

China's Industrial Economy 2016 Q3 Report¹

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¹ 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 Chen Ziyi, Li Xina, Shi Tianshuo and Wang Shaokun, who provided support to the data analysis, presentation and text revision.

Executive Summary

Although China's third-quarter GDP figure met expectations, our detailed survey indicates that China's industrial economy has not really stabilized. Our Business Sentiment Index (BSI) and employment index both registered below 50 in Q3, indicating contraction. Firms' fixed investment remained sluggish: only 8% of firms made fixed investments in the third quarter, while a mere 2% made expansionary investments.

The positive news, perhaps, is that, after five quarters of persistent decline, production has stabilized due to an expansion in consumer goods. Our results do not support the popular belief that China's Q3 economic figures were driven by real estate and infrastructure building. Real estate-related sectors, such as cement, iron & steel and coal, make up only a small proportion and are themselves in contraction. The influence of the real estate sector is more likely to have contributed via an indirect wealth effect, that is, households that sold their houses at high prices used the cash for consumption.

The biggest challenge facing the industrial economy is still weak demand and overcapacity. The prevalence and severity of overcapacity are both at historically high levels. Moreover, firms do not expect that the situation will improve in the next quarter. Nevertheless, curtailment of overcapacity slowed significantly in Q3, suggesting that improved orders have made firms willing to keep the capacity for a longer time. Therefore, there is still quite a long way before overcapacity can be fully absorbed.

The industrial economy has ended a period of deflation which lasted for seven consecutive quarters. This is mixed news, however. On the one hand, it is related to improved demand and, thus, pricing power in certain sectors. On the other hand, it is more likely to reflect inflationary pressure stemming from a prolonged loosening of monetary policy. Inflation, coupled with overcapacity, would increase costs and hinder the recovery of the industrial economy.

We maintain our position that monetary policy cannot revive the industrial economy. Supply-side reform, with a focus on reducing overcapacity and improving industrial structure, is necessary for the long-term growth of the Chinese economy. Although the economy faces many challenges in the short term, there are still a number of areas for growth, including the rise of new industries such as the service sector, internet-related businesses, the reform of state-owned enterprises and urbanization. With the government's strong commitment to economic transition, we remain optimistic about the long-term outlook of the Chinese economy.

I. Overall: China's Industrial Economy Has Not Stabilized

The Business Sentiment Index registered a mark of 46 for Q3, the same as last quarter, indicating a slight contraction. Our BSI is the simple average of three diffusion indices, including current operating conditions, expected change in operating conditions and investment timing.^{1, 2} Compared with other current economic indices, the BSI is more forward-looking and is a reflection of the absolute level of economic activities.³

As shown in Figure 1, there are significant variations among the three sub-indicators that constitute the BSI. With regards to current operating conditions (Figure 2), 13% of firms replied “good”, with the diffusion index standing at 53 in 2016 Q3 (versus 54 in 2016 Q2). Meanwhile, the diffusion index for the expected change in operating conditions was 51, one point higher than in the previous quarter.

Fixed investment remained sluggish. When asked whether it was currently a good time to make fixed investments, only 1% of the firms considered the timing to be “good”, 65% of the firms reported “average” and 34% of the firms reported “bad”, with a diffusion index of 34, far below the turning point of 50 (Figure 1). Only 8% of firms made fixed investments in Q3 and a mere 2% made expansionary investments (that is, an investment rate above 3% of assets – a level that roughly covers depreciation). The sluggish pace of investment will not improve in the near future: only six firms (0.3%) said they planned to make investments in the next quarter. Recent media reports have noted that the country's fixed investment during the first six months of this year was dominated by government-led investment, while private investment has been contracting. Our survey has found this trend has lasted for a long time.

The employment index stood at 48 in Q3, which, although one point higher than Q2, still indicates a slight contraction. The positive news, perhaps, is that, after five quarters of persistent decline, production has stabilized, with a diffusion index of 50 (Table 1.2). Moreover, the improvement in the production index can be attributed to an expansion in consumer goods. The diffusion index was 54 for durable goods and 53 for non-durables. Firms expected consumer goods to expand in the next quarter,

¹ 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”?

² 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 % of firms answering “good” + 0.5 * % 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.

