

# **China's Industrial Economy 2017 Q2 Report<sup>1</sup>**

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<sup>1</sup> This report is based on a nationwide quarterly survey of industrial firms, which is implemented by Beijing Allinfo Co., based on the questionnaire and sample provided by Professor Gan Jie, Director of the Center on Finance and Economic Growth. We thank Beijing Allinfo for its hard work and professionalism. We acknowledge the able research assistance of Harry Leung and Jessy Yao who provided support to the data analysis and presentation. Mark Dreyer provided excellent copy editing.

## **Executive Summary**

The key findings about China's industrial economy in 2017 Q2 are as follows:

1. Although official data for second quarter GDP and industrial growth exceeded expectations, we found that the industrial economy has not yet bottomed out. Our Business Sentiment Index in the second quarter stood at 46, indicating a slight contraction. Overcapacity continued to be at a historically high level.
2. Product prices and costs continued to rise, but to a substantially lesser extent than in the previous quarter.
3. Production stayed flat. Real estate is not effective in boosting industrial growth.
4. The gap between state-owned and private firms continues to widen.

All these findings suggest that the structural problems of China's industrial economy remain a significant concern. Supply-side reform this year should focus on a reduction of overcapacity, while facilitating industrial consolidation to improve overall competitiveness. Moreover, against this background of overcapacity, the loosening of monetary policy would not revive the industrial economy.

## **Introduction**

This report is based on data collected from our quarterly surveys of around 2,000 industrial firms in China. Conducted through telephone interviews, this study is now in its fourth year, having launched in 2014 Q2. If we exclude the sectors of agriculture, real estate and finance from China's GDP, the industrial sector now accounts for 50% of non-agricultural sectors.

Our survey design ensures that our sample fully represents industry, region and company size. As a result, we are able to construct business indices that are, to the best of our knowledge, the most informative ones available about the Chinese economy. Furthermore, our survey questions allow us to understand the underlying mechanisms behind the data and analyze why the economy is doing well or not.

There were a total of 2,050 firms surveyed for our 2017 Q2 report, of which 1,670 firms were also polled in our 2017 Q1 survey. The initial survey sample was based on a stratified random sampling by industry, region and size from the 2008 Economic Census. Starting from this quarter, we have surveyed additional firms from the 2013 Industrial Enterprises database, which allows us to cover firms founded after 2008. Appendix A details the sampling procedure and compares our sample with the population.

### **I. 2017 Q2 Key Findings**

#### **I.1 The Industrial Economy Has Not Yet Bottomed Out**

Although official GDP data for the first two quarters and industrial growth exceeded expectations, we found that China's industrial economy has not yet bottomed out. Our Business Sentiment Index in the second quarter stood at 46, down from 47 in the previous quarter, but still indicating a slight contraction (Figure 1). Overcapacity remained at a historical high, both in terms of its prevalence and severity.<sup>2, 3</sup>

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<sup>2</sup> Our BSI is the simple average of three diffusion indices, including current operating conditions, expected change in operating conditions and investment timing. Compared with other economic indices, our BSI is more forward-looking and is a reflection of the absolute level of economic activities.

<sup>3</sup> Specifically, the three questions underlying our Business Sentiment Index are the following: 1. How are current operating conditions – “good”, “neutral” or “difficult”? 2. What is the expected change in operating conditions during the next quarter – “up”, “same” or “down”? 3. To what extent is it now a good time to invest – “good”, “medium” or “bad?” The diffusion index is based on answers to multiple-choice questions, with the choices in analog to “good,” “neutral” and “bad”, or “up,” “same” and “down.” The diffusion index is computed as a  $100 * \% \text{ of firms answering “good”} + 50 * \% \text{ of firms answering “neutral”}$ . The diffusion index ranges between 0 and 100. A larger value indicates better operating conditions, with 50 marking the turning point between expansion and contraction.

The low BSI in Q2 was, again, a result of weak investment. When asked whether it was currently a good time to make fixed investments, only 1% of the firms considered the timing to be “good”, 71% of the firms replied “average” and 28% of the firms declared the timing was “bad”, with a diffusion index of 36, far below the turning point of 50. In reality, only 8% of firms made any fixed investments in Q2 and a mere 1% made expansionary investments (Table 1).

## **I.2 Product Prices and Costs Continued to Rise, but at a Lesser Rate**

Product prices continued to rise in the second quarter, but at a much slower rate, both in terms of prevalence and magnitude. The proportion of firms reporting increases in product prices was 17%, substantially lower than the 30% in the last quarter, with a diffusion index of 57 (Q1: 64). The proportion of firms with substantial price increases (above 5%) also dropped significantly, down from 21% in Q1 to 7% in Q2.

In terms of production costs in Q2, close to 32% of the firms reported unit cost rises, down from 48% in the previous quarter, but still a significant increase, with the diffusion index standing at 66 (Q1: 74). Meanwhile, the diffusion indices of raw material costs and labor costs were 63 and 57, respectively, in Q2 (Q1: 70 and 65).

As in 2017 Q1, cost rises have been the driving force behind the price rises in Q2. As shown in Figure 3, among firms with product cost inflation above 5%, cost rises were the most prominent. The proportion of firms with unit cost increases above 5% and 10% were 93% and 10%, respectively, far above the whole sample (8% and 1%). Unit cost increases are mostly related to raw material costs. 26% of these firms reported raw material cost rises above 5%, much higher than the whole sample (2%). Meanwhile, these firms were similar to the whole sample in terms of production expansion and overcapacity. All these patterns in the data point towards price inflation driven by cost run-ups, rather than by increased demand.

## **I.3 Production Stayed Flat, Contribution of Real Estate Insignificant**

While official statistics indicate industrial growth, we found that production has remained flat. Our analyses are based on the diffusion indices of Production and Electricity Consumption, both of which are at 50 (Table 1), as well as the distribution of production changes across firms in different size categories (Figure 4).

The industrial growth found in official data is possibly due to two factors. The first is price inflation, which means that even if production stayed flat, the industrial value added could still rise. The second factor may be the variation across different types of firms. The production diffusion indices for state-owned and foreign firms are 59 and

52, respectively (Table 1). Private firms, which represent the vast majority of industrial firms, did not increase their level of production from the previous quarter.

Among different product types, capital goods (56) outperformed other products, while the production of nondurable consumer goods (47) has been on the decline.

Recent media discussions on industrial growth have attributed a significant role to real estate, but our survey does not support this view. First, industries directly related to real estate, such as cement, construction-related metal products, iron & steel and coal mining, only accounted for a small proportion (7%) of the overall sample. Second, with the exception of construction-related metal products, the business sentiment, operating conditions and production indices of real estate-related industries were below the whole sample. Meanwhile, their overcapacity problem was more severe than that for the overall sample (Figure 6).

#### **I.4 Gap between State-Owned and Private Firms Continues to Widen**

As shown in Figure 5, the advantage of state-owned firms over private firms has increased in recent quarters, in terms of business sentiment and operating conditions. After two years of capacity curtailment, state-owned firms have been faring better in production and investment since 2016 Q4, as compared with private firms.

Additionally, the recent media reports of export expansion have cited the fact that exports of state-owned firms dropped in the past year before first recovering significantly in Q1 and then continuing to grow in Q2, with a diffusion index of 61, much higher than that of private firms (51).

## **II. Challenges and Priorities**

### **II.1 Overall Conditions and Industry & Regional Distribution**

Consistent with flat production, employment and electricity consumption – two of our major indices – remained flat in the second quarter, registering a mark of 50 (Figure 7).

As shown in Table 2.2, the top three industries included Production & Supply of Water (63), Gas Production & Supply (60), Pharmaceuticals (58) and Power Production & Supply (58). Pharmaceuticals has been consistently at the top of this list in the ten quarters since 2015 Q1. Production & Supply of Water and Power Production & Supply have each appeared in seven out of those ten quarters. On the other hand, the worst-performing industries were Coal Mining & Washing (37), Non-metallic Mineral Products (38), Leather-Related Products (38), Rubber & Plastic

Products (40) and Mining & Processing of Nonmetal Ores (41). During the ten quarters since 2015 Q1, Mining & Processing of Nonmetal Ores and Leather-Related Products have each featured on the list eight times, and the former was the single worst performing industry on four occasions. Coal Mining is back on the list after dropping off it in 2016 Q2.

Table 3.1 displays regional business conditions. In Q2, the BSI ranged from 41 (Heilongjiang and Shanxi) to 53 (Inner Mongolia). Inner Mongolia has been the top-performing province for six consecutive quarters. The bottom five provinces are Heilongjiang (41), Shanxi (41), Henan (42), Chongqing (44) and Hebei (44). Heilongjiang has been on the list for four consecutive quarters, while Q2 was the first time that Chongqing was on the list. Shanxi and Hebei have appeared on the list seven and six times, respectively, out of ten quarters since 2015 Q1.

## **II.2 Challenges and Priorities**

Weak demand is still by far the biggest challenge for the industrial economy (Figure 8). 72% of the firms surveyed in Q2 cited a lack of orders. Costs were listed as the second largest issue, with labor and raw material costs both cited by 16% of firms. 12% of firms cited macro and industrial policies as limiting factors. In addition, financing was not found to be a bottleneck, with only 2% replying that financing was a limiting factor, a finding consistent with past surveys.

### **II.2.1 Overcapacity Still Near a Historical High**

In 2017 Q2, close to two-thirds (65%) of the firms reported oversupply in the domestic market, with a diffusion index of 82 (Q1: 83), still close to historically high levels. The proportion of firms with severe overcapacity is on the rise: 36% of firms reported that their excess capacity was above 10%, up from 33% in Q1, while 16% reported that their excess capacity was above 20%, up from 13% in Q1 (Figure 9). Most of the firms said they expect that the problem of overcapacity will persist in Q3.

We categorize an industry as having severe excess capacity if more than 10% of firms report excess capacity of more than 20%. There are 38 industries and 31 regions in total. In Q2, the number of industries and regions with severe excess capacity accounted for more than half of the total firms (22 industries and 21 regions in 2017 Q2 versus 16 industries and 20 regions in 2017 Q1). Overall, both the prevalence and severity of overcapacity are close to historically high levels.

Moreover, overcapacity in the international market is substantially better than in the domestic market, with the diffusion index 10 points lower.

Weak demand has not caused inventory problems: thanks to the “order-based”

production model adopted by many Chinese firms, the finished-goods inventory stayed largely flat. In Q2, for example, as many as 44% of firms said they did not have significant levels of inventory, because they started production only after receiving orders. For those carrying inventories, 80% said they expected their inventory to be digested within three months, with a further 13% saying it would take between four to six months. This leaves only 7% of the whole sample who said they expected to carry inventory for more than six months.

## **II.2.2 Curtailment of Overcapacity**

Each quarter, we attempt to call back all the firms that have been surveyed in the previous quarter. In Q2, about 4% of firms had suspended production or were suspected to have suspended production, significantly higher than the 2% figure recorded in Q1. Those suspected of having suspended production included cases where, after between five to nine attempts to reach them, the phone number was either wrong, suspended or did not exist, and the line could not be connected or was busy (Figure 10A).

In Q2, the proportion of firms reducing workers by more than 10% was 0.9% (Q1: 1.7%), while the proportion of firms reducing workers by more than 20% was 0.7% (Q1: 1.5%, Figure 10B). Based on the size distribution of firms with employment reduction and the number of industrial workers in 2015 being 220 million, we estimate that a total of 480,000 jobs were lost in 2017 Q2.

Consistent with an improved industrial structure, firms with severe overcapacity are more likely to reduce employment and production. Among those with severe overcapacity (above 20%), the proportion of firms reducing production by more than 5% and 10% were 22% and 13%, respectively, both significantly more than that of the whole sample (7% and 4%). Moreover, the proportion of firms reducing employment by more than 5% and 10% were 3% and 2%, respectively, also higher than that of the whole sample (1.4% and 1%).

