b>23.47</b>	<b>9.15</b>	<b>1.01</b>	<b>5 271 040</b>	<b>13.29</b>	<b>1 020 046</b>	<b>9.03</b>
<b>Top 10 Subsectors (Sort by gross value of production)</b>								
Financial Service Activities	1 596 006	26.98	32.57	3.08	215 373	5.80	16 748	51.92
Wholesale Trade	1 348 795	5.71	5.68	0.42	1 115 926	5.13	224 716	5.47
Retail Trade	800 595	18.04	6.99	1.09	895 300	5.21	285 221	0.91
Human Health Activities	467 317	32.40	9.69	0.82	378 048	15.65	25 388	7.50
Food and Beverage Service Activities	321 221	44.98	11.74	-1.55	501 504	42.98	135 121	27.15
Insurance	281 621	45.27	2.47	1.98	129 526	8.38	988	-10.26
Telecommunications	246 309	-0.79	16.81	-5.08	53 258	13.73	343	-20.60
Land Transportation	225 012	15.89	9.81	3.60	206 589	0.15	38 088	-16.09
Real Estate Development Activities	142 597	-13.34	11.24	-6.04	44 729	23.61	10 702	32.43
Support Activities for Transportation	136 600	17.69	13.99	-0.20	86 790	8.83	8 059	6.01

## 2. Output momentum

**▲ The gross value of production of Manufacture of Petroleum and Coal Products has grown nearly double, and the value added ratio rose by 18.13 percentage points for past five years.**

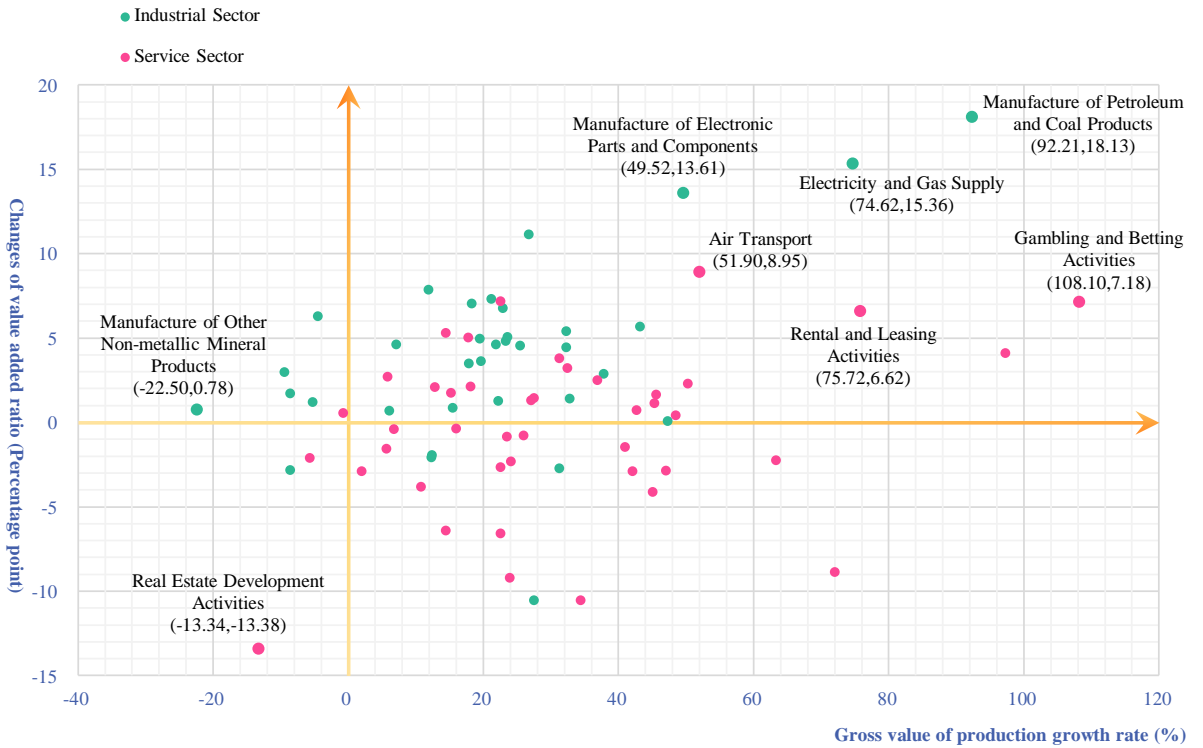
Observing the industrial competitive potential with the gross value of production and value added ratio change in 2011 and 2016 censuses, there were 46 subsectors in the positive growth at same time.

25 subsectors were in Industrial Sector, among which the gross value of production grew nearly double and value added ratio rose 18.13 percentage points in Manufacture of Petroleum and Coal Products; the gross value of production grew by 74.62%, and value added ratio rose by 15.36 percentage points in Electricity and Gas Supply; due to semiconductor, photoelectric industry boom, gross value of production grew by 50%, value added ratio increased significantly by 13.61 percentage points in Manufacture of Electronic Parts and Components.

21 subsectors were in Service Sector, among which gross value of production grew more than double and value added ratio rose by 7.18 percentage points in Gambling and Betting Activities, driven by the growth of public welfare and sports lottery. Because the passenger load climbed and the fuel price was low of Air Transport, its gross value of production grew by more than 50%, and value added ratio increased by 8.95 percentage points. In addition, benefiting from the increasing flexibility of corporate asset allocation, "rent to own" and increase of travel car rental demand, the gross value of production grew by more than 75%, and the value added ratio increased by 6.62 percentage points in Rental and Leasing Activities.

Those whose overall industry growth momentum was poor, except for the significant negative growth of Extraction of Crude Petroleum and Natural Gas, the Real Estate Development Activities affected by the housing market began cooling, its gross value of production had a negative growth of 13.34% and value added ratio dropped by 13.38 percentage points; due to weak upstream demand for raw materials and cement, the gross value of production declined by more than 20%, and the value added ratio only slightly increased by 0.78 percentage points in Manufacture of Other Non-metallic Mineral Product.

**Figure 8 Gross Value of Production Growth Rate and Changes of Value Added Ratio Between 2011 and 2016, by Subsector**



- Note:
1. Extraction of Crude Petroleum and Natural Gas with 52.37% of gross value production negative growth, and the value added rate decreased by 15.54 percentage points, so they are not marked.
  2. Compulsory Social Security and the Education are not marked because of the slight difference in the scope of the two recent censuses.
  3. Scientific Research and Development is the new survey industry and will not be marked.

### 3. The main force of employment growth

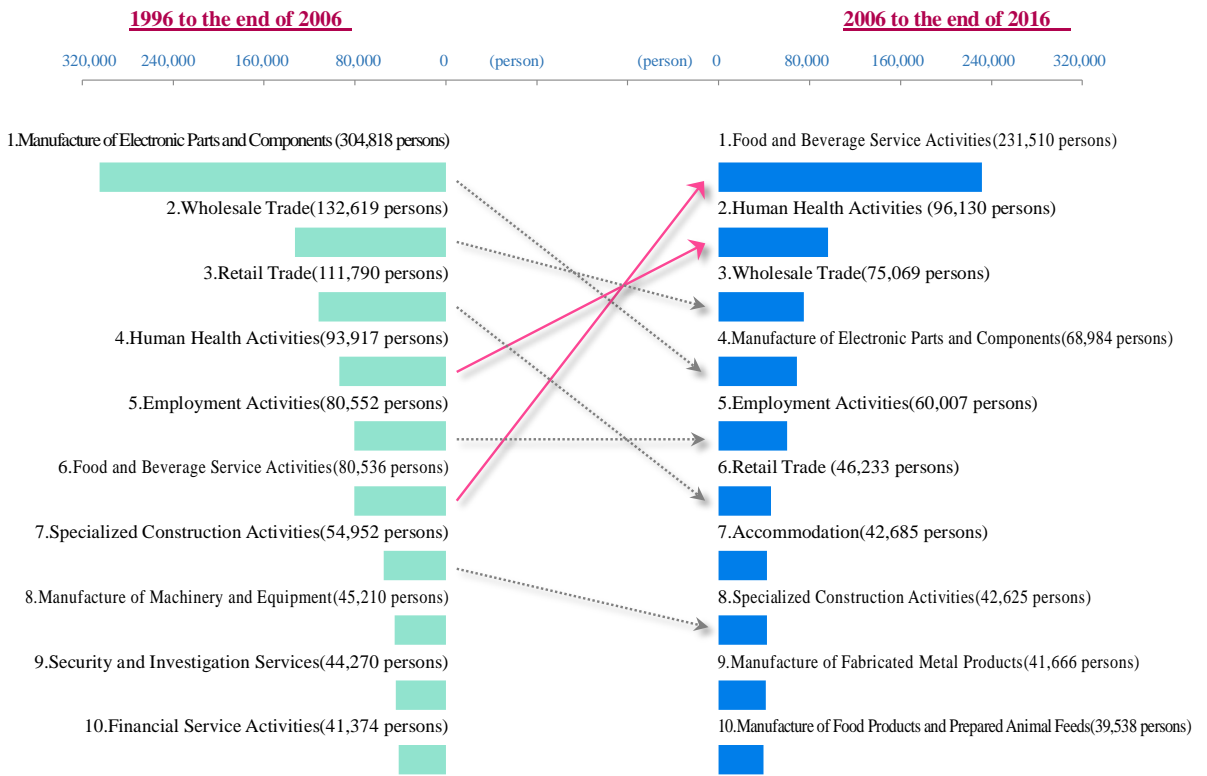
#### ▲ For the increase of employment opportunities between 2006 and 2016, Food and Beverage Service Activities contributed 18.09% as the number one.