³ Most existing indices, including the well-known PMI, are ex-post and relative (to last quarter). Even when the absolute level of business conditions is gloomy, one may still observe a high diffusion index, as long as it is an improvement over the previous quarter.

with the diffusion indices of expected production above the turning point (51 and 54 for durable and non-durables, respectively).

Our results do not support the popular belief that the economy was driven by real estate and infrastructure building. Sectors related to housing and infrastructure construction, such as cement, iron & steel and coal, make up only a small proportion (5%) of the industrial economy. Moreover, these sectors are themselves in contraction. Other than construction metal products, their BSIs were even below the industry average; production, with the exception of cement, declined in the third quarter. Thus, the direct impact of real estate and infrastructure building was not sufficient to boost the industrial economy; rather, it is likely to have contributed via an indirect wealth effect, that is, households that sold their houses at high prices used the cash for consumption.

Table 1 shows the operating performance of different types of firms over the last two quarters. As before, SOEs (52) performed better than private companies (46). Large firms (48) fared better than small ones (45). Among different product types, consumer goods (49) outperformed intermediate goods and capital goods (45).

Table 2 further analyzes the business conditions of different industries, where industry classification is based on the 35 two-digit industries of the National Bureau of Statistics. Variations across industries were substantial, with the BSI ranging from 38 to 61. The top three industries included Medicines (with a BSI of 61), Water Production & Supply (52) and Computers, Communication & Electric Equipment (52). The worst-performing industries were Non-metallic Mineral Products (38), Mining & Processing of Non-ferrous Metal (38), Leather-Related Products & Footwear (38), Processing of Petroleum & Nuclear Fuel (38) and Mining & Processing of Nonmetal Ores (39). Since 2015 Q1, Mining & Processing of Nonmetal Ores has been on the bottom-five list five times and was the worst-performing industry on three of those occasions. Processing of Petroleum & Nuclear Fuel and Leather-Related Products & Footwear have also appeared on the worst-performing list five times. Notably, Agricultural & Related Products finally moved off the bottom-five list for the first time since 2015 Q1.

Table 3 displays regional business conditions. Compared with last quarter, regional variations were larger, with the BSI ranging from 29 to 57. The worst-performing regions comprised of Ningxia (29), Xinjiang (33), Heilongjiang (40), Liaoning (42) and Shanxi (42). Notably, among these provinces, Ningxia has been at the bottom of the ranking for two straight quarters, with the BSI of 29 in Q3 marking a historical low. Guizhou has been on the bottom-five list since 2014 Q3 and has been at the very bottom of the list multiple times. However, Guizhou performed better this quarter, with a BSI (52) above the national average. Moreover, Shanxi has been on the list since 2015 Q2.

II. Understanding the Economy: Challenges and Priorities

Weak demand is still by far the biggest challenge for the industrial economy. 81% of the firms surveyed in Q3 cited a lack of orders (Figure 5). Costs were listed second, with labor and raw material costs cited by 20% and 15% of firms, respectively. The proportion of firms citing macro and industrial policies as limiting factors continued to increase from 12% in Q2 to 17% in Q3 (2% for Q1), reflecting firms' concerns about the overall economy and the government's economic policy. Financing was not found to be a bottleneck, with only 4% replying that financing was a limiting factor in Q3, a consistent finding in past surveys.

II.1 Overcapacity: Still At a Historical High

About 66% of the firms reported that supply exceeded demand for their products in the domestic market, the same as last quarter, while the diffusion index reflecting oversupply stood at 83, equal to last quarter and remaining at a historical high (Figure 6A).

32% of the firms reported that their excess capacity was above 10%, up from 30% in Q2, while 13% reported that their excess capacity was above 20%, down slightly from 14% in Q2 (Figure 6). We categorize an industry as having severe excess capacity if more than 10% of the firms report excess capacity of more than 20%. There are 35 industries and 31 regions in total. In Q3, the number of industries and regions with severe excess capacity accounted for more than half of the total firms, respectively (19 industries and 20 regions in Q3 versus 18 industries and 25 regions in Q2). All these numbers demonstrate that both the prevalence and severity of overcapacity were at historically high levels. Moreover, firms did not expect the situation to improve in Q4, the proportion of firms expecting overcapacity above 10% and 20% were, respectively, 33% and 14%.