Capacity utilization remained stable in 2017 Q2. About 72% of firms reported a capacity utilization rate above 80%, while 14% were at levels of below 70% (Figure 10C). There is no consensus as to what level of capacity utilization should be considered healthy. Nevertheless, if we take the examples of the two largest western industrial nations, the US and Germany, their monthly average capacity utilizations were 79% (1994-2015) and 83% (1992-2015), respectively. Their lowest points after the financial crisis in 2008 were 67% and 70%, respectively, both measured in June 2009. Given the low profit margin of Chinese industrial firms, their sustainable utilization rate may be higher than that of their western counterparts.

Consistent with overcapacity and the resulting lack of orders, 28% of firms reported difficulties in collecting trade receivables from their customers in 2017 Q2, up

slightly from 25% in 2017 Q1. This problem was more prominent among private firms (29%) and firms producing capital goods and intermediate goods (33% and 34%, respectively). SOEs were disproportionately more likely to delay payment, accounting for about 18% of all firms that have done so.

### **II.2.3 Rising Costs and Low Margins**

Cost rises are the second biggest challenge facing the industry economy. This has become a more prominent problem since 2016 Q4, mainly due to increases in raw materials and labor costs. In Q2, unit costs were still rising, though to a lesser extent, with a diffusion index of 66 (Q1: 74).

Overcapacity means a lack of pricing power, which, combined with rising costs, results in low profit margins. As shown in Figure 12, as many as 21% of the firms surveyed had gross margins below 10%, while 72% of the firms had gross margins below 15%, but only 4% of the firms had gross margins above 20%. Low margins may make it difficult for the firms to invest in R&D and industrial upgrading.

### **II.2.4 Financing is Not a Bottleneck**

Our survey has consistently found, since its inception in the second quarter of 2014, that financing is not a bottleneck for the industrial economy. In Q2, only 2% of firms cited financing as a constraining factor (2016: 3-4%). 24% of firms said they had sufficient funds, 73% answered “neutral”, while only 3% reported insufficient funds. Of those, the vast majority (97%) reported insufficient funds for production, not for expansion, while 1.4% reported insufficient funds due to operating losses.

As shown in Table 6.1 and Figure 13B, only a small fraction of firms (1.6%) obtained new loans in Q2. When asked about the reasons, the vast majority of firms without new loans (98%) reported that they did not have the need for capital. Moreover, the diffusion index reflecting an “accommodating” bank lending attitude increased from 70 in 2017 Q1 to 74 in 2017 Q2 (Figure 13C), while the percentage of firms reporting a “difficult” lending attitude rose to 9% in Q2, up from 7% in Q1. There were no firms who borrowed from financial institutions other than banks in Q2.

Table 6.2 provides an overview of how Chinese firms have been financed. Internally-generated funds were, by far, the most important source of financing, with 100% of surveyed firms reporting this as their primary funding source. In Q2, 1% of firms reported the founder’s own capital as the primary source of funds, while 48% reported this as the second most important source of funds. 51% of firms indicated bank loans as their second most important source of funds. Sources of financing were highly concentrated in Chinese firms: in the case of internal funds, 93% of firms

reported that this largest financing source accounted for more than 50% of their total funds. These patterns have been highly consistent over time.

Taken together, against the background of overcapacity, investment opportunity has been scarce, resulting in low loan demand. Thus, financing is not a bottleneck for the industrial economy at the moment.

### **III. Conclusion**

Although official data for first two quarters GDP and industrial growth exceeded expectations, we found that the industrial economy has not yet bottomed out. Our Business Sentiment Index in the first quarter stood at 46, indicating a slight contraction. Investment was still sluggish. Production and electricity consumption have stayed flat. Product prices and costs continued to rise, though to a much lesser extent.

The biggest challenge facing the industrial economy is still overcapacity. Both its prevalence and severity remain at close to historically high levels.

All these findings suggest that the structural problems of China's industrial economy are still a main concern. Supply-side reform this year should focus on the reduction of overcapacity, while facilitating industrial consolidation to improve overall competitiveness. Moreover, against this background of overcapacity, the loosening of monetary policy would not revive the industrial economy. Given the government's strong commitment to economic development, we remain optimistic about the long-term outlook of the Chinese economy.

Figure 1. Business Sentiment Index

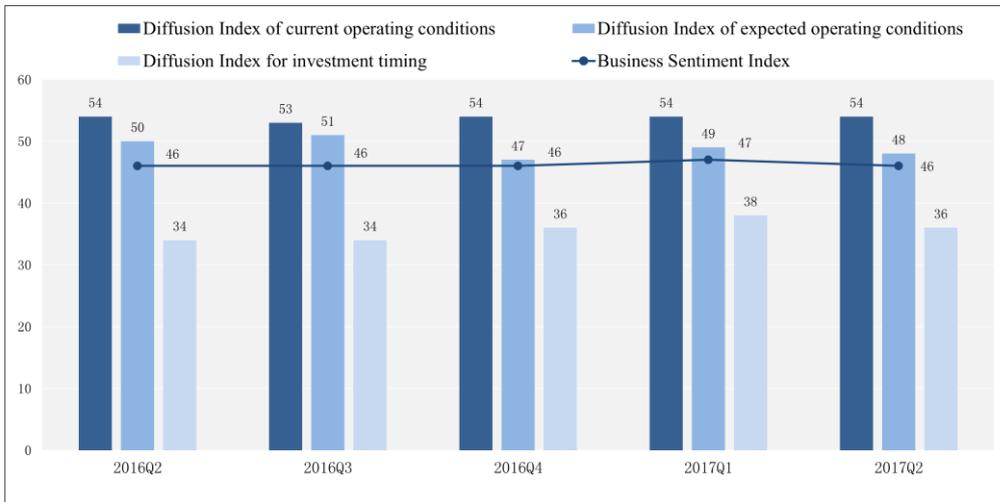


Figure 2. Investment

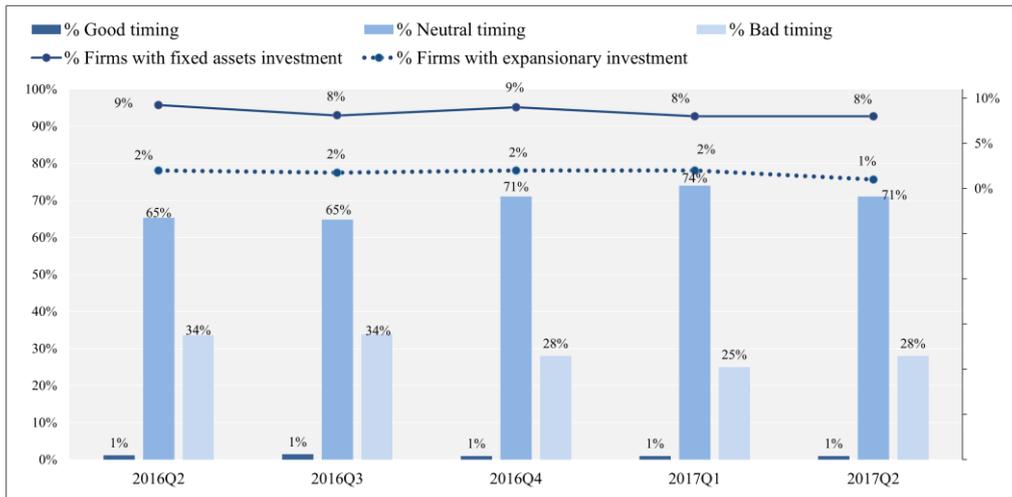


Figure 3. Cost Driven Price Increases

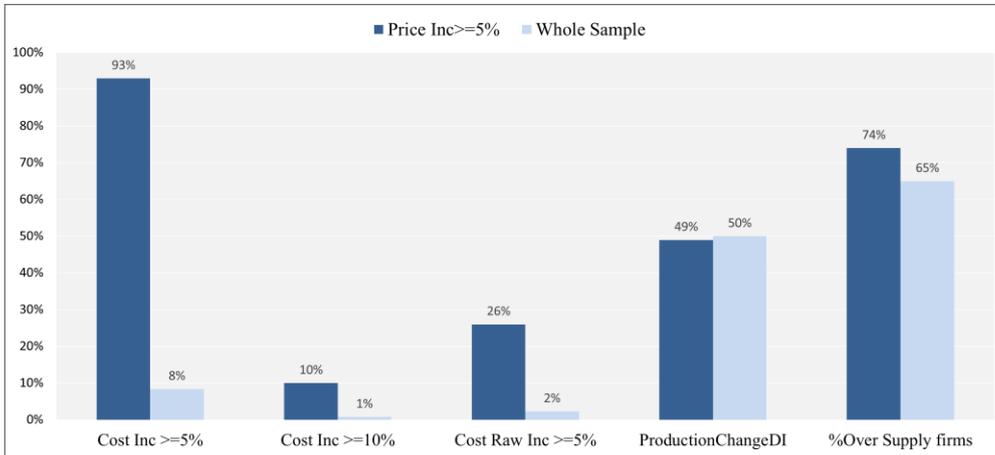
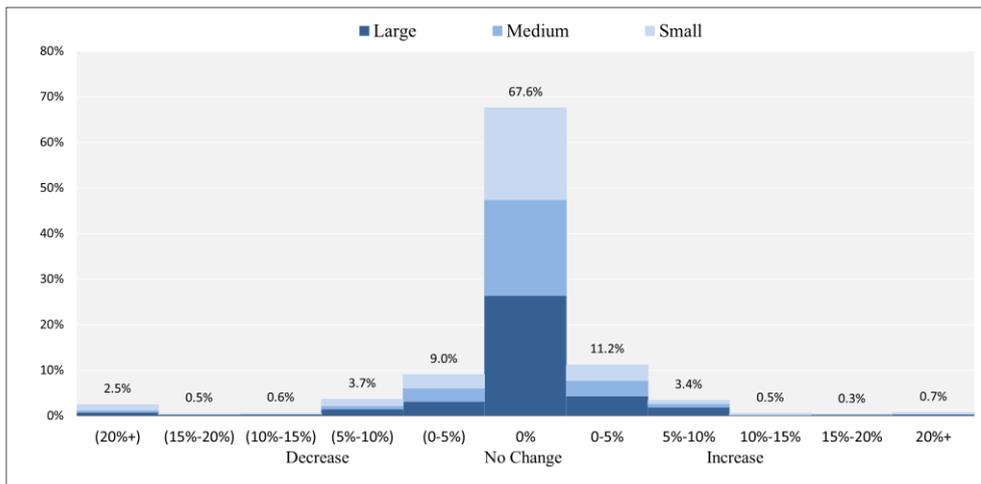