Observing the changes in domestic employment growth with a decade as a unit, the number of persons engaged in the period from 2006 to 2016 (recently) increased by 1.28 million, which was higher than the 960,000 people between 1996 and 2006 (previous period).

Moreover, concerning on top ten subsectors contributing to employment opportunities, recent employment growth was concentrated in Service Sector, especially Food and Beverage Service Activities because the prevalence of eating out culture in recent years, the demand for food and beverage was strong and flourishing, with more than 230,000 employment opportunities added for past 10 years, which was much higher than 80,000 in previous term. Its growth contribution jumped to the top, with a contribution rate of 18.09%. As for Human Health Activities, due to the increasing demand for medical care for the aging population, nearly 100,000 employment opportunities were increased in both previous term and recently, and recent growth contribution rose to second place. Accommodation benefited from the wave of sightseeing and tourism. The employment opportunities increased in the past 10 years from less than 10,000 in the previous period to more than 40,000 recently, and entered the top 10.

On the other hand, Manufacture of Electronic Parts and Components increased by more than 300,000 employment opportunities in the previous period, and the growth contribution rate was 31.66%, which was the main force of employment growth during the period. However, due to the well-developed of the industrial and the impact of globalization, about 70,000 employment opportunities were added recently, and the growth contribution rate dropped to 5.39%. Wholesale Trade and Retail Trade also showed a downward trend in new employment opportunities, with a total of more than 240,000 employment opportunities added in the previous period, and recently dropped to 120,000. Due to factors such as financial consolidation, the rise of internet technology, etc. Human growth slowed down, Financial Service Activities dropped from the previous period of more than 40,000 people to less than 20,000 people and exited the top 10.

**Figure 9 Top 10 Subsectors of Increasing Employment Opportunities in The Past 20 Years**



Note: The number in ( ) indicates the increased number of persons engaged in the industry over the past 10 years.

**Table 6 Top 10 Subsectors of Increasing Employment Opportunity Between 2006-2016 and 1996-2006**

	Number of persons engaged by the end of 2016	Increased or decreased number of persons engaged from 2006 to the end of 2016	Contribution rate	Number of persons engaged by the end of 2006	Increased or decreased number of persons engaged from 1996 to the end of 2006	Contribution rate
	(Person)	(Person)	(%)	(Person)	(Person)	(%)
<b>Grand total</b>	<b>8 830 013</b>	<b>1 280 101</b>	<b>100.00</b>	<b>7 549 912</b>	<b>962 740</b>	<b>100.00</b>
<b>Top 10 subsectors of increased number of employees from 2006 to the end of 2016 (Sort by increasing number)</b>						
Food and Beverage Service Activities	501 504	231 510	18.09	269 994	80 536	8.37
Human Health Activities	378 048	96 130	7.51	281 918	93 917	9.76
Wholesale Trade	1 115 926	75 069	5.86	1 040 857	132 619	13.78
Manufacture of Electronic Parts and Components	609 058	68 984	5.39	540 074	304 818	31.66
Employment Activities	143 009	60 007	4.69	83 002	80 552	8.37
Retail Trade	895 300	46 233	3.61	849 067	111 790	11.61
Accommodation	96 383	42 685	3.33	53 698	2 937	0.31
Specialized Construction Activities	352 446	42 625	3.33	309 821	54 952	5.71
Manufacture of Fabricated Metal Products	375 190	41 666	3.25	333 524	26 742	2.78
Manufacture of Food Products and Prepared Animal Feeds	146 254	39 538	3.09	106 716	- 4 767	-0.50
<b>Top 10 subsectors of increased number of employees from 1996 to the end of 2016 (Sort by increasing number)</b>						
Manufacture of Electronic Parts and Components	609 058	68 984	5.39	540 074	304 818	31.66
Wholesale Trade	1 115 926	75 069	5.86	1 040 857	132 619	13.78
Retail Trade	895 300	46 233	3.61	849 067	111 790	11.61
Human Health Activities	378 048	96 130	7.51	281 918	93 917	9.76
Employment Activities	143 009	60 007	4.69	83 002	80 552	8.37
Food and Beverage Service Activities	501 504	231 510	18.09	269 994	80 536	8.37
Specialized Construction Activities	352 446	42 625	3.33	309 821	54 952	5.71
Manufacture of Machinery and Equipment	263 974	26 474	2.07	237 500	45 210	4.70
Security and Investigation Services	86 994	22 867	1.79	64 127	44 270	4.60
Financial Service Activities	215 373	15 722	1.23	199 651	41 374	4.30

Note: Contribution rate = (Increased or decreased number of that industry in the past 10 years/increased or decreased number of all industries in the past 10 years)\*100%.

#### 4. The contribution of Information and Electronic Industry

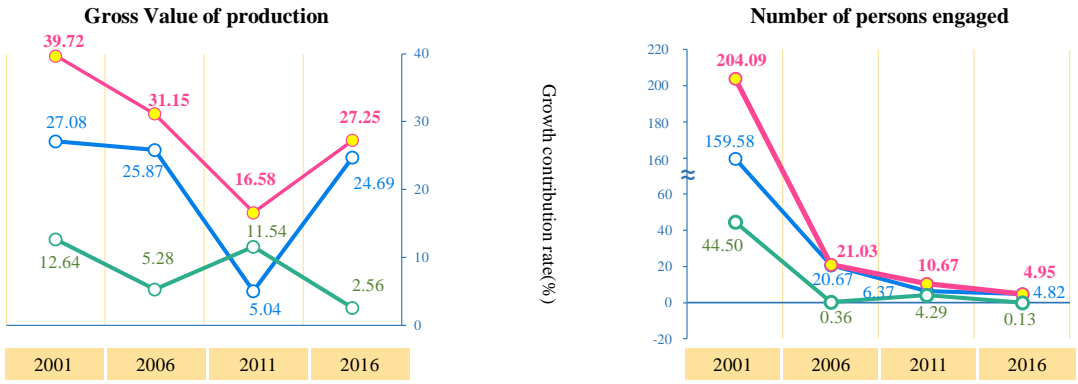
**▲ Between 2011 and 2016, Information and Electronic Industry's contribution rate for gross value of production was 27.53% and the new employment contribution rate fell to 5%.**

Information and Electronic Industry is the main development industry in Taiwan, and it was the key position of the global electronics industry supply chain. Since the 1980s, Taiwan has faced the trend of traditional industry migration. Thanks to the rise of Information and Electronic Industry, the gross value of production grew by more than NT\$400 billion between 1996 and 2001. The contribution rate for all growth reached 40%, and the number of employment opportunities increased by more than 150,000, with the contribution rate up to 2 times. Among which Manufacture of Electronic Parts and Components focusing with semiconductor was indispensable.

After 2006, as the industry fully-developed and the international competition was cutthroat, Information and Electronic Industry slowed down the growth contribution rate. From 2001 to 2006, the gross value of production grew by more than NT\$900 billion, reducing the overall contribution rate to 31.15%; from 2006 to 2011, due to the financial tsunami, the global electronics industry was in a downturn, the gross value of production increased by only NT\$235 billion, and the growth contribution rate fell to 16.58%, mainly due to the increase of NT\$71.4 billion in Manufacture of Electronic Parts and Components. Due to the fierce international competition and the impact of domestic large-scale operation between 2011 and 2016, the contribution of growth of Manufacture of Computers, Electronic and Optical Products dropped dramatically. Fortunately, semiconductor, optoelectronics industry started to warm, driving Manufacture of Electronic Parts and Components to grow nearly NT\$700 billion, so that the overall Information and Electronic Industry's growth contribution rate for the gross value of production rose to 27.25%.

In addition, with an observation on employment contribution, Information and Electronic Industry increased by 186,408 people between 2001 and 2006, and the contribution rate of all employment growth exceeded 20%. However, during the period, due to climbing overseas production ratio, Manufacture of Computers, Electronic and Optical Products only added more than 3,000 employment opportunities. After 2006, the employment growth rate of Information and Electronic Industry continued to decrease, and the contribution rate between 2011 and 2016 fell to a low of 4.95%.