In Q3, the three industries with the most severe overcapacity were Processing of Petroleum & Nuclear Fuel, Mining & Processing of Ferrous Metals and Mining & Processing of Nonmetal Ores. The top three provinces with severe overcapacity were Xinjiang, Shanxi and Yunnan (see Appendix Tables 1.1 and 1.2 for the detailed rankings). The worst-performing industries are all on the list of severe overcapacity.

While there has been much media attention on the contraction in exports, firms have actually fared substantially better in overseas markets than in domestic ones, with diffusion indices roughly 13 points lower in Q3 (15 points lower in Q1 and Q2). The severity of overcapacity was also less than the domestic market: the proportion of firms with overcapacity above 10% and 20% was, respectively, 5% and 2%.

Weak demand has not caused inventory problems, thanks to the “order-based” production model adopted by many Chinese firms. As shown earlier, the finished-goods inventory stayed largely flat. As many as 48% of firms said they did not have significant levels of inventory because they produce only after taking orders. For those carrying inventories, nearly 85% said they expected the inventory to be digested within three months, with a further 12% saying it would take between three to six months. This leaves only 3% of the whole sample expecting to carry inventory for more than six months.

II.2 Curtailment of Overcapacity Slows

We called back all the firms that had been surveyed in the previous quarter. Of those, 15 had suspended production, accounting for 0.7% of the sample. An additional 29 firms (1.4%) were suspected to have suspended production (Figure 7A). This included companies where, after between five to nine attempts to reach them, the phone number was either wrong, suspended or did not exist, the line could not be connected or was busy. Therefore, a total of 2.1% of the firms suspended production or were suspected to have suspended production, lower than the respective figure from Q2 of 2.6%.

In Q3, the proportion of firms with a substantial reduction in employment also dropped. Firms that reduced their labor force by more than 10% accounted for 3.0% of the sample (as opposed to 4.6% in Q2), while those that reduced their labor force by more than 20% accounted for 1.8% (3.5% in Q2) (Figure 7B). Slightly more than half (53%) of the firms with drops in employment over 20% are small firms. Based on the firm size distribution of employment reduction, we estimate that the total employment drop in China’s industrial sector was about 0.3%. Given the number of industrial workers was put at 230 million at the end of 2014, this estimate implies a total of 0.7 million lost jobs in Q3, which was much lower than the 2.5 million number we reported in Q2.

Consistent with an improved industrial structure, firms with severe overcapacity are more likely to reduce employment and production. Among those with severe overcapacity, the proportion of firms reducing production by 5% and 10% was, respectively, 16% and 8%, much higher than the sample average (3% and 2%). The proportion of firms with severe overcapacity reducing employment by 5% and 10% was, respectively, 14% and 11%, three times the sample average (4% and 3%).

Figure 7C displays capacity utilization in Q3. 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 that the profit margins of Chinese firms are substantially lower than those in western countries, they may need a higher utilization rate in order to stay financially healthy. In Q3, 70% of firms surveyed had a capacity utilization rate above 80%, while 14% of firms had a level below 70%.

Overall, given that the prevalence and severity of overcapacity are both at historically high levels and that firms do not expect the situation to improve in the next quarter, the slowdown in curtailment of overcapacity suggests that improved orders made firms willing to keep their excess capacity for a longer time. Therefore, there is still quite a long way to go before overcapacity can be fully absorbed.

Consistent with overcapacity and the resulting tight cash position, 29% of firms reported that they faced difficulties in collecting trade receivables from their customers in Q3 (versus 32% in 2016 Q2). This problem was more prominent among collective firms (34%), as well as firms producing capital goods (34%) and intermediate goods (34%). SOEs, which represent less than 4% of the sample, were disproportionately more likely to delay payment, accounting for 21% of all the firms that have delayed payment. Therefore, the difficulty in collecting trade receivables was mainly due to a sluggish economy and the resulting lack of pricing power.

II.3 Costs Rise Slightly

Unit costs rose in Q3 with a diffusion index of 57. Both labor costs and raw materials costs increased slightly (55 and 53, versus 53 and 50 in Q2), though to a lesser extent than unit costs. Based on the firms' reported magnitudes of cost changes, we can see that cost rises in Q3 were not only due to increased production costs (i.e. labor and raw materials), but also due to increased administrative and marketing expenses.