Figure 4. Distribution of Production Increases

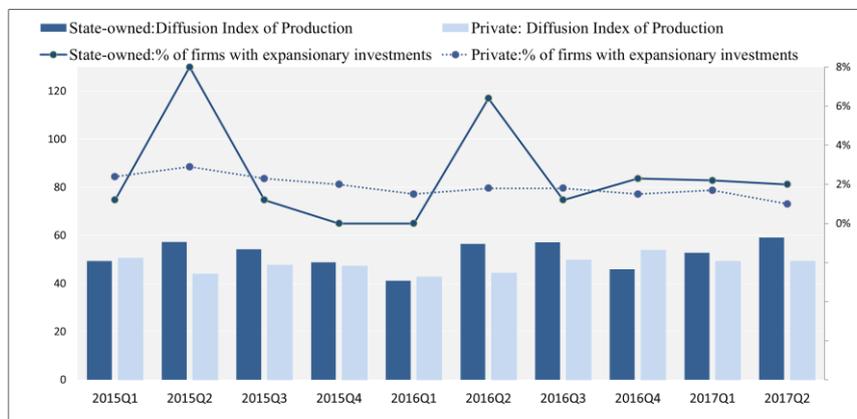


## Figure 5. Comparison between State-owned and Private Firms

### Figure 5A. Business Sentimental Index and Current Operating Condition



### Figure 5B. Expansionary Investment and Production



### Figure 5C. Changes in Export

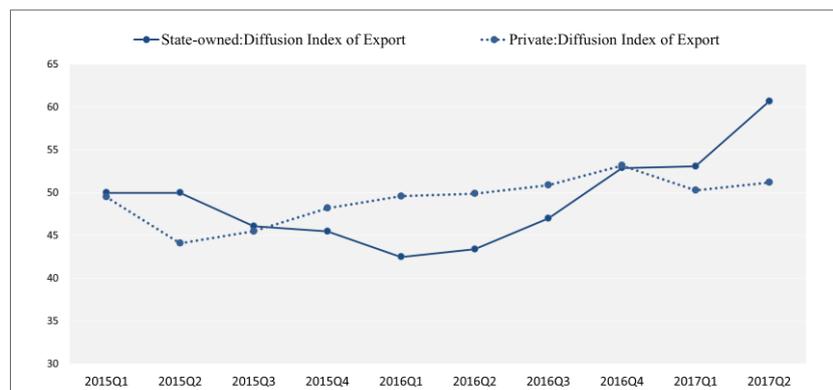


Figure 6. Comparison between Real-estate Related Industries and the whole sample

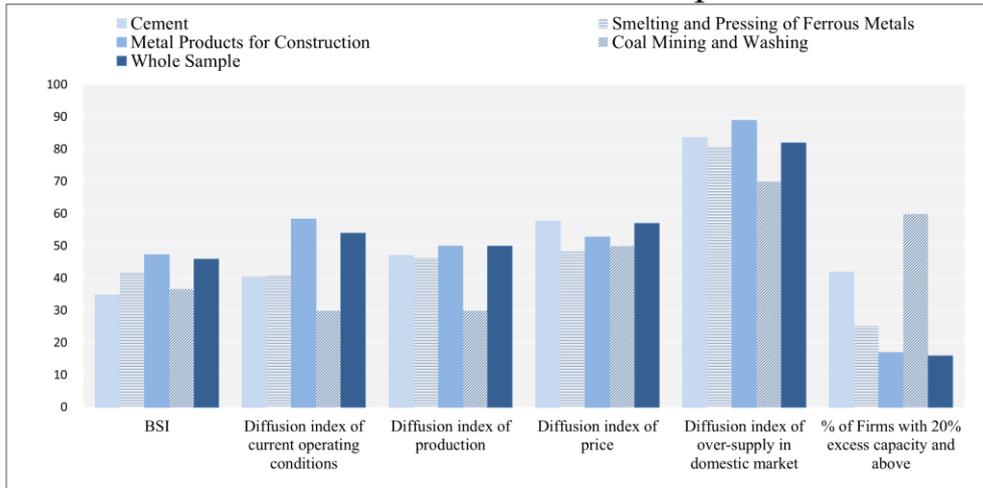


Figure 7. Other Main Economic Indices

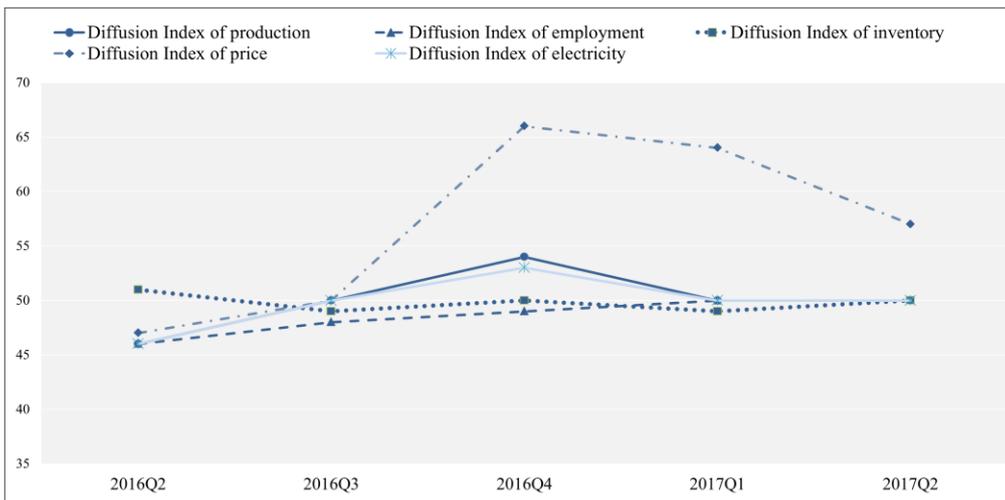


Figure 8. Factors Constraining Production of Next Quarter

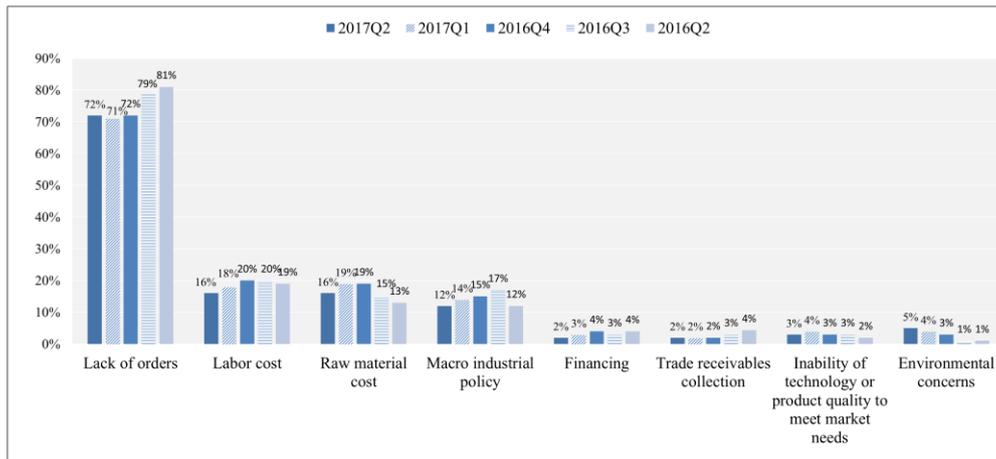


Figure 9A. Excess Capacity

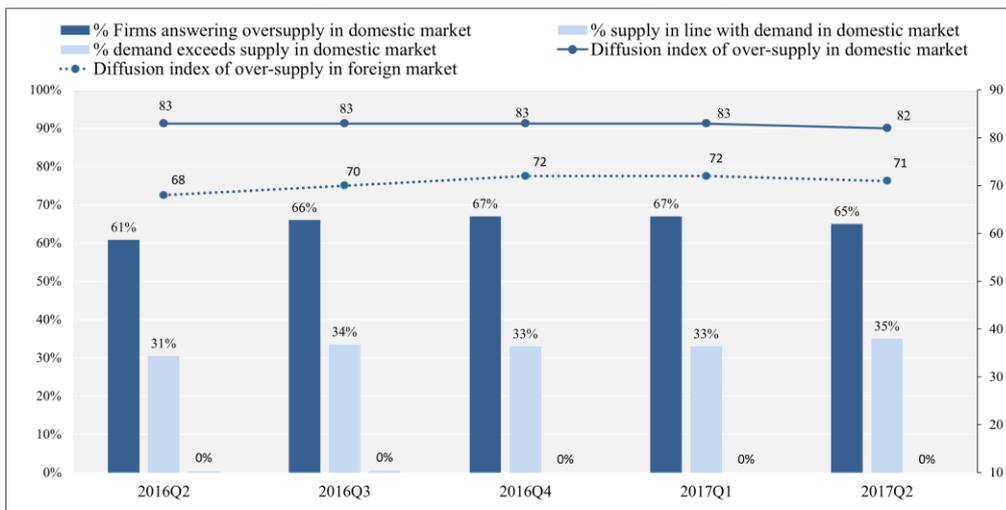


Figure 9B. Firms with Severe Excess Capacity

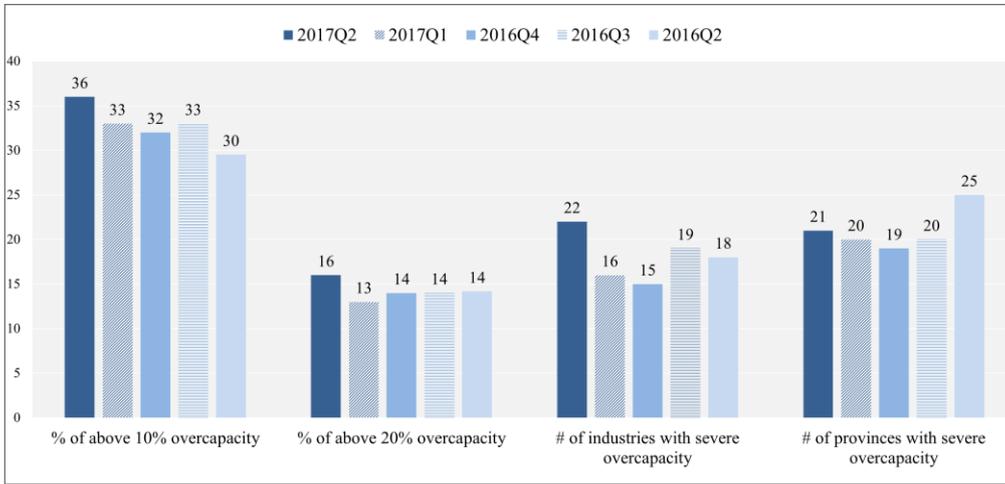
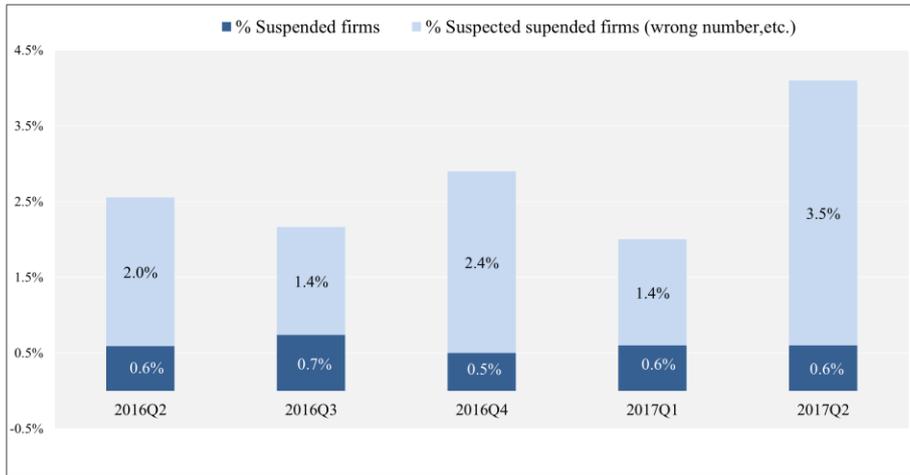
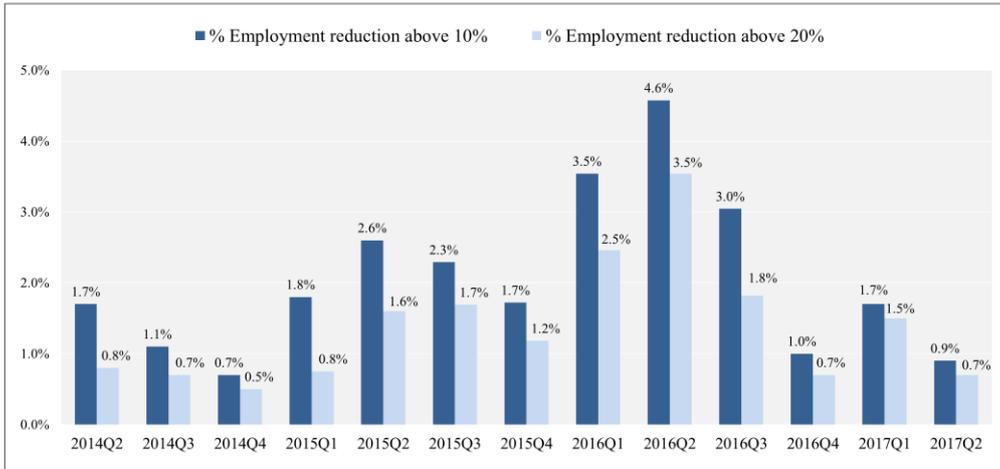