**Figure 10 Contribution Growth Rate of Information and Electronic Industry of All Industries**



(NT\$ million)				Increase or decrease in 5 years	(Person)			
<b>1 010 527</b>	<b>2 961 702</b>	<b>1 417 477</b>	<b>2 741 197</b>	<b>All Industries</b>	<b>76 178</b>	<b>886 562</b>	<b>466 890</b>	<b>813 211</b>
401 346	922 496	234 955	746 900	Information and Electronic Industry	155 468	186 408	49 798	40 290
273 654	766 066	71 447	676 690	Manufacture of Electronic Parts and Components	121 566	183 252	29 758	39 226
127 692	156 429	163 508	70 210	Manufacture of Computers, Electronic and Optical Products	33 902	3 156	20 040	1 064

Note: Growth contribution rate = (Increased or decreased number of that industry in the past 5 years/increased or decreased number of all Industries in the past 5 years)\*100%.



## 5. SMEs development

### ▲ Both the number of persons engaged and the proportion of gross value of production for SMEs fell slightly for past five years.

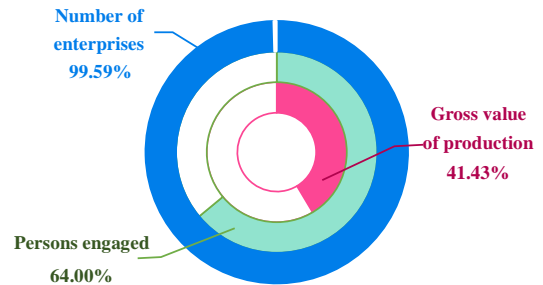
By the end of 2016, the number of SMEs was 1,291,031, accounting for 99.59% of the total, contributing 5,651,017 or 64% of

employment opportunities, and creating a gross value of production of NT\$5 trillion 746.4 billion

or 41.43% as the main structure of Taiwan's industrial. However, due to the development of the domestic demand market, the expansion was less than that of Large Enterprises. Compared with 2011, the number of person engaged increased by 7.85%, which was lower than the 14.48% of Large Enterprises, and the gross value of production increased by 17.17%, which

was also lower than 30.51% of Large Enterprises, so that the ratio fell by 1.36 and 2.64 percentage points respectively.

Figure 11 The Percentage of SMEs to All Enterprises in 2016



		SMEs		Large enterprises	
			Increase or decrease in 5 years (% , Percentage point)		Increase or decrease in 5 years (% , Percentage point)
No. of enterprises	(Enterprise)	1 291 031	9.40	5 273	12.74
	Percentage (%)	99.59	-0.02	0.41	0.02
Persons engaged	(Person)	5 651 017	7.85	3 178 996	14.48
	Percentage (%)	64.00	-1.36	36.00	1.36
Gross value of production	(NT\$100 million)	57 464	17.17	81 247	30.51
	Percentage (%)	41.43	-2.64	58.57	2.64

### ▲ In 2016, 65.81% of SMEs used computers or network equipment, and 4.06% engaged in innovation activities.

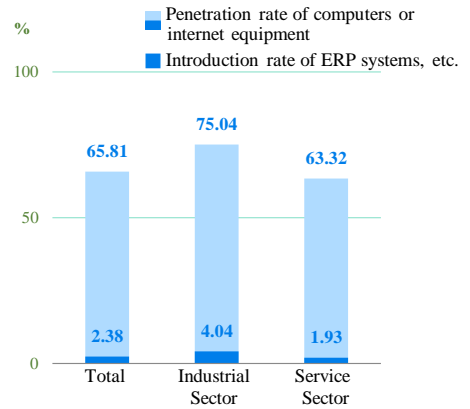
Regarding business digitalization of SMEs, in 2016, the number of enterprises using computers or network equipment was 849,648, and the penetration rate was 65.81%, which was nearly 10 percentage points higher than 55.97% in 2011. Among which, 825,527 companies used computer assisting internal management operations, but most used for basic operations, and only 34,472 or 2.67% of enterprises also used to assist management and decision-making operations. There were 30,681 or 2.38% companies importing ERP and other systems, and the degree of

digitization still needed to be improved. Among the two major sectors, the Industrial Sector computer penetration rate was 75.04%, and the ERP and other systems introduction rates were 4.04%, which were higher than the Service Sector's 63.32% and 1.93% respectively. The number of SMEs Online sales was 91,281 or 7.07%, among which Service Sector's 79,443 or 7.81% was higher.

In 2016, there were 52,424 enterprises or 4.06% of SMEs engaged in innovation activities.

Among them, Industrial Sector had 15,789 or 5.75% of enterprises engaged in innovation activities, and Service Sector had 36,635 or 3.60%. In addition, there were 3,470 enterprises or 0.27% of SMEs engaged in foreign investment allocation.

**Figure 12 SMEs' Operation Digitalization Status in 2016**



**Table 7 The Operation Characteristics of SMEs**

2016

	Year-end No. of enterprises	Operation digitalization overview						Innovation overview		Foreign investment layout	
		Number of enterprises using computers or internet equipment	Assisting internal management operation			Online sales		No. of enterprises	Accounting for the scale	No. of enterprises	Accounting for the sale
			Used only for basic operation	Used in manage- ment and decision- making operation	Using ERP and other systems	No. of enterprises	Accounting for the scale				
(Enterprise)	(Enterprise)	(Enterprise)	(Enterprise)	(Enterprise)	(Enterprise)	(%)	(Enterprise)	(%)	(Enterprise)	(%)	
<b>Grand total</b>	<b>1 296 304</b>	<b>854 884</b>	<b>793 198</b>	<b>37 501</b>	<b>33 382</b>	<b>92 699</b>	<b>7.15</b>	<b>54 767</b>	<b>4.22</b>	<b>4 873</b>	<b>0.38</b>
Large enterprises	5 273	5 236	2 143	3 029	2 701	1 418	26.89	2 343	44.43	1 403	26.61
SMEs	1 291 031	849 648	791 055	34 472	30 681	91 281	7.07	52 424	4.06	3 470	0.27
<b>Industrial Sector</b>	<b>276 258</b>	<b>207 742</b>	<b>191 435</b>	<b>13 427</b>	<b>12 404</b>	<b>12 195</b>	<b>4.41</b>	<b>16 904</b>	<b>6.12</b>	<b>2 563</b>	<b>0.93</b>
Large enterprises	1 787	1 787	321	1 464	1 309	357	19.98	1 115	62.40	964	53.95
SMEs	274 471	205 955	191 114	11 963	11 095	11 838	4.31	15 789	5.75	1 599	0.58
<b>Service Sector</b>	<b>1 020 046</b>	<b>647 142</b>	<b>601 763</b>	<b>24 074</b>	<b>20 978</b>	<b>80 504</b>	<b>7.89</b>	<b>37 863</b>	<b>3.71</b>	<b>2 310</b>	<b>0.23</b>
Large enterprises	3 486	3 449	1 822	1 565	1 392	1 061	30.44	1 228	35.23	439	12.59
SMEs	1 016 560	643 693	599 941	22 509	19 586	79 443	7.81	36 635	3.60	1 871	0.18

Note: 1. SMEs refers to Manufacturing, Construction, Mining and Quarrying employing less than 200 persons; the remained industries employing less than 100 persons. The others are large enterprises.

- "Used in management and decision-making operation" among using computers or internet equipment to assist in internal management operations in this table includes application in both the basic and management, decision-making operation.
- "Used only for basic operation" refers to a manufacturer using computers to assist with routine operation such as billing, personnel data logging, order processing, and purchasing matters, etc.
- "Used in management and decision-making operation" refers to in addition to the general routine operation, internal data is further analyzed by a manufacturer through various information systems to provide applications for managers or decision-making high-level.
- "Using ERP and other systems" refers to an enterprise using enterprise resource planning (ERP), customer relationship management (CRM), cloud computing or massive data (big data) analysis and other operating system.
- "Foreign investment layout" refers to domestic enterprises establishing branch units abroad, or have the ability to control a single enterprise abroad, namely setting up subsidiaries (by which to control other foreign enterprises with reinvestment is also within the scope of overseas allocation).