Overcapacity means a lack of pricing power, which, combined with rising costs, results in low profit margins. As shown in Figure 9, as many as 26% of the firms surveyed had gross margins below 10%, 73% of the firms had gross margins below 15%, whereas only 6% 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.4 Financing is Not a Bottleneck

In contrast to conventional wisdom, our industrial survey has consistently found, since its inception in the second quarter of 2014, that financing is not a bottleneck for the industrial economy. As shown earlier, only 4% of firms cited financing as a constraining factor in Q3 (Figure 5). Our detailed questionnaire on capital and financing further revealed that 27% of the firms had sufficient funds, 64% answered "neutral", while only 6% reported insufficient funds (versus 8% in Q1) (Figure 10A).

A vast majority (94%) reported insufficient funds for production, not for expansion, and 5% reported insufficient funds due to operating losses.

Only a small proportion of firms have obtained new loans in the past few quarters. In Q3, this number was 2%. Among the firms without new loans, the vast majority (95%) reported that they did not have the need for capital. Moreover, the diffusion index reflecting an “accommodating” bank lending attitude stood at 62 in Q3 (versus 63 in Q2). The proportion of firms reporting a “difficult” lending attitude decreased moderately to 16% in Q3 (versus 23% in Q1). Among our sample, it was not a common trend for firms to make loans from financial institutions other than banks, with only four firms (0.2%) doing so at interest rates of below 15%.

Our finding that financing is not a bottleneck has actually been consistent with the central bank’s “Financial Institutions Lending Statistics” reports. During 2014, new loans to industrial firms declined by, on average, 30% each quarter. The net amount of new industrial loans issued in 2015 was only 5% of loan balances in 2014 Q4. This year, despite a further loosening of monetary policy, new industrial loans in the first nine months numbered only 0.15 trillion, accounting for a mere 1.35% of all new bank loans. This, on the one hand, can be attributed to a sluggish industrial economy – according to the central bank’s survey, the industrial loan demand index in Q3 was, once again, at a historical low (47%). On the other hand, many of the new loans, since the start of this year, have entered the real estate industry. In Q3, new real estate loans accounted for 57% (50% in Q2 and 33% in Q1), of which personal real estate purchase loans accounted for 99% (95% in Q2 and 67% in Q1). As a result, a large amount of loans have not entered the real economy, which has caused rapid price run-ups in the property market and in commodities.

Taken together, the fact that financing is not a bottleneck must be set against the backdrop of a declining industrial economy. Investment opportunity is scarce; as long as a firm is profitable, retained earnings are generally sufficient for operation. Even if firms need to make loans, there is also a need for fixed investment as mortgage.

IV. Conclusion

Our detailed survey indicates that China’s industrial economy did not really stabilize in the third quarter. Both our Business Sentiment Index (BSI) and employment index stood below 50, indicating contraction. Firms’ fixed investment remained sluggish: only 8% of firms made fixed investment in the second quarter, while a mere 2% made expansionary investment.

The positive news, perhaps, is that, after five quarters of persistent decline, output stabilized, with a diffusion index of 50. Such an improvement is due to an expansion in consumer goods. Our results do not support the popular belief that the

economy has been driven by real estate and infrastructure building. Real estate-related sectors, such as cement, iron & steel and coal, make up only a small proportion and are themselves in contraction. The influence of the real estate sector is more likely to have contributed via an indirect wealth effect, that is, households that sold their houses at high prices used the cash for consumption.

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Figure 1. Business Sentiment Index