Figure 10A. Suspended Production



### Figure 10B. Firms with Employment Reduction



### Figure 10C. Capacity Utilization

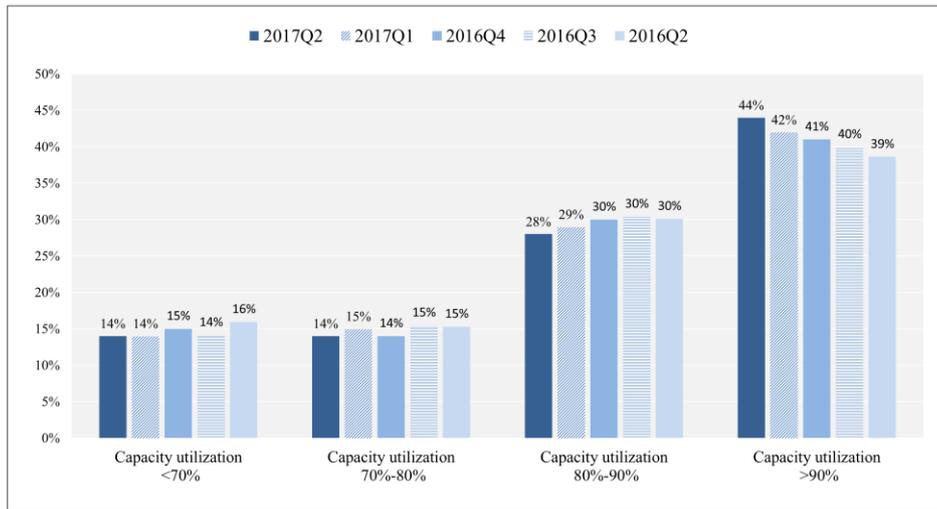


Figure 11. Costs

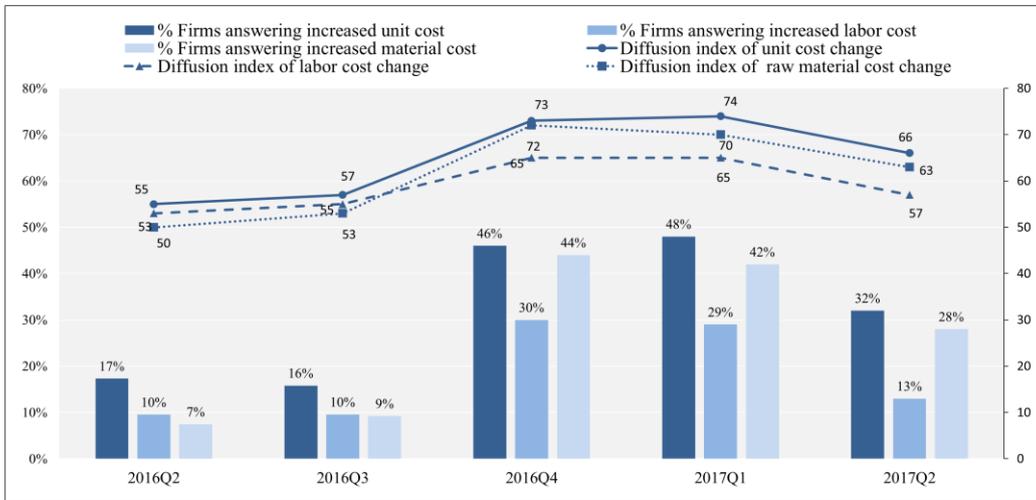


Figure 12. Gross Margins

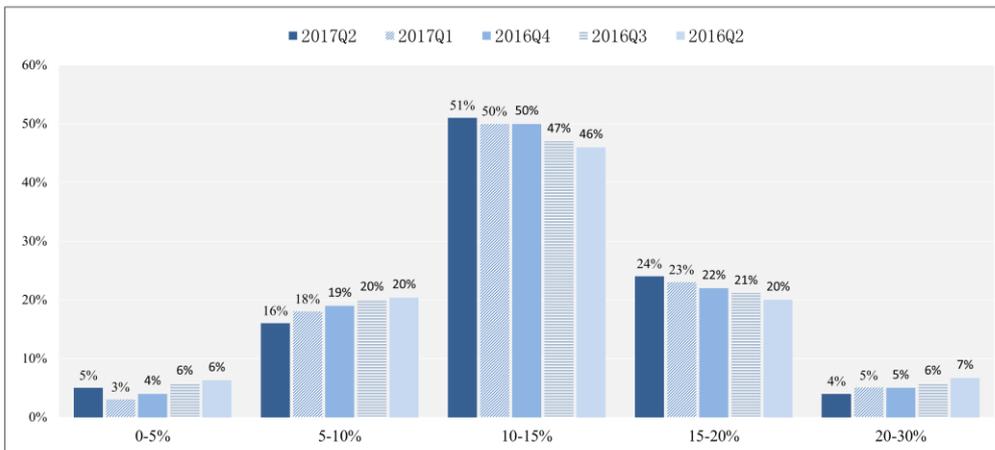


Figure 13. Financing  
Figure 13A. Sufficient Capital

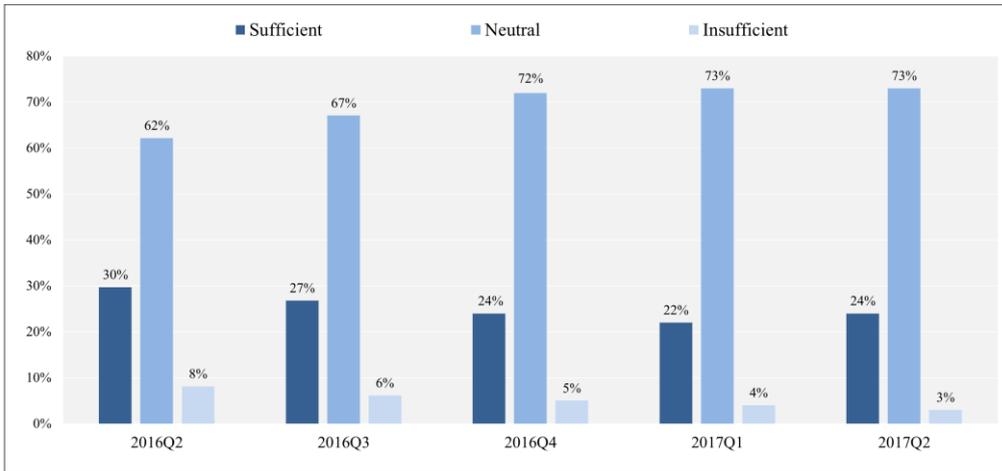


Figure 13B. New Loans

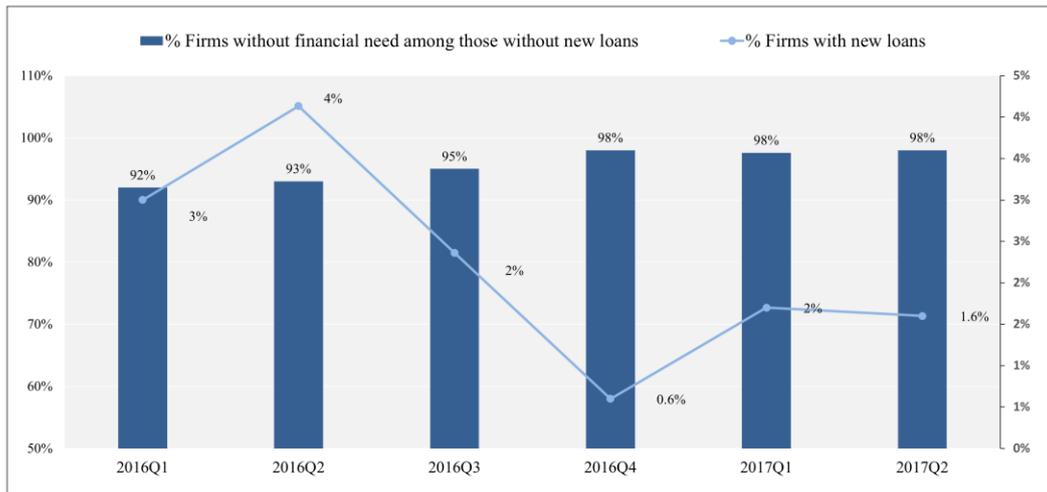
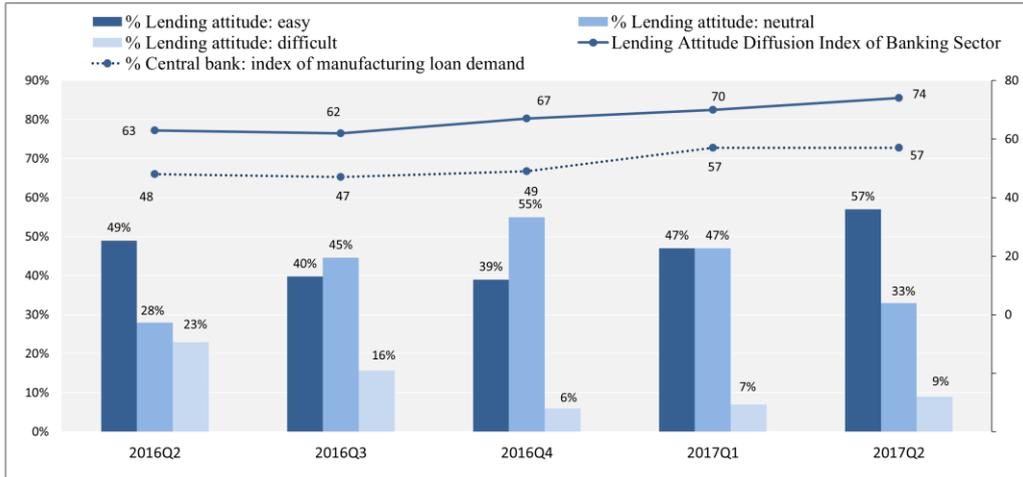


Figure 13C. Lending Attitude



**Table 1. Operating Conditions of Industrial Firms****Table 1.1**

		Number of Firms		Business Sentiment Index		Diffusion Index - Operating Conditions		Diffusion Index - Expected Change in Operating Conditions		Diffusion Index - Good Timing for Investment	
		Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
		Nation	2,050	2,029	46	47	54	54	48	49	36
<i>By Size</i>											
	Large	684	730	49	48	57	55	48	49	41	40
	Medium	683	685	46	47	55	53	48	49	36	37
	Small	683	614	43	46	51	52	48	48	32	37
<i>By Ownership</i>											
	State-owned	98	89	56	54	69	66	56	54	43	42
	Collectively-owned	32	31	47	46	55	53	55	50	33	35
	Private	1,704	1,679	45	46	53	52	47	49	36	38
	Foreign-owned	216	230	49	48	58	58	49	48	39	38
<i>By Product Type</i>											
	Consumer Goods - Durable	309	299	45	46	54	53	49	49	33	35
	Consumer Goods - Nondurable	725	706	47	49	56	56	49	49	37	41
	Capital Goods	136	154	47	47	51	54	51	51	39	38
	Intermediate Goods	880	871	46	46	53	52	47	49	36	37

**Table 1.2**

		% of Firms with Fixed Investment		% of Firms with Expansionary Investment		Diffusion Index - Production		Diffusion Index - Employment		Diffusion Index - Price	
		Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
		Nation	8	8	1	2	50	50	50	50	57
<i>By Size</i>											
	Large	10	9	1	3	51	53	50	50	57	63
	Medium	9	6	1	1	50	49	50	50	58	64
	Small	5	8	1	2	49	47	50	49	56	65
<i>By Ownership</i>											
	State-owned	26	20	2	2	59	53	52	51	58	61
	Collectively-owned	0	3	0	3	47	48	47	48	56	65
	Private	7	7	1	2	49	49	50	50	56	64
	Foreign-owned	10	9	2	3	52	53	51	49	60	68
<i>By Product Type</i>											
	Consumer Goods - Durable	5	6	1	1	52	55	50	50	55	63
	Consumer Goods - Nondurable	10	8	1	2	47	49	50	50	57	67
	Capital Goods	7	8	1	1	56	54	50	48	55	57
	Intermediate Goods	8	8	1	2	51	48	50	50	58	63

Notes:

1. Diffusion Index (DI) is computed using the percentage of firms that answer "increase" (% increase) and "same" (% same) according to the formula: (% increase + 0.5 \* % same). The index ranges between 0 and 100. A larger value indicates a better operating condition.