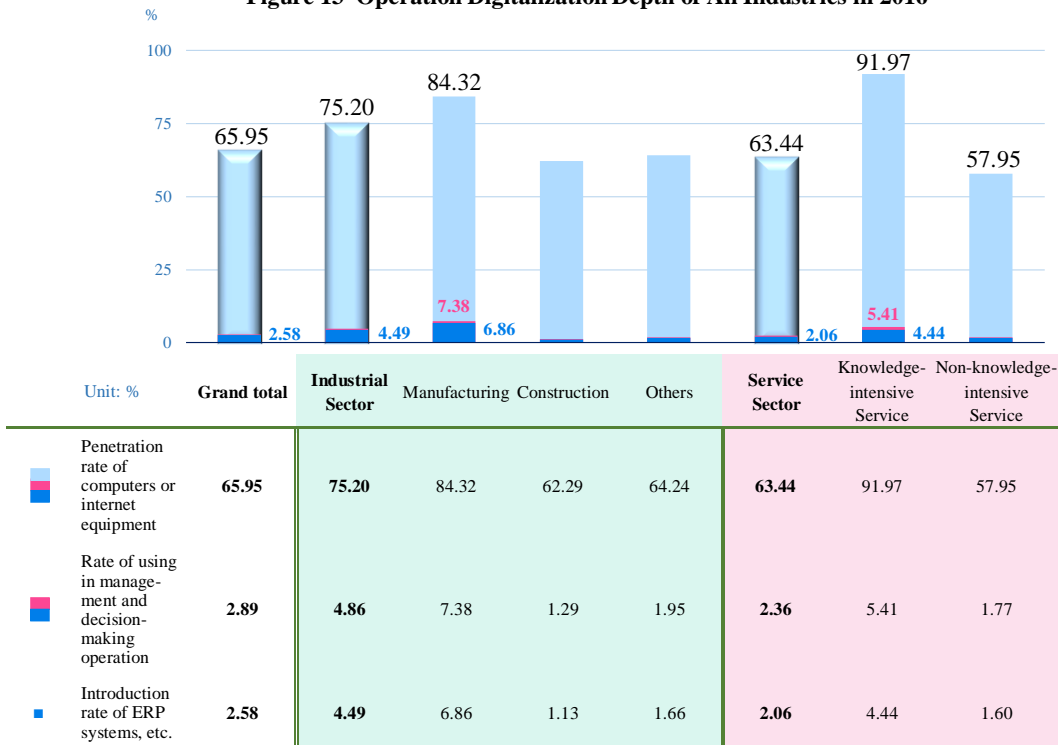
## (IV) Optimized operations of enterprises

### 1. Operation digitalization

▲ In 2016, the enterprise's use computer penetration rates exceeded 65%, and it increased by 10 percentage points for past 5 years.

With rapid development of digital technology and internet marketing, in 2016, there were 854,884 enterprises using computers or internet equipment, accounting for 65.95% of all, nearly 10 percentage points higher than 2011. Among the two major sectors, the Industrial Sector's penetration rate was 75.20%, with an increase of 4.50 percentage points for past 5 years, of which Manufacturing increased by 7.33 percentage points, the penetration rate reached 84%. Service Sector's penetration rate was 63.44%, and the increase rate was 11.17 percentage points for past 5 years. Among them, the penetration rate of the Knowledge-intensive Service was over 90%. Due to the large number of small-scale enterprises in the Non-knowledge-intensive Service, although the penetration rate increased by 11.84 percentage points, it still did not reach 60%.

Figure 13 Operation Digitalization Depth of All Industries in 2016



Note: 1. The various rates of this table refer to the number of enterprises conducting the digitalized projects accounting for "Number of enterprises in the industry".

2. "ERP systems etc." refers to including enterprise resource planning (ERP), customer relationship management (CRM), cloud computing or massive data (big data) analysis and other systems.

In terms of digitalization depth, in 2016, among 830,699 enterprises using computers to assist internal management operation, only 37,501 enterprises used the same to assist management and decision-making operations, accounting for 2.89% of the total, while 33,382 enterprises introduced ERP and other systems, accounting for 2.58% only. Among two major sectors, 4.86% of enterprises in Industrial Sector used computers to assist in management, decision-making operations, and 4.49% of enterprises imported ERP and other systems, which were higher than Service Sector's 2.36% and 2.06% respectively; in particular, due to facing globalization competition, to effectively improve production, sales, and storage efficiency, Manufacturing who imported ERP and other systems accounted for 6.86%.

In addition, in 2016, the number of enterprises providing business information through the internet was 514,650, accounting for 40% of the total, and grew by more than 35% for past five years. Among them, 124,393 enterprises or 45.03% of the Industrial Sector provided business information. In particular, Manufacturing was more than half of the enterprises that provided business information through the internet were highly digitized; relatively, there were 390,257 enterprises or 38.26% of the Service Sector.

**Table 8 Operation Digitalization Overview of Enterprise Units of All Industries**

2016

	Year-end No. of enterprises  (Enterprise)	Using computers or internet equipment							Provide business information through the internet  (Enterprise)
		Penetration rate  (%)	Increase or decrease for past 5 years  (Percentage point)	Assisting internal management operation  (Enterprise)	Used only for basic operation  (Enterprise)	Used in manage- ment and decision- making operation  (Enterprise)	Using ERP and other systems  (Enterprise)		
								(Enterprise)	
<b>Grand total</b>	<b>1 296 304</b>	<b>854 884</b>	<b>65.95</b>	<b>9.80</b>	<b>830 699</b>	<b>793 198</b>	<b>37 501</b>	<b>33 382</b>	<b>514 650</b>
<b>Industrial Sector</b>	<b>276 258</b>	<b>207 742</b>	<b>75.20</b>	<b>4.50</b>	<b>204 862</b>	<b>191 435</b>	<b>13 427</b>	<b>12 404</b>	<b>124 393</b>
Manufacturing	161 334	136 032	84.32	7.33	134 949	123 042	11 907	11 074	85 497
Consumer goods industry	31 274	23 770	76.01	6.99	23 560	21 718	1 842	1 662	14 222
Chemical industry	33 032	29 422	89.07	5.44	29 203	26 985	2 218	2 044	19 016
Metal and mechanical industry	87 615	73 803	84.24	8.77	73 198	67 337	5 861	5 553	45 384
Information and electronic industry	9 413	9 037	96.01	2.04	8 988	7 002	1 986	1 815	6 875
Construction	108 669	67 692	62.29	2.22	65 944	64 546	1 398	1 226	36 916
Others	6 255	4 018	64.24	5.98	3 969	3 847	122	104	1 980
<b>Service Sector</b>	<b>1 020 046</b>	<b>647 142</b>	<b>63.44</b>	<b>11.17</b>	<b>625 837</b>	<b>601 763</b>	<b>24 074</b>	<b>20 978</b>	<b>390 257</b>
Knowledge-intensive	164 652	151 437	91.97	5.37	147 177	138 272	8 905	7 308	89 730
Non-knowledge-intensive	855 394	495 705	57.95	11.84	478 660	463 491	15 169	13 670	300 527

Note: 1. "Used in management and decision-making operation" among using computers or internet equipment to assist in internal management operations in this table includes application in both the basic and management, decision-making operation.

2. "Used only for basic operation" refers to a manufacturer using computers to assist with routine operation such as billing, personnel data logging, order processing, and purchasing matters, etc.
3. "Used in management and decision-making operation" refers to in addition to the general routine operation, internal data is further analyzed by a manufacturer through various information systems to provide applications for managers or decision-making high-level.
4. "Using ERP and other systems" refers to an enterprise using enterprise resource planning (ERP), customer relationship management (CRM), cloud computing or massive data (big data) analysis and other operating systems.

## 2. Industrial upgrading momentum

**▲ In 2016, the R&D expenditures of Information and electronic industry accounted for 3.14% of revenues, and the percentage of enterprises which engaged in innovation reached 20.21%.**

In 2016, there were 22,850 enterprises or 1.76% of all industries invested in R&D, and annual R&D expenditure was NT\$696.6 billion, up 37.38% from 2011, with 0.26 percentage points up to 1.18% of revenue ratio. Among them, the Manufacturing invested NT\$567.3 billion, contributing more than 80%, and the industry's revenue ratio increased by 2.16% from 1.63% in 2011, and which Information and electronic industry's R&D expenditure accounted for 3.14% of the highest revenue ratio.

In 2016, there were 54,767 or 4.22% of enterprises engaged in innovation activities, including 33,467 enterprises of "Product or service innovation" as the most. In addition, 27,623 enterprises with "Organization innovation" for adjustment of the management strategy or organizational structure, and 24,012 enterprises with "Process or background innovation" through production department or service process improved the efficiency of the operation. Among the two major sectors, 16,904 enterprises in Industrial Sector engaged in innovation activities, accounting for 6.12% of the sector. Among which, on average, there was one in every five enterprises in the Information and electronic industry of Manufacturing engaged in innovation activities, due to a short cycle of products and fierce competition in the industry, with the most innovative momentum. In addition, 37,863 enterprises in Service Sector conducted innovation activities, accounting for 3.71% of the Sector, among which 9,356 enterprises of Knowledge-intensive Service, accounting for 5.68% of the industry, with higher momentum.

**Figure 14 R&D and Innovation Overview of All Industries in 2016**



In 2016, there were 44,203 enterprises invested in own-branding operation, which grew by more than 10% for past 5 years, accounting for 3.41% of all enterprises. Among them, Industrial Sector was driven by Manufacturing, 15,530 enterprises operating owned brands, accounting for 5.62% of the Sector; 28,673 enterprises or 2.81% of the Service Sector, of which 6,263 enterprises of Knowledge-intensive Service, with a growth of 20.88%, and 22,410 enterprises of Non-knowledge-intensive Service, with a growth of 11.19% for past 5 years.