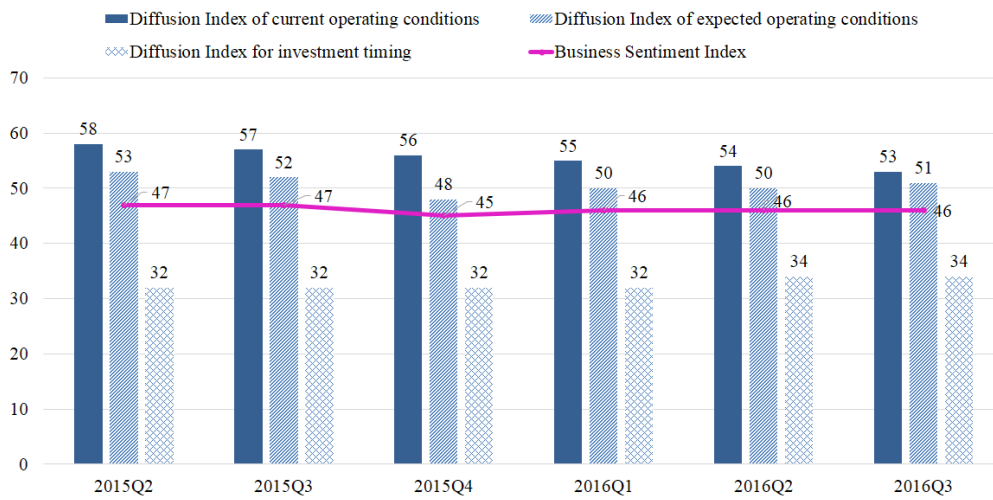


Figure 2. Current Operating Conditions

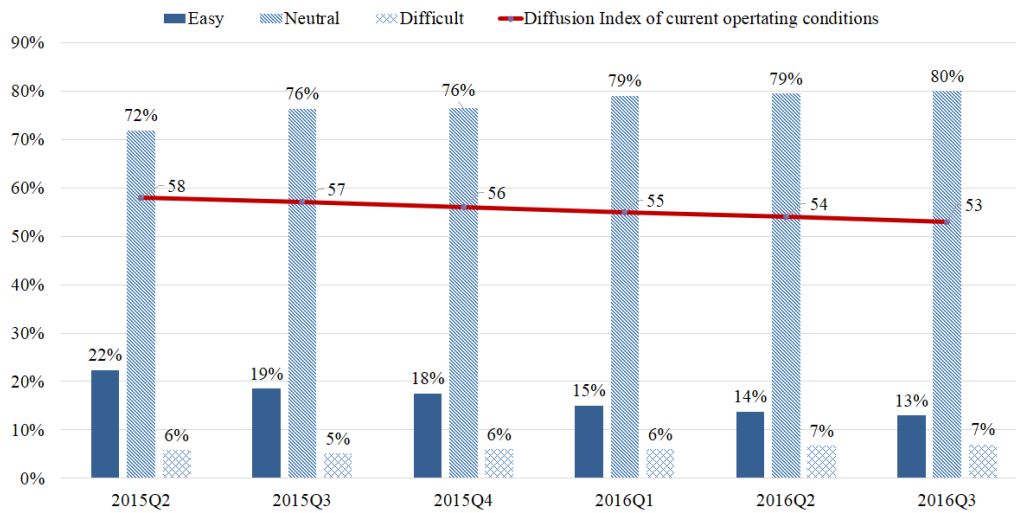


Figure 3. Investment

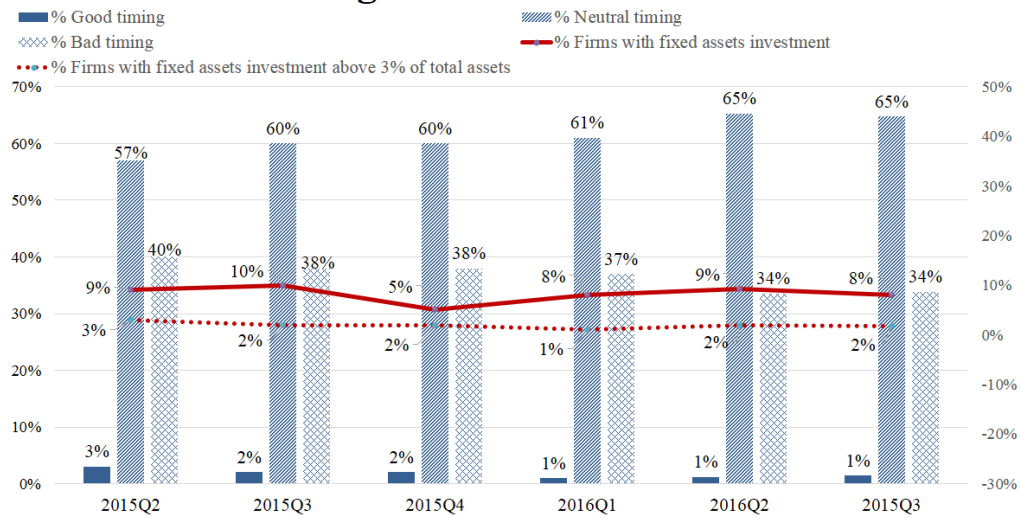