2. Business Sentiment Index is the average of DIs for Operating Conditions, Expected Operating Conditions and Good Timing for Investment.

**Table 2. Operating Conditions by Industry**

**Table 2.1 Operating Conditions of All Industries**

	Number of Firms		Business Sentiment Index		Diffusion Index - Operating Conditions		Diffusion Index - Expected Change in Operating Conditions		% of Firms with Fixed Investment		Diffusion Index - Good Timing for Investment	
	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
Nation	2,050	2,029	46	47	54	54	48	49	8	8	36	38
<i>Mining</i>												
Coal Mining and Washing	5	5	37	43	30	40	30	40	0	0	50	50
Mining and Processing of Ferrous Metal Ores	2	3	50	50	50	33	50	67	0	0	50	50
Mining and Processing of Non-ferrous Metal	8	7	44	45	50	50	50	50	0	0	31	36
Mining and Processing of Nonmetal Ores	17	12	41	40	38	33	44	50	0	0	41	38
Other Ancillary Activities of Mining	1	1	33	33	50	50	50	50	0	0	0	0
<i>Production and Supply of Electricity, Heat, Gas and Water</i>												
Power Production and Supply	59	43	58	57	64	62	61	60	36	26	50	50
Gas Production and Supply	5	3	60	44	80	50	50	33	20	0	50	50
Production and Supply of Water	21	20	63	62	88	85	60	60	24	20	40	40
<i>Light Manufacturing</i>												
Processing of Agricultural and Related Products	113	85	41	44	53	53	47	41	8	5	24	36
Manufacturing of Foods	63	61	44	45	52	52	40	45	0	0	40	36
Manufacturing of Beverage	43	46	44	49	52	54	45	49	14	13	35	45
Textiles	94	112	46	48	51	50	48	50	3	4	40	43
Textile Wearing and Apparel	58	64	49	47	53	52	48	48	14	2	44	41
Leather Related Products and Footwear	39	40	38	41	50	49	38	50	0	8	24	25
Processing of Wood Products	34	43	46	42	54	52	49	44	0	0	35	30
Manufacturing of Furniture	30	31	48	47	57	56	48	50	0	0	38	35
Paper and Paper Products	52	51	46	44	54	49	54	50	8	10	29	34
Printing, Reproduction of Recording Media	57	68	51	49	58	59	55	46	5	10	39	41
Cultural and Sports Products	50	50	50	51	60	60	45	51	0	2	45	43
Manufacturing of Medicines	63	60	58	59	70	72	52	53	24	12	51	52
Manufacturing of Others	11	13	42	46	55	54	36	46	0	15	36	38
Recycling and Disposal of Wastes	2	1	50	50	50	50	50	50	0	0	50	50
<i>Chemical Industry</i>												
Processing of Petroleum and Nuclear Fuel	10	6	43	39	50	50	40	33	0	0	40	33
Manufacturing of Chemical Products	129	123	47	48	51	52	49	52	8	11	41	40
Manufacturing of Chemical Fibers	6	7	44	55	42	64	50	50	17	14	42	50
Rubber and Plastic Products	98	99	40	46	51	53	43	50	3	6	27	35
<i>Equipment Manufacturing</i>												
General-purpose Machinery	137	148	48	47	53	51	50	50	7	11	41	40
Special-purpose Machinery	92	109	47	47	52	53	51	50	4	6	39	37
Manufacturing of Automotive	85	65	45	47	63	53	44	48	6	14	30	39
Manufacturing of Railways, Ships and Other Transportation	36	27	50	49	61	54	49	48	0	4	40	44
Electric Machinery and Apparatus	160	159	48	47	57	56	50	53	20	16	36	34
Computers, Communication and Electric Equipment	85	75	47	51	55	57	49	49	11	12	36	47
Manufacturing of Measuring Instruments	40	39	50	48	55	56	56	49	3	0	40	40
Repair of Metal Products, Machinery and Equipment	5	4	47	42	50	38	50	50	0	0	40	38
<i>Other Heavy Manufacturing</i>												
Non-metallic Mineral Products	119	139	38	39	46	46	42	44	4	5	27	28
Smelting and Pressing of Ferrous Metals	65	55	42	42	41	43	44	45	2	0	40	38
Smelting and Pressing of Non-ferrous Metals	32	30	45	46	48	50	48	48	6	7	39	38
Metal Products	124	125	44	45	57	56	50	48	9	6	26	31

**Table 2.2 Industry Ranking of Operating Conditions**

	Number of Firms		Business Sentiment Index		Diffusion Index - Operating Conditions		% of Firms with Fixed Investment		Diffusion Index - Good Timing for Investment		
	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	
Nation	2,050	2,029	46	47	54	54	8	8	36	38	
<i>Top Five</i>											
Production and Supply of Water	21	20	63	62	88	85	24	20	40	40	
Gas Production and Supply	5	3	60	44	80	50	20	0	50	50	
Manufacturing of Medicines	63	60	58	59	70	72	24	12	51	52	
Power Production and Supply	59	43	58	57	64	62	36	26	50	50	
Printing, Reproduction of Recording Media	57	68	51	49	58	59	5	10	39	41	
<i>Bottom Five</i>											
Coal Mining and Washing	5	5	37	43	30	40	0	0	50	50	
Non-metallic Mineral Products	119	139	38	39	46	46	4	5	27	28	
Leather Related Products and Footwear	39	40	38	41	50	49	0	8	24	25	
Rubber and Plastic Products	98	99	40	46	51	53	3	6	27	35	
Mining and Processing of Nonmetal Ores	17	12	41	40	38	33	0	0	41	38	

## Notes:

1. Ranking includes industries with more than three firms.

**Table 3. Operating Conditions by Region****Table 3.1 Operating Conditions of All Regions**

	Number of Firms		Business Sentiment Index		Diffusion Index - Operating Conditions		Diffusion Index - Expected Operating Conditions		% of Firms with Fixed Investment		Diffusion Index - Good Timing for Investment	
	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
Nation	2,050	2,029	46	47	54	54	48	49	8	8	36	38
<i>North China</i>												
Beijing	42	43	45	46	49	49	50	49	0	5	37	41
Tianjin	49	45	45	43	56	50	45	44	8	7	33	34
Hebei	87	89	44	45	53	54	46	47	5	6	33	33
<i>Northeast</i>												
Liaoning	95	94	47	45	55	52	49	46	2	6	37	36
Jilin	23	17	46	49	59	59	46	50	9	6	33	38
Heilongjiang	25	26	41	41	50	50	46	44	4	0	26	29
<i>Northwest</i>												
Inner Mongolia	20	15	53	56	50	57	60	57	20	7	48	53
Shaanxi	26	22	44	44	44	45	52	50	12	14	35	36
Gansu	11	6	44	50	55	58	41	50	45	33	36	42
Qinghai		1		50		50		50		0		50
Ningxia	4	4	46	42	50	50	63	50	25	25	25	25
Xinjiang	6	6	47	50	42	42	58	67	0	0	42	42
<i>Central North</i>												
Shanxi	23	21	41	44	50	55	37	38	9	10	37	38
Shandong	200	195	47	47	57	56	46	48	8	7	37	38
Henan	91	74	42	43	53	53	45	43	5	5	29	34
<i>Southwest</i>												
Chongqing	32	28	44	49	52	55	48	52	0	4	33	41
Sichuan	59	58	45	45	53	49	48	51	3	3	34	35
Guizhou	7	9	48	50	50	50	50	56	14	11	43	44
Yunnan	26	22	47	47	52	52	54	52	15	14	35	36
<i>East China</i>												
Shanghai	80	85	49	48	59	56	50	49	3	4	38	37
Jiangsu	283	316	48	48	54	54	51	50	11	9	39	40
Zhejiang	261	284	47	47	54	53	48	49	11	9	38	38
<i>South China</i>												
Fujian	102	92	46	48	55	54	45	52	10	5	37	37
Guangdong	232	243	47	48	54	54	49	50	7	9	37	41
Guangxi	38	35	48	49	54	54	53	53	13	11	37	40
Hainan	1	1	33	50	100	100	0	50	0	0	0	0
<i>Central South</i>												
Anhui	78	70	45	45	54	52	44	48	6	7	36	36
Jiangxi	47	41	47	47	55	54	48	48	13	15	37	40
Hubei	62	53	46	48	55	55	48	51	6	13	35	38
Hunan	40	34	48	47	56	56	59	46	13	9	29	40

**Table 3.2 Regional Ranking of Operating Conditions**

	Number of Firms		Business Sentiment Index		Diffusion Index - Operating Conditions		% of Firms with Fixed Investment		Diffusion Index - Good Timing for Investment	
	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
Nation	2,050	2,029	46	47	54	54	8	8	36	38
<i>Top Five</i>										
Inner Mongolia	20	15	53	56	50	57	20	7	48	53
Shanghai	80	85	49	48	59	56	3	4	38	37
Jiangsu	283	316	48	48	54	54	11	9	39	40
Guangxi	38	35	48	49	54	54	13	11	37	40
Guizhou	7	9	48	50	50	50	14	11	43	44
<i>Bottom Five</i>										
Shanxi	23	21	41	44	50	55	9	10	37	38
Heilongjiang	25	26	41	41	50	50	4	0	26	29
Henan	91	74	42	43	53	53	5	5	29	34
Chongqing	32	28	44	49	52	55	0	4	33	41
Hebei	87	89	44	45	53	54	5	6	33	33

Notes:

1. Ranking includes regions with more than three firms.

**Table 4. Oversupply**  
**Table 4.1 Overall**

	Number of Firms		Diffusion Index for Oversupply in Domestic Markets		Diffusion Index for Oversupply in Overseas Markets		Diffusion Index for Finished Goods		
	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	
Nation	2,050	2,029	82	83	71	72	50	49	
<i>By Size</i>									
Large	684	730	80	82	71	70	50	50	
Medium	683	685	81	83	69	71	50	49	
Small	683	614	86	85	75	74	49	49	
<i>By Ownership</i>									
State-owned	98	89	68	67	61	63	52	48	
Collectively-owned	32	31	82	81	58	71	47	50	
Private	1,704	1,679	83	84	72	72	49	49	
Foreign -owned	216	230	84	82	70	72	51	51	
<i>By Product Type</i>									
Consumer Goods - Durable	309	299	79	76	65	67	50	46	
Consumer Goods - Nondurable	725	706	78	82	72	72	49	51	
Capital Goods	136	154	89	90	73	70	52	54	
Intermediate Goods	880	871	86	85	74	74	50	48	

**Table 4.2 Industries with Severe Excess Capacity**

Industry	Number of Firms	% of Firms with 20% excess capacity and above	% of Firms with 10% excess capacity and above
Coal Mining and Washing	5	60	60
Mining and Processing of Nonmetal Ores	17	41	53
Paper and Paper Products	52	37	60
Non-metallic Mineral Products	119	34	44
Leather Related Products and Footwear	39	33	54
Processing of Petroleum and Nuclear Fuel	10	30	40
Electric Machinery and Apparatus	160	26	49
Mining and Processing of Non-ferrous Metal	8	25	50
Smelting and Pressing of Ferrous Metals	65	25	34
Manufacturing of Foods	63	24	37
Metal Products	124	22	46
Rubber and Plastic Products	98	16	46
Smelting and Pressing of Non-ferrous Metals	32	16	25
Special-purpose Machinery	92	14	36
Manufacturing of Automotive	85	14	56
Manufacturing of Railways, Ships and Other Transportation	36	14	64
Manufacturing of Medicines	63	13	27
Textile Wearing and Apparel	58	12	26
Processing of Wood Products	34	12	29
Textiles	94	12	14
Manufacturing of Furniture	30	10	17
Manufacturing of Measuring Instruments	40	10	15

## Notes:

1. This table reports industries that have at least 10% of firms with 20% or above excess capacity.
2. This table includes industries with more than three firms.