**Table 9 Overview of R&D, Innovation Activities, and Own-branding Operation of Enterprise Units of All Industries**

2016

	Year-end No. of enterprises  (Enterprise)	R&D overview				Innovation overview				Own-branding operation	
		Number of enterprises  (Enterprise)	Expenditure amount  (NTS million)	Increase or decrease for past 5 years  (%)	Accounting for revenues  (%)	Number of enterprises  (Enterprise)	Product or service innovation  (Enterprise)	Process or background innovation  (Enterprise)	Organizational innovation  (Enterprise)	Number of enterprises  (Enterprise)	Increase or decrease for past 5 years  (%)
<b>Grand total</b>	<b>1 296 304</b>	<b>22 850</b>	<b>696 645</b>	<b>37.38</b>	<b>1.18</b>	<b>54 767</b>	<b>33 467</b>	<b>24 012</b>	<b>27 623</b>	<b>44 203</b>	<b>11.79</b>
<b>Industrial Sector</b>	<b>276 258</b>	<b>12 940</b>	<b>572 976</b>	<b>31.38</b>	<b>1.95</b>	<b>16 904</b>	<b>9 391</b>	<b>9 058</b>	<b>7 925</b>	<b>15 530</b>	<b>9.33</b>
Manufacturing	161 334	12 362	567 313	31.29	2.16	13 900	7 780	7 638	6 664	14 999	8.90
Consumer goods industry	31 274	1 958	15 769	27.02	0.72	2 484	1 442	1 376	1 153	4 071	10.87
Chemical industry	33 032	2 279	45 391	43.99	1.04	2 758	1 545	1 509	1 297	2 793	11.99
Metal and mechanical industry	87 615	5 473	60 397	29.63	1.11	6 756	3 359	3 656	3 359	6 160	9.26
Information and electronic industry	9 413	2 652	445 756	30.50	3.14	1 902	1 434	1 097	855	1 975	0.30
Construction	108 669	471	1 103	46.38	0.05	2 872	1 576	1 338	1 198	512	20.19
Others	6 255	107	4 560	40.42	0.50	132	35	82	63	19	216.67
<b>Service Sector</b>	<b>1 020 046</b>	<b>9 910</b>	<b>123 668</b>	<b>74.20</b>	<b>0.42</b>	<b>37 863</b>	<b>24 076</b>	<b>14 954</b>	<b>19 698</b>	<b>28 673</b>	<b>13.18</b>
Knowledge-intensive	164 652	4 457	96 054	131.43	0.71	9 356	6 348	3 675	4 931	6 263	20.88
Non-knowledge-intensive	855 394	5 453	27 614	-6.36	0.17	28 507	17 728	11 279	14 767	22 410	11.19

Note: 1. "Service Innovation" includes (1) Industrial Sector's product innovation, ie. the use of new technology to produce new products, or produce products that have been technologically improved;

(2) Service Sector's service innovation, namely the improvement of service projects, content, and service processes (eg. transactions, payment methods, etc.).

2. "Background innovation" includes (1) Industrial Sector's process innovation, i.e. the use of new or significantly improved technologies, methods of operation or new equipment to produce, manage or distribute products;

(2) Service Sector background innovation, i.e. the use of new or significantly improved techniques, methods of operation or new equipment to provide services.

3. "Organizational innovation" refers to the innovation activities of internal management operation (such as finance, personnel, marketing, customer relationship management, strategic alliances, organizational decision-making, knowledge management, etc.)

### 3. Globalization

#### (1) Foreign investment allocation

##### **▲ 4,873 enterprises engaged in overseas allocation, on average, there was 1 in every 10 enterprises of Information and electronic industry by the end of 2016.**

By the end of 2016, there were 4,873 enterprises conducting overseas investment allocation, of which 2,563 were in Industrial Sector, higher than 2,310 in Service Sector, mainly because the Manufacturing faced a highly international competitive market. Among 2,468 enterprises conducting overseas allocation, Information and electronic industry was most active, with an average of 1 in every 10 enterprises.

By the end of 2016, for the enterprise overseas allocation mode, there were mainly 3,508 enterprises adopting reinvestment to set up subsidiaries (sub-subsidiaries) (that is, having control of the subsidiaries/sub-subsidiaries), total controlling 16,757 overseas companies, an average of one enterprise controlling of 4.8 overseas companies. 2,051 enterprises established total 4,249 foreign branch units. As for the two major sectors, 2,180 enterprises in Industrial Sector adopted reinvestment method, which was higher than the 754 enterprises that set branch units; in Service Sector, 1,328 and 1,297 enterprises adopted reinvestment and set branch units respectively.

Concerning of the foreign investment allocation area, by the end of 2016, accounting for nearly 50% of overseas enterprises or branch units controlled by domestic enterprises were located in China (including Hong Kong, Macao), where Non-knowledge-intensive Service was focused on its consumer market, its overseas enterprises or branch units in the area accounted for 57.09%; and "Asia (excluding China)" gathered 17.96% of overseas business locations, mainly due to the relatively low production costs of emerging countries. In addition, "Other areas" also gathered 16.97 %, because where mostly the tax-free countries located, and basing on the tax burden consideration, the enterprise set a paper company and then reinvested.

**Table 10 Overview of Overseas Investment Allocation of Enterprise Units of All Industries**

End of 2016

	Number of enterprises (Enterprise)	Foreign investment layout									
		Number of enterprises (Enterprise)	With foreign single enterprise controlled		With foreign branch units established		Regional distribution				
			Number of enterprises (Enterprise)	Number of controlling enterprises (Enterprise)	Number of enterprises (Enterprise)	No. of branch units (Enterprise)	China (incl. HK, Macao) (%)	Asia (excl. China) (%)	America (%)	Europe (%)	Other areas (%)
<b>Grand total</b>	<b>1 296 304</b>	<b>4 873</b>	<b>3 508</b>	<b>16 757</b>	<b>2 051</b>	<b>4 249</b>	<b>48.81</b>	<b>17.96</b>	<b>10.61</b>	<b>5.66</b>	<b>16.97</b>
<b>Industrial Sector</b>	<b>276 258</b>	<b>2 563</b>	<b>2 180</b>	<b>12 283</b>	<b>754</b>	<b>1 364</b>	<b>46.76</b>	<b>16.71</b>	<b>10.78</b>	<b>6.07</b>	<b>19.67</b>
Manufacturing	161 334	2 468	2 123	12 050	701	1 287	46.61	16.59	10.89	6.20	19.71
Consumer goods industry	31 274	316	274	1 358	79	131	51.58	20.15	9.27	3.43	15.58
Chemical industry	33 032	383	313	1 680	114	215	48.18	18.10	10.03	3.96	19.74
Metal and mechanical industry	87 615	819	693	3 298	251	469	49.51	17.47	8.89	5.50	18.64
Information and electronic industry	9 413	950	843	5 714	257	472	43.18	14.73	12.75	7.99	21.35
Construction	108 669	88	51	221	51	73	53.06	22.45	6.46	0.34	17.69
Others	6 255	7	6	12	2	4	56.25	18.75	-	-	25.00
<b>Service Sector</b>	<b>1 020 046</b>	<b>2 310</b>	<b>1 328</b>	<b>4 474</b>	<b>1 297</b>	<b>2 885</b>	<b>52.59</b>	<b>20.27</b>	<b>10.29</b>	<b>4.89</b>	<b>11.96</b>
Knowledge-intensive	164 652	702	487	1 811	323	868	44.72	26.80	11.68	4.26	12.54
Non-knowledge-intensive	855 394	1 608	841	2 663	974	2 017	57.09	16.54	9.49	5.26	11.62

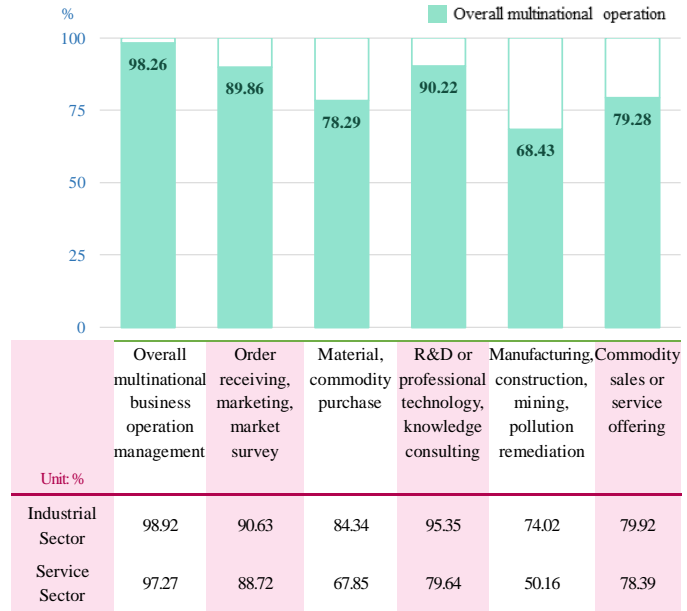
Note: "Overseas investment allocation" refers to enterprises establishing branch units abroad, or having the ability to control a single enterprise abroad; namely, establishing a subsidiary (through which to reinvest and control other foreign enterprises is also within the scope).