Figure 4. Other Main Economic Indices

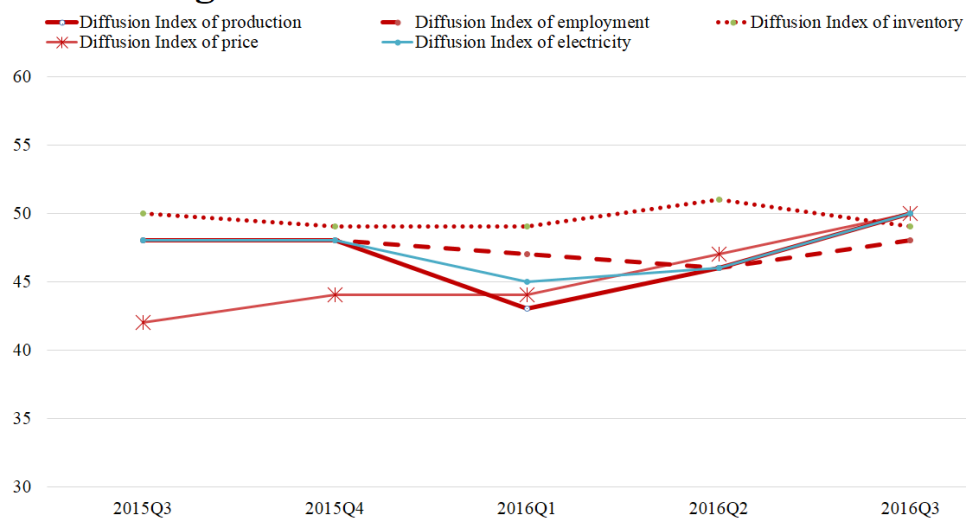


Figure 5. Factors Constraining Production of Next Quarter

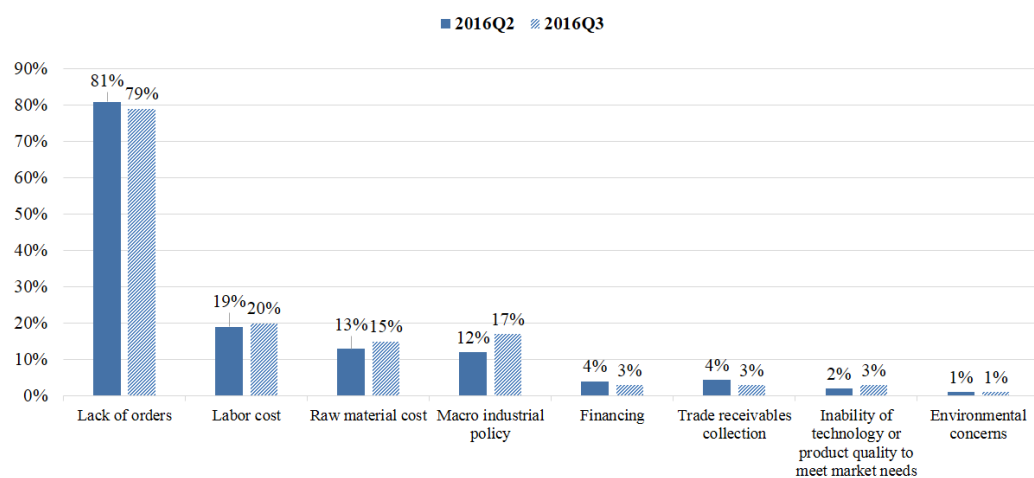


Figure 6A. Excess Capacity in Domestic Market