**Table 4.3 Regions with Severe Excess Capacity**

Province	Number of Firms	% of Firms with 20% excess capacity and above	% of Firms with 10% excess capacity and above
Heilongjiang	25	28	36
Tianjin	49	27	53
Sichuan	59	24	41
Yunnan	26	23	35
Beijing	42	21	40
Guangxi	38	21	39
Hunan	40	20	38
Henan	91	20	42
Shaanxi	26	19	35
Liaoning	95	19	40
Shanxi	23	17	52
Anhui	78	17	38
Shandong	200	17	32
Chongqing	32	16	34
Jiangxi	47	15	34
Hebei	87	14	39
Jiangsu	283	13	34
Guangdong	232	13	27
Zhejiang	261	11	28
Shanghai	80	10	31
Inner Mongolia	20	10	25

Notes:

1. This table reports regions that have at least 10% of firms with 20% or above excess capacity.
2. This table includes regions with more than three firms.

**Table 5. Cost and Price**  
**Table 5.1 Overall**

		Diffusion Indices									
		Number of Firms		Unit Cost Index		Labor Cost Index		Raw Material Cost Index		Price Index	
		Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
<i>Nation</i>		2,050	2,029	66	74	57	65	63	70	57	64
<i>By Size</i>											
	Large	684	730	65	72	58	64	61	68	57	63
	Medium	683	685	67	74	57	65	64	70	58	64
	Small	683	614	67	75	55	65	64	73	56	65
<i>By Ownership</i>											
	State-owned	98	89	61	65	56	61	59	65	58	61
	Collectively-owned	32	31	70	73	59	66	67	71	56	65
	Private	1704	1679	66	74	56	64	63	70	56	64
	Foreign -owned	216	230	68	78	59	70	65	73	60	68
<i>By Product Type</i>											
	Consumer Goods - Durable	309	299	69	77	58	65	65	73	55	63
	Consumer Goods - Nondurable	725	706	65	78	56	69	62	72	57	67
	Capital Goods	136	154	67	70	58	59	65	69	55	57
	Intermediate Goods	880	871	65	70	56	61	63	68	58	63

**Table 5.2 Industries with Unit Cost Increase More Significant than National Average**

	Diffusion Indices				Price Index
	Number of Firms	Unit Cost Index	Labor Cost Index	Raw Material Cost Index	
Nation	2,050	66	57	63	57
Repair of Metal Products, Machinery and Equipment	5	90	80	80	80
Mining and Processing of Non-ferrous Metal	8	88	88	88	88
Manufacturing of Beverage	43	87	85	79	73
Manufacturing of Automotive	85	85	78	81	72
Manufacturing of Railways, Ships and Other Transportation	36	85	74	78	69
Computers, Communication and Electric Equipment	85	84	82	80	78
Manufacturing of Chemical Fibers	6	83	50	83	75
Paper and Paper Products	52	83	54	77	71
Printing, Reproduction of Recording Media	57	81	57	80	57
Metal Products	124	69	52	68	59
Rubber and Plastic Products	98	68	54	63	49
Manufacturing of Furniture	30	67	55	67	58
Processing of Agricultural and Related Products	113	67	58	56	55
Processing of Wood Products	34	66	54	62	54
Special-purpose Machinery	92	66	57	63	51
Smelting and Pressing of Ferrous Metals	65	66	52	60	48
Non-metallic Mineral Products	119	66	52	66	56

Notes:

1. Industries are sorted by Diffusion Index for Unit Cost in descending order.

The table includes industries with more than three firms.

**Table 5.3 Regions with Unit Cost Increase More Significant than National Average**

	Diffusion Indices				
	Number of Firms	Unit Cost Index	Labor Cost Index	Raw Material Cost Index	Price Index
Nation	2,050	66	57	63	57
Xinjiang	6	75	58	58	42
Shanxi	23	74	57	72	52
Beijing	42	69	60	67	56
Heilongjiang	25	68	58	58	60
Hubei	62	68	57	66	58
Guangxi	38	68	62	66	62
Guangdong	232	68	57	66	57
Jiangsu	283	67	57	64	58
Hebei	87	67	55	65	57
Yunnan	26	67	62	65	62
Henan	91	67	57	65	57
Chongqing	32	66	56	61	50
Jiangxi	47	66	59	64	64
Hunan	40	66	56	60	56
Shandong	200	66	56	64	58

Notes:

1. Provinces are sorted by Diffusion Index for Unit Cost in descending order.  
The table includes provinces with more than three firms.

**Table 6. Financing Environment**  
**Table 6.1 Overall**

	Number of Firms		% Firms with Loans		% Firms with New Loans		Diffusion Index - Lending Attitude		Diffusion Index - Interest Rate	
	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
Nation	2,050	2,029	23	21	2	2	74	70	50	50
<i>With or Without Investment</i>										
Firms with Investment	168	158	26	25	2	4	83	63	50	50
Firms without Investment	1,882	1,871	23	21	1	1	72	72	50	50
<i>By Size</i>										
Large	684	730	24	25	2	1	87	63	50	50
Medium	683	685	22	21	2	2	65	75	50	50
Small	683	614	22	16	1	2	65	76	50	50
<i>By Ownership</i>										
State-owned	98	89	21	20	0	1	83	90	50	50
Collectively-owned	32	31	16	19	0	0				
Private	1,704	1,679	24	22	2	2	72	69	50	50
Foreign-owned	216	230	16	18	1	1	88	67	50	50
<i>By Product Type</i>										
Consumer Goods - Durable	309	299	21	24	1	2	80	70	50	50
Consumer Goods - Nondurable	725	706	23	22	1	1	73	70	50	50
Capital Goods	136	154	32	23	3	5	50	55	50	50
Intermediate Goods	880	871	22	19	2	2	76	74	50	50

Notes:

1. A higher Diffusion Index for lending attitude reflects easier lending.
2. A higher Diffusion Index for interest rate reflects higher interest rate.

**Table 6.2 Sources of Financing**

<i>The most important source of financing</i>		
Sources	Number of Firms	% of Firms
Internal Funds	2047	100
Founder	12	1
Relatives and friends	0	0
Bank	8	0
Stock market	1	0
Non-official finance institution	0	0
Others	0	0

<i>The second most important source of financing</i>		
Sources	Number of Firms	% of Firms
Bank	460	51
Founder	430	48
Others	2	0
Internal Funds	2	0
Stock market	1	0
Non-official finance institution	0	0
Relatives and friends	0	0

## Appendix 1. Industry and Regional Ranking of Excess Capacity

Table A1.1 Industry Ranking of Excess Capacity

Industry	Number of Firms		% of Firms with 20% excess capacity and above		% of Firms with 10% excess capacity and above	
	Q2	Q1	Q2	Q1	Q2	Q1
Coal Mining and Washing	5	5	60	40	60	40
Mining and Processing of Nonmetal Ores	17	12	41	42	53	67
Paper and Paper Products	52	51	37	12	60	33
Non-metallic Mineral Products	119	139	34	38	44	47
Leather Related Products and Footwear	39	40	33	5	54	28
Processing of Petroleum and Nuclear Fuel	10	6	30	67	40	67
Electric Machinery and Apparatus	160	159	26	20	49	46
Mining and Processing of Non-ferrous Metal	8	7	25	29	50	57
Smelting and Pressing of Ferrous Metals	65	55	25	25	34	38
Manufacturing of Foods	63	61	24	10	37	23
Metal Products	124	125	22	21	46	46
Rubber and Plastic Products	98	99	16	11	46	32
Smelting and Pressing of Non-ferrous Metals	32	30	16	13	25	33
Special-purpose Machinery	92	109	14	13	36	27
Manufacturing of Automotive	85	65	14	5	56	37
Manufacturing of Railways, Ships and Other Transportation	36	27	14	0	64	37
Manufacturing of Medicines	63	60	13	10	27	20
Textile Wearing and Apparel	58	64	12	0	26	6
Processing of Wood Products	34	43	12	21	29	28
Textiles	94	112	12	2	14	3
Manufacturing of Furniture	30	31	10	10	17	13
Manufacturing of Measuring Instruments	40	39	10	13	15	18
Manufacturing of Others	11	13	9	8	55	62
General-purpose Machinery	137	148	7	7	28	28
Printing, Reproduction of Recording Media	57	68	5	7	35	38
Power Production and Supply	59	43	5	5	12	9
Processing of Agricultural and Related Products	113	85	4	6	20	33
Computers, Communication and Electric Equipment	85	75	4	5	22	28
Manufacturing of Beverage	43	46	2	2	33	41
Manufacturing of Chemical Products	129	123	2	3	26	25
Repair of Metal Products, Machinery and Equipment	5	4	0	0	40	50
Manufacturing of Chemical Fibers	6	7	0	0	17	14
Cultural and Sports Products	50	50	0	2	4	10
Gas Production and Supply	5	NA	0	NA	0	NA
Production and Supply of Water	21	20	0	0	0	0

## Notes:

Industries are sorted based on the percentage of firms with over 20% excess capacity in descending order. The ranking includes industries with more than three firms.

**Table A1.2 Regional Ranking of Excess Capacity**

Province	Number of Firms		% of Firms with 20% excess capacity and above		% of Firms with 10% excess capacity and above	
	Q2	Q1	Q2	Q1	Q2	Q1
Heilongjiang	25	26	28	23	36	38
Tianjin	49	45	27	18	53	42
Sichuan	59	58	24	21	41	38
Yunnan	26	22	23	23	35	36
Beijing	42	43	21	16	40	37
Guangxi	38	35	21	17	39	34
Hunan	40	34	20	18	38	24
Henan	91	74	20	16	42	43
Shaanxi	26	22	19	27	35	41
Liaoning	95	94	19	22	40	43
Shanxi	23	21	17	14	52	38
Anhui	78	70	17	14	38	31
Shandong	200	195	17	14	32	28
Chongqing	32	28	16	14	34	32
Jiangxi	47	41	15	12	34	29
Hebei	87	89	14	15	39	40
Jiangsu	283	316	13	10	34	29
Guangdong	232	243	13	7	27	22
Zhejiang	261	284	11	7	28	26
Shanghai	80	85	10	12	31	29
Inner Mongolia	20	15	10	20	25	27
Hubei	62	53	10	4	31	19
Gansu	11	6	9	0	9	0
Fujian	102	92	9	7	34	32
Jilin	23	17	9	12	30	24
Guizhou	7	9	0	0	57	33
Xinjiang	6	6	0	50	17	67
Ningxia	4	4	0	0	0	0

Notes:

Provinces are sorted based on the percentage of firms with over 20% excess capacity in descending order.