**(2) International division of labor for multinational group**

**▲ In 2016, among 3,394 parent companies of multinational group, with the domestic-based business of "Overall multinational business operation management", accounted for 98.26%.**

With an observation on the international division of labor of the multinational group's businesses, in 2016, there were 3,394 parent companies of multinational group in all Industries, and the Industrial Sector contributed more than 60%, of which there were 745 parent companies or accounted for 8%. As for Service Sector, accounting for 40%, among which 904 parent companies of Non-knowledge-intensive Service were major, due to Wholesale and Retail Trade's expansion of overseas branches.

**Figure 15 Ratio of Domestic Based Multi-group Business in 2016**



Note: Each ratio is a domestic-based enterprise number in the division of business ÷ (domestic-based enterprise number + foreign-based enterprise number) \*100%.

Further observe the situation of the international division of labor for multinational group controlled by each parent company. Among them, 98.26% group with the business of "Overall multinational business operation management" was domestic based; among which "Order receiving, marketing, and market survey" accounted for 89.86%, domestic-based "R&D or professional technology, knowledge consulting" also accounted for 90.22%, of which the Service Sector was 79.64%, and the Industrial Sector was 95.35%. "Material, commodity purchase" and "Commodity sales or service offering" were nearly 80% of domestic based business. "Manufacturing, construction, mining, pollution remediation" was only 68.43% domestically.

In summary, when the multinational group conducts the international division of labor, the key technologies and business guidance rights were still domestically mastered. Among the two major sectors, the proportion of domestic-based business of Industrial Sector was higher than that of Service Sector.

**Table 11 International Division of Labor for Multinational Group of All Industries**

2016

Unit: Enterprise

	Year-end No. of parent companies of multinational group	Businesses of international division of labor											
		Overall multinational business operation management		Order receiving, marketing, market survey		Material, commodity purchase		R&D or professional technology, knowledge consulting		Manufacturing, construction, mining, pollution remediation		Commodity sales or service offering	
		Domestic -based	Foreign -based	Domestic -based	Foreign -based	Domestic -based	Foreign -based	Domestic -based	Foreign -based	Domestic -based	Foreign -based	Domestic -based	Foreign -based
<b>Grand total</b>	<b>3 394</b>	<b>3 335</b>	<b>59</b>	<b>3 050</b>	<b>344</b>	<b>2 513</b>	<b>697</b>	<b>2 592</b>	<b>281</b>	<b>1 775</b>	<b>819</b>	<b>2 587</b>	<b>676</b>
<b>Industrial Sector</b>	<b>2 038</b>	<b>2 016</b>	<b>22</b>	<b>1 847</b>	<b>191</b>	<b>1 713</b>	<b>318</b>	<b>1 845</b>	<b>90</b>	<b>1 470</b>	<b>516</b>	<b>1 524</b>	<b>383</b>
Manufacturing	1 964	1 942	22	1 775	189	1 642	315	1 795	90	1 403	512	1 453	380
Consumer goods industry	260	254	6	237	23	232	28	234	12	200	58	196	42
Chemical industry	307	305	2	281	26	264	40	273	14	252	53	236	45
Metal and mechanical industry	652	645	7	589	63	545	105	595	28	502	144	477	117
Information and electronic industry	745	738	7	668	77	601	142	693	36	449	257	544	176
Construction	70	70	-	68	2	68	2	46	-	64	3	67	3
Other industry	4	4	-	4	-	3	1	4	-	3	1	4	-
<b>Service Sector</b>	<b>1 356</b>	<b>1 319</b>	<b>37</b>	<b>1 203</b>	<b>153</b>	<b>800</b>	<b>379</b>	<b>747</b>	<b>191</b>	<b>305</b>	<b>303</b>	<b>1 063</b>	<b>293</b>
Knowledge-intensive	452	437	15	415	37	257	111	251	58	70	95	336	116
Non-knowledge- intensive	904	882	22	788	116	543	268	496	133	235	208	727	177

Note: 1. The parent company of multinational group refers to the enterprise conducting overseas investment allocation and being not controlled by other enterprises.

2. The total number of domestic-based and foreign-based companies of each division of labor is possibly less than the year-end number of parent companies because some of multinational groups did not have the division of labor.

### (3) Manufacturing overseas production

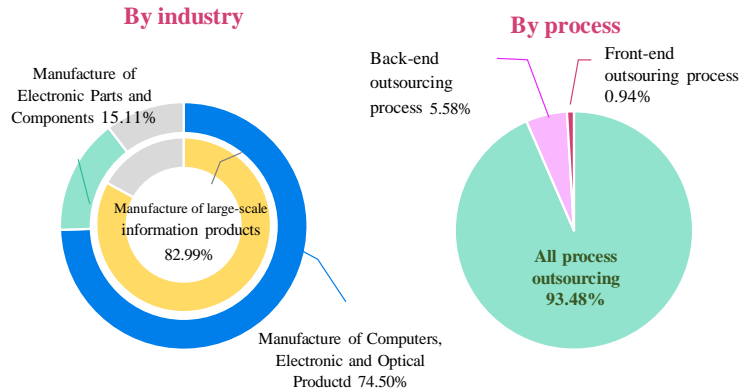
▲ In 2016, the percentage of manufacturing overseas production exceeded 40%, and about 90% outsourcing overseas production from overseas affiliate companies.

The percentage of manufacturing overseas production continued to rise, from 28.33% in 2006, 37.27% in 2011 to 41.27% 2016, but the growth rate slowed down. In 2016, the overseas production revenues was NT\$10 trillion 303.9 billion. Among four main industries, the Information and electronic industry as an important position in the international supply

chain, contributing 90% of overseas production revenues, with 67.37% of overseas production ratio, including Manufacture of Computers, Electronic and Optical Products with the ratio up to 85.79%. Due to the complete domestic upstream and downstream supply chain, the Manufacture of Electronic Parts and Components mastered key technologies, so its overseas production ratio was lower at 32.72%.

In the Information and electronic industry, manufacture of large-scale information products (ie, the top 100 enterprises in the industry's revenues) amounted to NT\$8 trillion 550.8 billion in overseas production, accounting for more than 80% of manufacturing overseas production, and 73.47% of overseas production ratio, decreased slightly by 0.33 percentage points from 2011. Compared with 2006 to 2011, increased by 14.46 percentage points, the growth rate was obviously slowing down.

Figure 16 Manufacturing Overseas Production Revenue Structure



Regarding on the process division of production, in 2016, the overseas production revenues were most from "all processes outsourced to overseas production", accounting for 93.48%. In the latter stage, the proportion of front-end and back-end processes outsourced to overseas companies was less than 10%, which was mainly affected by the technological upgrading in the producing countries and the rise of the local supply chain. In addition, in 2016, the percentage of overseas production revenues from production of foreign affiliated was 89.56%, of which Manufacture of Large-Scale Information Products of Information and electronic industry was 94.38%.

In terms of the distribution of overseas production areas, in 2016, 88.24% of overseas production revenues were concentrated in China, increased by 2.17 percentage points from 2011, especially in Information and electronic industry; the production areas which were located in Asia (excluding mainland China), accounted for 4.49%, where more than 50% of the Consumer goods industry was concentrated; the other was 3.72% of the America. Europe and other areas were less than 2%.

**Table 12 Overview of Overseas Production in Manufacturing**

	2016 Overseas production revenues					Overseas production ratio		
	(NT\$ billion)	Distribution ratio			The percentage of outsourcing overseas production from overseas affiliate companies	2016	2011	2006
		Purchased from overseas or entire processes are authorized to overseas companies	Back-end processes are outsourced to overseas companies	Front-end process are outsourced to overseas companies				
		(%)	(%)	(%)				
<b>Manufacturing</b>	<b>10 303.9</b>	<b>93.48</b>	<b>5.58</b>	<b>0.94</b>	<b>89.56</b>	<b>41.27</b>	<b>37.27</b>	<b>28.33</b>
Consumer goods industry	189.6	86.06	13.46	0.48	67.04	9.16	7.00	7.14
Chemical industry	310.2	96.92	1.07	2.01	34.93	7.26	5.11	4.46
Metal and mechanical industry	570.3	93.94	4.69	1.37	77.46	11.60	11.84	10.19
Information and electronic industry	9 233.9	93.48	5.63	0.89	92.61	67.37	65.60	51.57
Manufacture of Electronic Parts and Components	1 557.4	62.56	32.53	4.92	70.90	32.72	38.73	26.81
Manufacture of Computers, Electronic and Optical Products	7 676.5	99.76	0.17	0.07	97.01	85.79	79.73	73.96
Manufacture of large-scale information products	8 550.8	94.28	5.03	0.69	94.38	73.47	73.80	59.34

Note: 1. Overseas production ratio = (Overseas production revenue ÷ Annual sales product revenue)\*100%, of which sales product revenue contains revenues of products and goods concurrently sold.