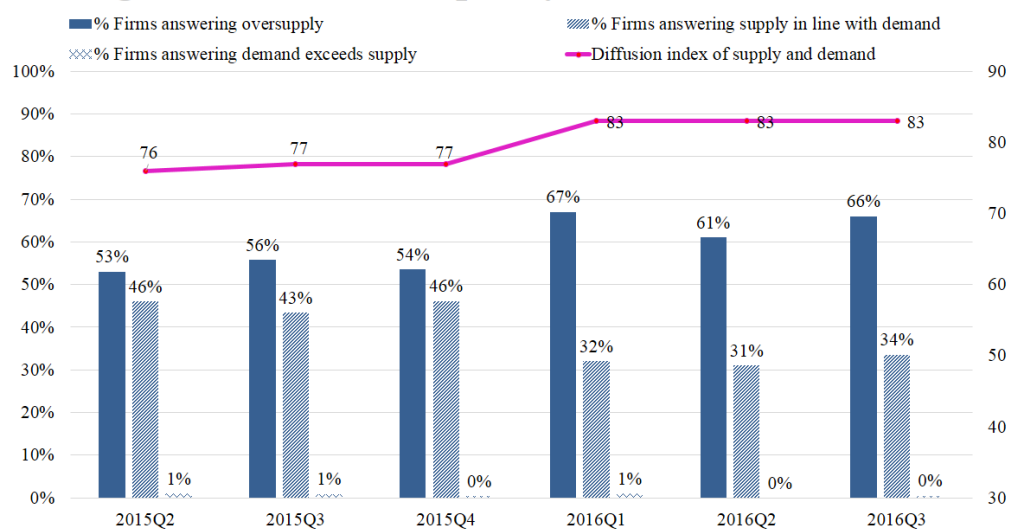


Figure 6B. Firms with Severe Excess Capacity

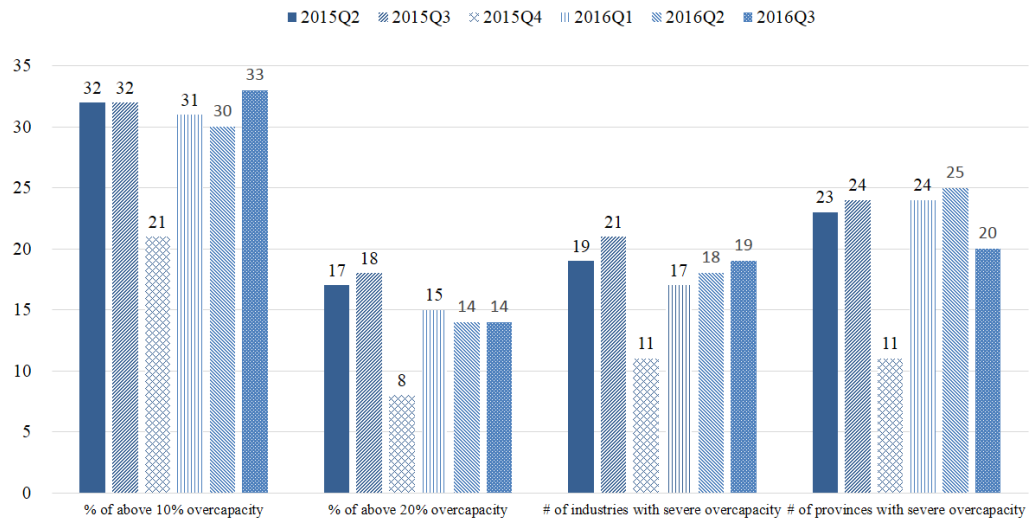


Figure 7A. Suspended Production