Appendix

**Appendix 2. Industry and Regional Diffusion Index for Cost and Price**

**Table A2.1 Industry Diffusion Index for Cost and Price**

		Diffusion Indices									
		Number of Firms		Unit Cost Index		Labor Cost Index		Raw Material Cost Index		Price Index	
		Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
Nation		2050	2029	66	74	57	65	63	70	57	64
<i>Mining</i>											
	Coal Mining and Washing	5	5	50	50	50	50	50	50	50	60
	Mining and Processing of Ferrous Metal Ores	2	3	50	50	50	50	50	50	50	67
	Mining and Processing of Non-ferrous Metal	8	7	88	93	88	93	88	93	88	93
	Mining and Processing of Nonmetal Ores	17	12	53	54	50	54	50	55	56	46
<i>Production and Supply of Electricity, Heat, Gas and Water</i>											
	Power Production and Supply	59	43	50	50	50	50	50	50	50	50
	Gas Production and Supply	5	3	50	50	50	50	NA	NA	50	50
	Production and Supply of Water	21	20	50	50	50	50	NA	NA	50	50
<i>Light Manufacturing</i>											
	Processing of Agricultural and Related Products	113	85	67	71	58	56	56	65	55	61
	Manufacturing of Foods	63	61	56	59	52	51	56	59	52	53
	Manufacturing of Beverage	43	46	87	93	85	96	79	86	73	93
	Textiles	94	112	62	96	52	73	61	94	56	93
	Textile Wearing and Apparel	58	64	64	73	55	58	59	70	55	67
	Leather Related Products and Footwear	39	40	56	93	50	89	55	91	50	90
	Processing of Wood Products	34	43	66	67	54	53	62	66	54	55
	Manufacturing of Furniture	30	31	67	66	55	53	67	66	58	58
	Paper and Paper Products	52	51	83	96	54	93	77	54	71	53

## Appendix

**Table A2.1 Industry Diffusion Index for Cost and Price (Continued)**

	Diffusion Indices									
	Number of Firms		Unit Cost Index		Labor Cost Index		Raw Material Cost Index		Price Index	
	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
Printing, Reproduction of Recording Media	57	68	81	99	57	98	80	56	57	53
Cultural and Sports Products	50	50	60	84	56	80	57	83	52	78
Manufacturing of Medicines	63	60	54	53	50	50	53	53	52	53
Manufacturing of Others	11	13	55	100	55	100	50	100	50	100
Recycling and Disposal of Wastes	2	1	50	50	50	50	50	50	50	100
<i>Chemical Industry</i>										
Processing of Petroleum and Nuclear Fuel	10	6	65	83	55	58	65	83	60	75
Manufacturing of Chemical Products	129	123	60	59	52	54	59	61	55	54
Manufacturing of Chemical Fibers	6	7	83	64	50	64	83	64	75	64
Rubber and Plastic Products	98	99	68	82	54	59	63	75	49	55
<i>Equipment Manufacturing</i>										
General-purpose Machinery	137	148	61	61	53	55	59	60	55	53
Special-purpose Machinery	92	109	66	72	57	57	63	70	51	52
Manufacturing of Automotive	85	65	85	98	78	96	81	95	72	95
Manufacturing of Railways, Ships and Other Transportation	36	27	85	98	74	93	78	98	69	89
Electric Machinery and Apparatus	160	159	57	57	52	52	56	58	53	54
Computers, Communication and Electric Equipment	85	75	84	96	82	95	80	96	78	95
Manufacturing of Measuring Instruments	40	39	60	63	54	58	58	62	48	55
Repair of Metal Products, Machinery and Equipment	5	4	90	100	80	88	80	88	80	88
<i>Other Heavy Manufacturing</i>										
Non-metallic Mineral Products	119	139	66	77	52	62	66	77	56	71
Smelting and Pressing of Ferrous Metals	65	55	66	60	52	53	60	58	48	47
Smelting and Pressing of Non-ferrous Metals	32	30	63	73	56	58	63	73	53	57
Metal Products	124	125	69	71	52	54	68	71	59	58

Notes: The table includes industries with more than three firms.

## Appendix

Table A.2.2 Regional Diffusion Index for Cost and Price

	Diffusion Indices									
	Number of Firms		Unit Cost Index		Labor Cost Index		Raw Material Cost Index		Price Index	
	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1
Nation	2,050	2,029	66	74	57	65	63	70	57	64
<i>North China</i>										
Beijing	42	43	69	74	60	67	67	70	56	60
Tianjin	49	45	65	68	56	64	64	63	53	57
Hebei	87	89	67	75	55	65	65	71	57	64
<i>Northeast</i>										
Liaoning	95	94	64	68	55	63	59	64	57	58
Jilin	23	17	57	65	57	62	50	65	50	62
Heilongjiang	25	26	68	75	58	62	58	75	60	63
<i>Northwest</i>										
Inner Mongolia	20	15	63	63	55	57	60	60	55	53
Shaanxi	26	22	65	70	60	64	63	60	60	57
Gansu	11	6	59	67	59	67	50	67	50	67
Ningxia	4	4	63	75	50	50	63	75	50	75
Xinjiang	6	6	75	67	58	58	58	67	42	50
<i>Central North</i>										
Shanxi	23	21	74	74	57	60	72	75	52	52
Shandong	200	195	66	74	56	62	64	70	58	66
Henan	91	74	67	76	57	64	65	73	57	67
<i>Southwest</i>										
Chongqing	32	28	66	70	56	63	61	70	50	63
Sichuan	59	58	65	73	57	64	64	68	58	65
Guizhou	7	9	57	61	57	61	50	56	57	67
Yunnan	26	22	67	80	62	66	65	80	62	77
<i>East China</i>										
Shanghai	80	85	63	71	56	64	61	68	55	63
Jiangsu	283	316	67	76	57	64	64	72	58	66
Zhejiang	261	284	65	76	55	66	63	72	56	65
<i>South China</i>										
Fujian	102	92	63	75	55	65	61	71	54	63
Guangdong	232	243	68	76	57	68	66	72	57	64
Guangxi	38	35	68	74	62	64	66	74	62	64
<i>Central South</i>										
Anhui	78	70	65	71	57	64	60	65	55	64
Jiangxi	47	41	66	76	59	70	64	71	64	68
Hubei	62	53	68	75	57	64	66	74	58	64
Hunan	40	34	66	68	56	63	60	64	56	62

Notes:

The table includes provinces with more than three firms.

### **Appendix 3. Sampling Procedure**

#### **3.1 The Population**

Starting from this quarter, we have included firms in the 2013 Industrial Enterprises database in our sampling. This is the most complete and reliable economic census data available.

Although the 2013 Industrial Enterprises database is our best option, it was still compiled four years ago. A firm's core characteristics, such as industry, might have changed significantly in that time. Thus, we also surveyed firms about their main products and product types.

#### **3.2 Sampling Procedure**

Previously, our sampling was based on the population of sizable industrial firms (with sales above 5 million RMB) in the 2008 Economic Census. In order to ensure the comparability of this quarter's survey with those in the previous quarters, we used a sampling procedure as described below:

1. We started from the 2,029 firms in our last response sample, which was the result of a random sampling stratified by industry, region and size (see our previous reports for details). Of those, we obtained responses from 1,670 firms. Steps 2-3 below describe how we obtain a supplement sample of 1,650 firms from the 2013 Industrial Enterprise database, which, assuming a 20% response rate, would yield an additional 330 firms so that the total size of the survey sample is 2,000 firms.
2. We stratified by three size categories, 41 industries and 31 provinces to obtain 3,813 strata in both the 2008 Economic Census and 2013 Industrial Enterprises database populations. Then we compute, in each stratum, the percentage of new firms founded after 2008.
3. Assuming random responses across the above 3,813 strata, we compute the number of firms across strata and the proportion of new firms (founded after 2008) in each stratum, so that the final response sample could match (or approach) the population in terms of industry, region and size, as well as the proportion of new firms. Out of the 1,650 firms in our supplementary sample, we obtained 380 responses, resulting in a total of 2,050 firms in our final survey sample.

However, we note that to ensure a smooth transition across quarters, this quarter's sample does not match well with the 2013 Industrial Enterprise database population in two dimensions. First, the weight of new firms founded after 2008 is lower. Second, given that the National Bureau of Statistics changed its definition of sizable firms between 2008 and 2013, from sales totaling 5 million RMB up to 20 million RMB, the average firm size is between the two databases. We will resolve these discrepancies gradually in the coming surveys. Moreover, in our data analysis, we have cross-checked that the results relative to those of the last quarter have not been driven by the new sample.

### **3.3 Survey Process**

The survey is conducted through phone interviews. Figure A1 reports the distribution of the number of phone calls, duration of the calls and the interviewees' positions in their companies.

### **3.4. Sample Representativeness**

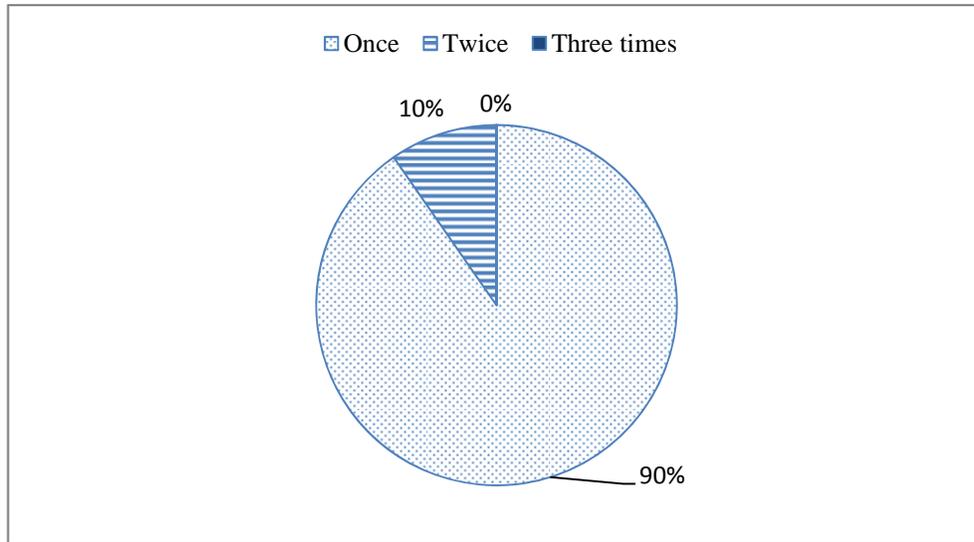
Tables A3.1-A3.3 show the distribution of the population and the Q2 response sample, as well as the 1,670 firms that were also in the Q1 sample, in terms of industry, region and size. Note that as we are sampling 2.1% of the population, some small strata may not be sampled. Specifically, Tibet is a region that has not been sampled, while Mining of other Ores, Extraction of Petroleum & Natural Gas and Manufacture of Tobacco are three industries not sampled. Overall, however, we feel our response sample represents the population quite well.