2. If part of process of product (goods) are outsourced to foreign production and processing, the value of the product is fully included in the "Overseas production revenues".

3. Manufacture of large-scale information products refers to top 10 enterprises of Information and electronic industry by operating revenues.

**Table 13 Regional Distribution of Overseas Production in Manufacturing**

	2016 Overseas production revenues (NT\$ billion)	Regional distribution of production					2011 Overseas production revenues (NT\$ billion)	Regional distribution of production				
		China (incl. HK, Macao)	Asia (excl. China)	America	Europe	Other areas		China (incl. HK, Macao)	Asia (excl. China)	America	Europe	Other areas
		(%)	(%)	(%)	(%)	(%)		(%)	(%)	(%)	(%)	(%)
<b>Manufacturing</b>	<b>10 303.9</b>	<b>88.24</b>	<b>4.49</b>	<b>3.72</b>	<b>1.77</b>	<b>1.78</b>	<b>9 484.1</b>	<b>86.07</b>	<b>5.09</b>	<b>4.03</b>	<b>3.82</b>	<b>0.98</b>
Consumer goods industry	189.6	33.61	54.90	5.20	1.76	4.54	146.5	45.87	42.34	5.69	1.99	4.11
Chemical industry	310.2	22.07	24.52	6.31	3.19	43.91	262.3	16.80	51.69	8.15	6.05	17.31
Metal and mechanical industry	570.3	83.82	12.10	1.33	2.03	0.72	634.0	86.79	8.21	2.65	1.44	0.92
Information and electronic industry	9 233.9	91.85	2.31	3.76	1.71	0.37	8 441.3	88.87	2.77	3.98	3.96	0.42
Manufacture of Electronic Parts and Components	1 557.4	90.10	7.47	1.51	0.83	0.09	1 717.7	89.86	8.94	0.94	0.09	0.16
Manufacture of Computers, Electronic and Optical Products	7 676.5	92.21	1.27	4.21	1.88	0.43	6 723.6	88.61	1.19	4.76	4.95	0.49
Manufacture of large-scale information products	8 550.8	92.42	1.57	3.87	1.77	0.37	7 870.3	89.14	2.16	4.18	4.21	0.31

Note: 1. If part of process of product (goods) are outsourced to foreign production and processing, the value of the product is fully included in the "Overseas production revenues".

2. Manufacture of large-scale information products refers to top 10 enterprises of Information and electronic industry by operating revenues.



## **(V) Regional development**

### **1. Industrial development of county and city**

#### **▲ Northern region contributed more than half of the Taiwan's employment opportunities and total value of production.**

In 2016, Northern region provided 4,729,519 employment opportunities, or 53.56% of Taiwan area, with a decrease of 0.81 percentage points for past 5 years, and a total value of production of NT\$17 trillion 210.2 billion or 55.55%, with an increase of 1.90 percentage points. Among them, Service Sector benefited from the growth of industries such as Food and Beverage Service Activities, Human Health Activities and Financial and Insurance Activities, the contribution of employment opportunities increased by 0.55 percentage points to 34.76% for past 5 years, and total value of production contributed 3.51 percentage points to 27.53%. Taipei City as the national financial center, its total value of production increased by 2.01 percentage points as the most; Industrial Sector's employment and output contribution decreased by 1.36 and 1.61 percentage points respectively, of which Taoyuan City's output of mobile-related industries declined sharply, so its total value of production contribution reduced by 1.46 percentage points.

Central region contributed 22.56% of employment opportunities, with an increase of 0.97 percentage points for past 5 years, and contributed 22.01% of total value of production, also with an increase of 0.56 percentage points, both of which surpassed Southern region for past 5 years. Among them, Service Sector's employment opportunities contributed 11.59%, with an increase of 0.82 percentage points; its total value of production contributed 6.07%, also with an increase of 1.26 percentage points. Especially in Taichung City, due to magnet effect of population, people's livelihood consumption were vibrant, contributed employment opportunities and total value of production increased by 0.90 and 1.13 percentage points respectively. As for Industrial Sector, provided 10.97% of employment opportunities, with an increase of 0.15 percentage points, and contributed 15.94% of total value of production, decreased by 0.70 percentage points, because it was affected by the sharp decline in the product price of petrochemical industry. Yunlin County fell 1.16 percentage points as the most.

Southern region contributed 22.43% of the country's employment opportunities and 21.53% of total value of production, which decreased by 0.11 and 2.49 percentage points respectively comparing with 2011. Among them, Service Sector's employment and total value of production contributed 12.76% and 6.10% respectively, with an increase of 0.08 and 0.59 percentage points. Persons engaged in Industrial Sector accounted for 9.67%, with a decrease of 0.19 percentage points; total value of production also decreased by 3.08 percentage points because international petrochemicals, metal prices plummeted, and some petrochemical industries moved out of production lines due to environmental protection needs. Among them, Kaohsiung City as an important petrochemical and metal city, declined to 2.16 percentage points as the most.

The persons engaged in Eastern region accounted for 1.24% of the country, with a decrease of 0.05 percentage points for past 5 years, and Total value of production accounted for 0.75%, which was same as 2011. Both persons engaged and total value of production of Kinma area accounted for less than 1%; benefiting from mini-three-links across the Taiwan's strait and tourism trends, the total value of production driven by Service Sector accounted for 0.02 percentage points.

**Table 14 Operation Status of Establishment Units of All Industries**

2016

	Number of persons engaged, end of 2016					Annual total value of production				
	(Person)	Structure				(NT\$ 1,000,000)	Structure			
		Industrial Sector		Service Sector			Industrial Sector		Service Sector	
		(%)	Increase or decrease for past 5 years (Percentage point)	(%)	Increase or decrease for past 5 years (Percentage point)		(%)	Increase or decrease for past 5 years (Percentage point)	(%)	Increase or decrease for past 5 years (Percentage point)
<b>Grand total</b>	<b>8 830 013</b>	<b>39.76</b>	<b>-1.45</b>	<b>60.24</b>	<b>1.45</b>	<b>30 983 006</b>	<b>59.80</b>	<b>-5.43</b>	<b>40.20</b>	<b>5.43</b>
<b>Taiwan area</b>	<b>8 811 981</b>	<b>39.70</b>	<b>-1.44</b>	<b>60.10</b>	<b>1.44</b>	<b>30 933 704</b>	<b>59.71</b>	<b>-5.43</b>	<b>40.13</b>	<b>5.41</b>
<b>Northern region</b>	<b>4 729 519</b>	<b>18.80</b>	<b>-1.36</b>	<b>34.76</b>	<b>0.55</b>	<b>17 210 207</b>	<b>28.02</b>	<b>-1.61</b>	<b>27.53</b>	<b>3.51</b>
New Taipei City	1 314 087	6.31	-0.53	8.58	0.54	3 617 718	7.51	0.04	4.17	0.55
Taipei City	1 788 559	2.63	-0.61	17.63	-0.38	6 950 449	4.40	-1.04	18.04	2.01
Taoyuan City	931 550	5.79	-0.10	4.76	0.31	3 567 019	8.40	-1.46	3.12	0.72
Keelung City	80 741	0.21	-0.03	0.70	-0.03	267 299	0.22	0.01	0.65	0.04
Hsinchu City	250 432	1.63	-0.20	1.21	-0.03	1 488 439	4.15	0.60	0.66	0.04
Yilan County	113 535	0.50	-0.01	0.79	-0.01	259 429	0.51	-0.01	0.32	0.02
Hsinchu County	250 615	1.74	0.12	1.09	0.16	1 059 854	2.84	0.26	0.58	0.15
<b>Central region</b>	<b>1 992 278</b>	<b>10.97</b>	<b>0.15</b>	<b>11.59</b>	<b>0.82</b>	<b>6 820 532</b>	<b>15.94</b>	<b>-0.70</b>	<b>6.07</b>	<b>1.26</b>
Taichung City	1 193 234	5.98	0.04	7.53	0.90	3 746 983	7.76	0.76	4.34	1.13
Miaoli County	157 213	1.02	0.03	0.76	-0.03	570 971	1.51	-0.16	0.34	0.01
Changhua County	384 420	2.60	0.04	1.75	-0.03	1 039 962	2.58	-0.20	0.78	0.09
Nantou County	105 428	0.48	-0.02	0.71	0.00	267 737	0.59	0.07	0.27	0.02
Yunlin County	151 983	0.89	0.06	0.83	-0.02	1 194 880	3.51	-1.16	0.35	0.02
<b>Southern region</b>	<b>1 980 466</b>	<b>9.67</b>	<b>-0.19</b>	<b>12.76</b>	<b>0.08</b>	<b>6 670 558</b>	<b>15.43</b>	<b>-3.08</b>	<b>6.10</b>	<b>0.59</b>
Tainan City	661 791	3.98	-0.10	3.51	0.05	2 244 960	5.70	-0.80	1.54	0.15
Kaohsiung City	964 217	4.37	0.00	6.55	0.00	3 569 013	8.07	-2.16	3.45	0.33
Chiayi City	74 101	0.14	-0.04	0.70	-0.03	166 946	0.21	-0.04	0.33	0.04
Chiayi County	102 879	0.58	-0.05	0.58	0.00	300 924	0.74	-0.14	0.23	0.02
Pintung County	160 852	0.57	-0.01	1.25	0.05	361 326	0.67	0.05	0.50	0.06
Penghu County	16 626	0.03	-0.01	0.16	-0.01	27 388	0.03	0.00	0.06	0.01
<b>Eastern region</b>	<b>109 718</b>	<b>0.25</b>	<b>-0.04</b>	<b>0.99</b>	<b>-0.01</b>	<b>232 407</b>	<b>0.32</b>	<b>-0.04</b>	<b>0.43</b>	<b>0.04</b>
Taitung County	36 778	0.07	-0.01	0.35	0.01	66 138	0.07	0.00	0.14	0.02
Hualien County	72 940	0.19	-0.02	0.64	-0.02	166 269	0.25	-0.03	0.28	0.02
<b>Kinma area</b>	<b>18 032</b>	<b>0.06</b>	<b>-0.01</b>	<b>0.14</b>	<b>0.01</b>	<b>49 302</b>	<b>0.09</b>	<b>0.00</b>	<b>0.07</b>	<b>0.02</b>
Kinmen County	15 365	0.05	-0.01	0.12	0.00	41 733	0.08	0.00	0.06	0.02
Lienchiang County	2 667	0.01	0.00	0.02	0.00	7 568	0.01	0.00	0.01	0.00