### **3.5 Seasonality**

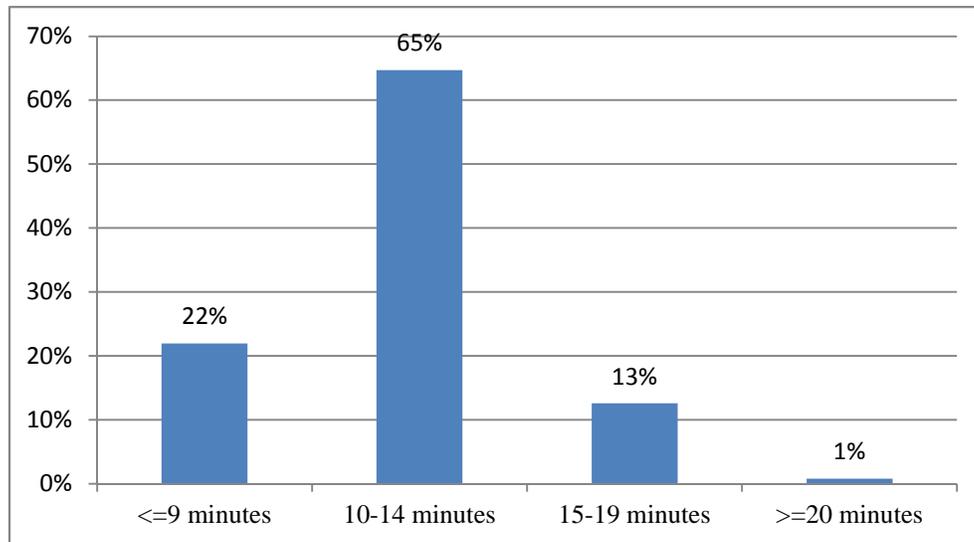
Theoretically, there are no obvious ways to adjust for seasonality, especially given the relatively small number of surveys we have conducted. We deal with this issue by directly asking the firms about seasonality and its impact. As shown in Figure A1.4, the majority of firms (82%) reported no seasonality, while for 10% of the firms, the seasonality impact was below 5%. Most importantly, the impact of seasonality is roughly distributed symmetrically. Thus, in aggregate, seasonality is not likely to bias our results and we do not adjust for seasonality.

**Figure A1. Phone Interviews – number of calls, duration and interviewees**

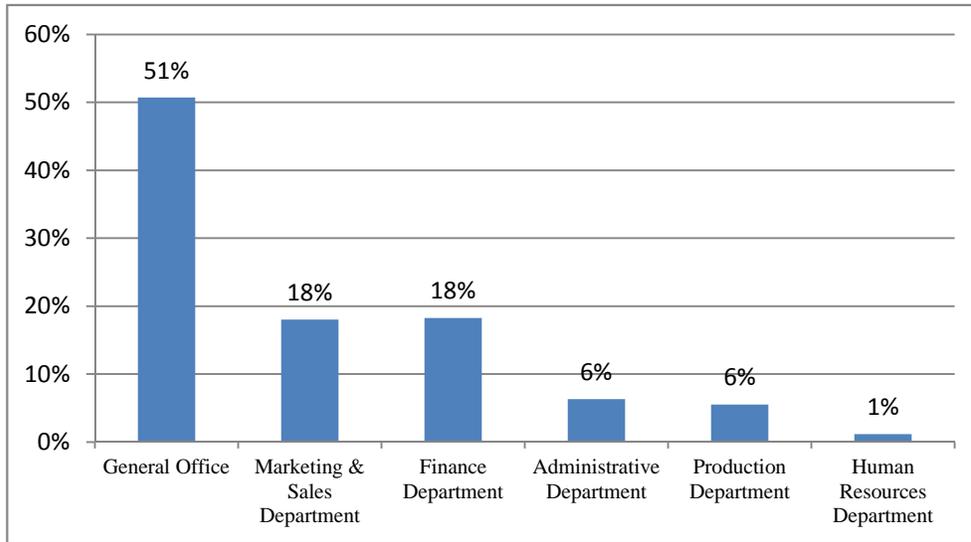
**Figure A1.1 Number of Calls**



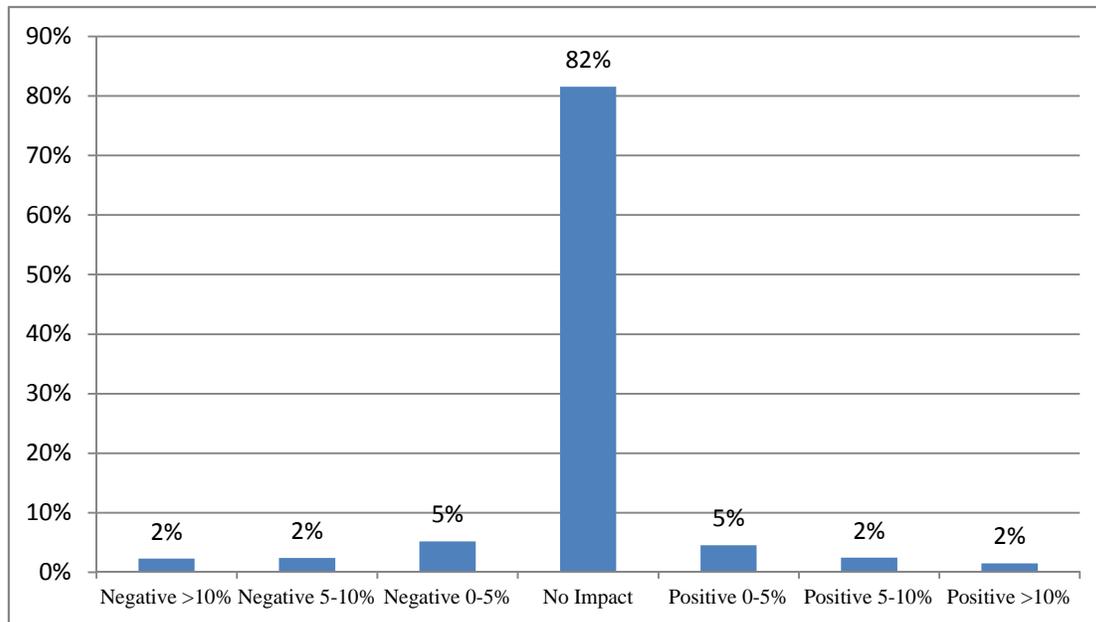
**Figure A1.2 Duration of Calls**



**Figure A1.3 Interviewees' Positions**



**Figure A1.4 Seasonality**



## Appendix

**Table A3. Comparisons between Survey Sample and the Population**

**Table A3.1 Industry Distribution**

Industry	Population		1,670 Firms From Q1 Survey		Final Q2 Response Sample	
	Number of Firms	Percent	Number of Firms	Percent	Number of Firms	Percent
Power Production and Supply	5,701	1.7	42	2.5	59	2.9
Electric Machinery and Apparatus	21,012	6.2	143	8.6	160	7.8
Textile Wearing and Apparel	14,147	4.2	44	2.6	58	2.8
Textiles	19,591	5.8	85	5.1	94	4.6
Mining and Processing of Nonmetal Ores	3,363	1.0	11	0.7	17	0.8
Non-metallic Mineral Products	29,429	8.7	106	6.4	119	5.8
Recycling and Disposal of Wastes	1,256	0.4	1	0.1	2	0.1
Mining and Processing of Ferrous Metal Ores	3,100	0.9	1	0.1	2	0.1
Smelting and Pressing of Ferrous Metals	10,190	3.0	50	3.0	65	3.2
Manufacturing of Chemical Fibers	1,859	0.6	4	0.2	6	0.3
Manufacturing of Chemical Products	23,402	6.9	107	6.4	129	6.3
Computers, Communication and Electric Equipment	12,540	3.7	69	4.1	85	4.2
Manufacturing of Furniture	4,656	1.4	29	1.7	30	1.5
Repair of Metal Products, Machinery and Equipment	381	0.1	4	0.2	5	0.2
Metal Products	18,498	5.5	110	6.6	124	6.1
Manufacturing of Beverage	5,496	1.6	36	2.2	43	2.1
Other Ancillary Activities of Mining	153	0.1	1	0.1	1	0.1
Coal Mining and Washing	6,680	2.0	3	0.2	5	0.2
Processing of Wood Products	8,154	2.4	27	1.6	34	1.7
Processing of Agricultural and Related Products	22,485	6.7	74	4.4	113	5.5
Leather Related Products and Footwear	7,714	2.3	26	1.6	39	1.9
Mining of other Ores	17	0.0	0	0.0	0	0.0
Manufacturing of Others	1,527	0.5	10	0.6	11	0.5
Manufacturing of Automotive	11,733	3.5	54	3.2	85	4.2
Gas Production and Supply	1,095	0.3	3	0.2	5	0.2
Extraction of Petroleum and Natural Gas	135	0.0	0	0.0	0	0.0
Processing of Petroleum and Nuclear Fuel	1,941	0.6	5	0.3	10	0.5
Manufacturing of Foods	7,388	2.2	51	3.1	63	3.1
Production and Supply of Water	1,310	0.4	19	1.1	21	1.0
Manufacturing of Railways, Ships and Other Transportation	4,277	1.3	21	1.3	36	1.8
General-purpose Machinery	22,163	6.6	123	7.4	137	6.7
Cultural and Sports Products	7,513	2.2	42	2.5	50	2.4
Rubber and Plastic Products	16,327	4.8	78	4.7	98	4.8
Manufacture of Tobacco	122	0.0	0	0.0	0	0.0
Manufacturing of Medicines	6,483	1.9	57	3.4	63	3.1
Manufacturing of Measuring Instruments	3,805	1.1	35	2.1	40	2.0
Printing, Reproduction of Recording Media	4,734	1.4	52	3.1	57	2.8
Mining and Processing of Non-ferrous Metal	1,552	0.5	7	0.4	8	0.4
Smelting and Pressing of Non-ferrous Metals	3,728	1.1	26	1.6	32	1.6
Paper and Paper Products	6,580	2.0	33	2.0	52	2.5
Special-purpose Machinery	15,443	4.6	81	4.9	92	4.5
Total	337,680	100	1,670	100	2,050	100

**Table A3.2 Regional Distribution**

Province	Population		1,670 Firms From Q1 Survey		Final Q2 Response Sample	
	Number of Firms	Percent	Number of Firms	Percent	Number of Firms	Percent
Anhui	14,533	4.3	60	3.6	78	3.8
Beijing	3,506	1.0	39	2.3	42	2.1
Fujian	15,206	4.5	79	4.7	102	5.0
Gansu	1,723	0.5	6	0.4	11	0.5
Guangdong	37,831	11.2	188	11.3	232	11.3
Guangxi	4,919	1.5	31	1.9	38	1.9
Guizhou	2,901	0.9	6	0.4	7	0.3
Hainan	358	0.1	1	0.1	1	0.1
Hebei	12,818	3.8	73	4.4	87	4.2
Henan	18,410	5.5	63	3.8	91	4.4
Heilongjiang	3,882	1.2	22	1.3	25	1.2
Hubei	13,520	4.0	49	2.9	62	3.0
Hunan	12,170	3.6	26	1.6	40	2.0
Jilin	5,136	1.5	15	0.9	23	1.1
Jiangsu	45,138	13.4	250	15.0	283	13.8
Jiangxi	7,424	2.2	37	2.2	47	2.3
Liaoning	15,591	4.6	81	4.9	95	4.6
Inner Mongolia	3,975	1.2	13	0.8	20	1.0
Ningxia	940	0.3	4	0.2	4	0.2
Qinghai	448	0.1	0	0.0	0	0.0
Shandong	37,272	11.0	157	9.4	200	9.8
Shanxi	3,433	1.0	16	1.0	23	1.1
Shaanxi	4,103	1.2	19	1.1	26	1.3
Shanghai	9,101	2.7	68	4.1	80	3.9
Sichuan	11,753	3.5	45	2.7	59	2.9
Tianjin	4,972	1.5	36	2.2	49	2.4
Tibet	54	0.0	0	0.0	0	0.0
Xinjiang	2,031	0.6	4	0.2	6	0.3
Yunnan	3,147	0.9	19	1.1	26	1.3
Zhejiang	36,363	10.8	240	14.4	261	12.7
Chongqing	5,022	1.5	23	1.4	32	1.6
<b>Total</b>	<b>337,680</b>	<b>100</b>	<b>1,670</b>	<b>100</b>	<b>2,050</b>	<b>100</b>

## Appendix

**Table A3.3 Comparison of Company Characteristics**

	Population 2008		Population 2013		1,670 Firms From Q1 Survey		Final Q2 Response Sample	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Assets	90,050	12,920	243,118	45,165	299,578	59,132	328,216	58,574
Sales	104,697	20,072	295,142	85,344	243,244	46,171	294,337	55,804
Total	488,017		337,680		1,670		2,050	