Note: The statistical items in this table are calculated by the establishment unit data.

## 2. Development of industry-specific areas

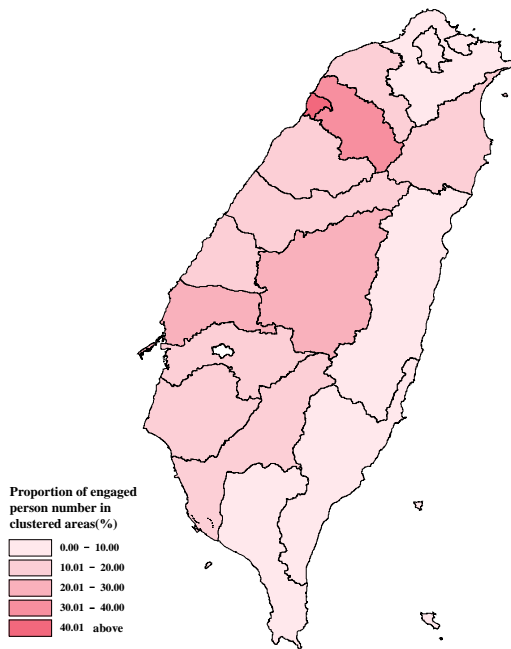
### ▲ The industry-specific areas in Hsinchu City contributed 43.08% of the employment opportunities and 76.19% of total value of production. Industrial cluster effect was most significant.

In order to elaborate the industrial cluster effect, the government has set up various periods of economic development plan since the 1950s, and has continued to develop such specific areas as industrial areas, science industrial parks, export processing zones and free trade zones in various places, prompting industry to grow rapidly. There 91 industry-specific areas have been established in 2016, attracting 16,271 manufacturers, and providing 1,006,841 employment opportunities, creating a total value of production of NT\$ 7 trillion 544.1 billion, accounting for 1.19%, 11.40%, and 24.35% respectively, with significant contribution to regional economic development.

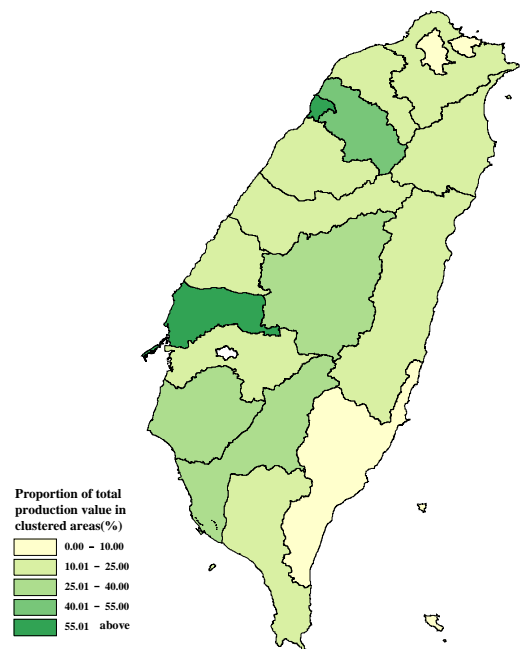
Among the counties/cities, due to the setting of the science industrial park in Hsinchu City where contributed 107,891 or 43.08% employment opportunities and NT\$ 1trillion 134.1 billion or 76.19% of the total value of production, industrial cluster effect was most obvious. Hsinchu County also has a total of 81,777 or 32.63% employment opportunities, with a total value of production of NT\$470.2 billion or 44.36% were from the science industrial park. Yunlin County benefited from the formation of the petrochemical industry settlements. 80% of the total value of production in the county came from industry-specific areas, and where provided 35,341 or 23.25% of employment opportunities. A total of 14 industry-specific areas were located in Kaohsiung City including industrial zone, industrial science parks, export processing zones and free trade zones, with the highest density, providing 143,470 employment opportunities and contributed to NT\$ 1trillion 286.4 billion total value of production, ranking the highest of all counties/cities, accounting for 14.88% and 36.04% of the city. In addition, industry-specific areas in Nantou County and Tainan City created 22.25% and 18.08% to employment opportunities respectively, and contributed more than 35% to total value of production.

**Figure 17 Contribution of Industry-specific Area to Each County**

**Persons engaged**



**Total value of production**



**Table 15 Industry-specific Areas Overview of Establishment Units of All Industries**

2016

	No. of industry specific areas  (Area)	Year-end	Accounting for the area  (%)	Year-end No.	Accounting for the area  (%)	Annual	Accounting for the area  (%)
		No. of establishment units  (Unit)		of persons engaged  (Person)		total value of production  (NT\$ million)	
<b>Grand total</b>	<b>91</b>	<b>16 271</b>	<b>1.19</b>	<b>1 006 841</b>	<b>11.40</b>	<b>7 544 094</b>	<b>24.35</b>
<b>Taiwan area</b>	<b>91</b>	<b>16 271</b>	<b>1.19</b>	<b>1 006 841</b>	<b>11.43</b>	<b>7 544 094</b>	<b>24.39</b>
<b>Northern region</b>	<b>26</b>	<b>6 892</b>	<b>1.09</b>	<b>455 533</b>	<b>9.63</b>	<b>3 128 402</b>	<b>18.18</b>
New Taipei City	6	2 480	1.11	81 438	6.20	519 555	14.36
Taipei City	1	479	0.24	26 182	1.46	104 940	1.51
Taoyuan City	9	2 369	2.13	143 036	15.35	828 082	23.21
Keelung City	2	91	0.46	2 853	3.53	9 817	3.67
Hsinchu City	1	394	1.54	107 891	43.08	1 134 064	76.19
Yilan County	4	383	1.49	12 356	10.88	61 745	23.80
Hsinchu County	3	696	2.55	81 777	32.63	470 197	44.36
<b>Central region</b>	<b>31</b>	<b>4 695</b>	<b>1.40</b>	<b>253 919</b>	<b>12.75</b>	<b>2 151 719</b>	<b>31.55</b>
Taichung City	10	2 499	1.33	130 185	10.91	778 310	20.77
Miaoli County	5	256	1.03	24 925	15.85	132 062	23.13
Changhua County	7	784	1.15	40 012	10.41	192 177	18.48
Nantou County	3	768	3.15	23 456	22.25	95 896	35.82
Yunlin County	6	388	1.25	35 341	23.25	953 274	79.78
<b>Southern region</b>	<b>30</b>	<b>4 283</b>	<b>1.17</b>	<b>292 749</b>	<b>14.78</b>	<b>2 227 497</b>	<b>33.39</b>
Tainan City	7	1 586	1.42	119 660	18.08	797 400	35.52
Kaohsiung City	14	1 898	1.13	143 470	14.88	1 286 391	36.04
Chiayi City	-	-	-	-	-	-	-
Chiayi County	5	453	2.08	16 646	16.18	75 190	24.99
Pintung County	4	346	0.85	12 973	8.07	68 517	18.96
Penghu County	-	-	-	-	-	-	-
<b>Eastern region</b>	<b>4</b>	<b>401</b>	<b>1.33</b>	<b>4 640</b>	<b>4.23</b>	<b>36 477</b>	<b>15.70</b>
Taitung County	1	116	1.04	766	2.08	1 436	2.17
Hualien County	3	285	1.51	3 874	5.31	35 040	21.07
<b>Kinma area</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Kinmen County	-	-	-	-	-	-	-
Lienchiang County	-	-	-	-	-	-	-

Note: The statistical items in this table are calculated by the establishment unit data.