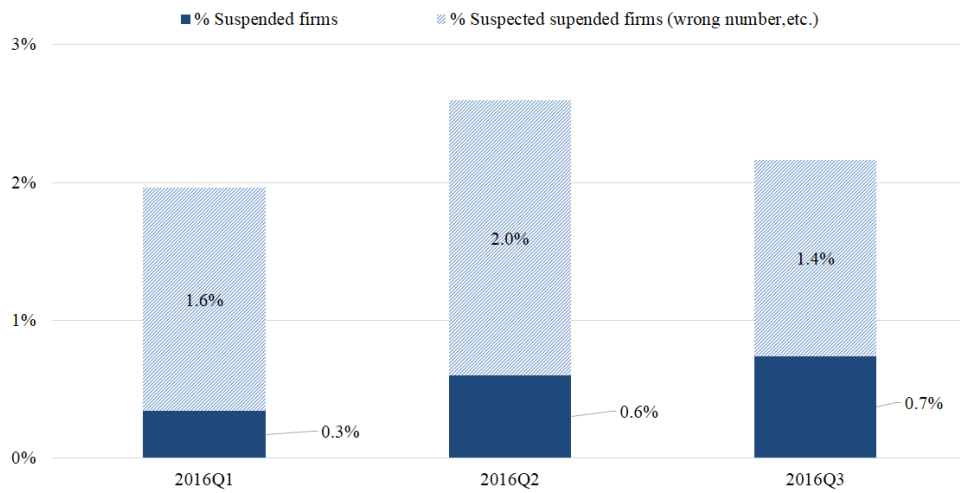


Figure 7B. Firms with Employment Reduction

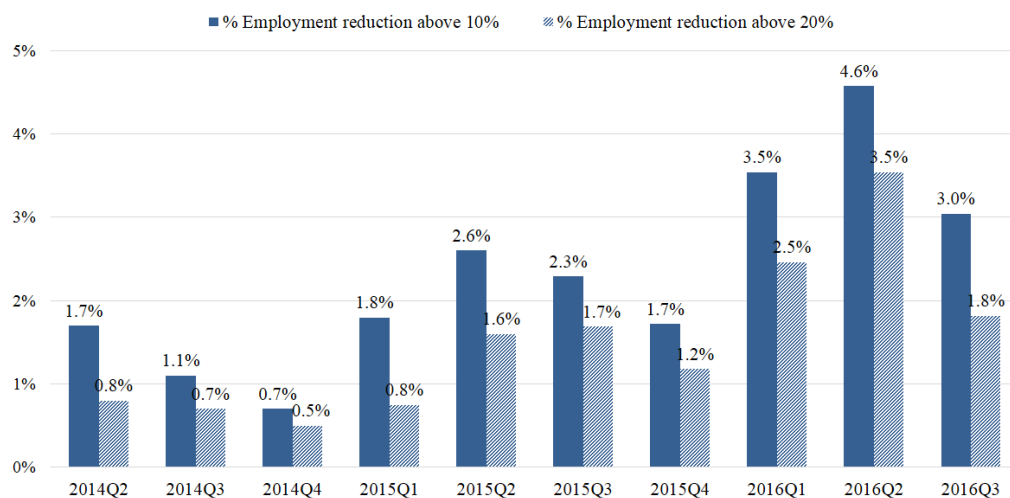


Figure 7C. Capacity Utilization

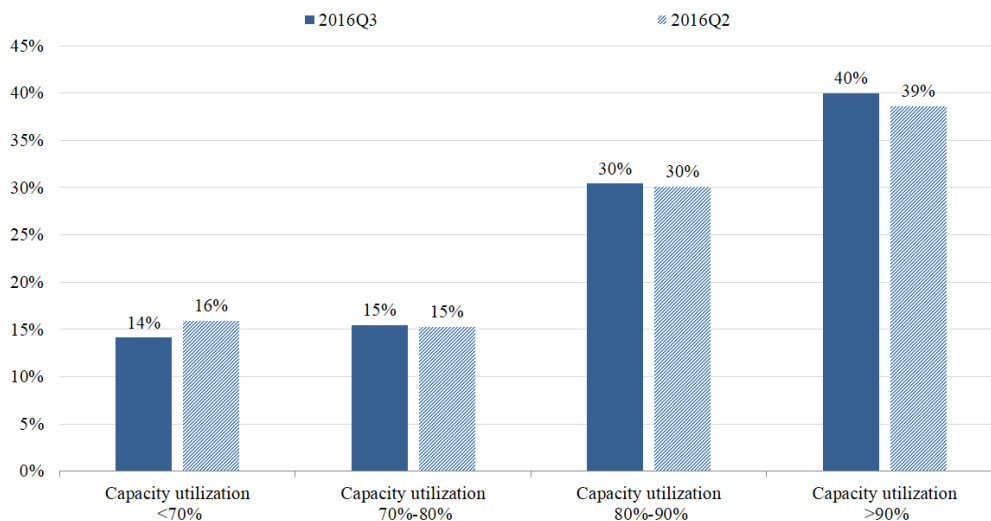


Figure 8. Costs

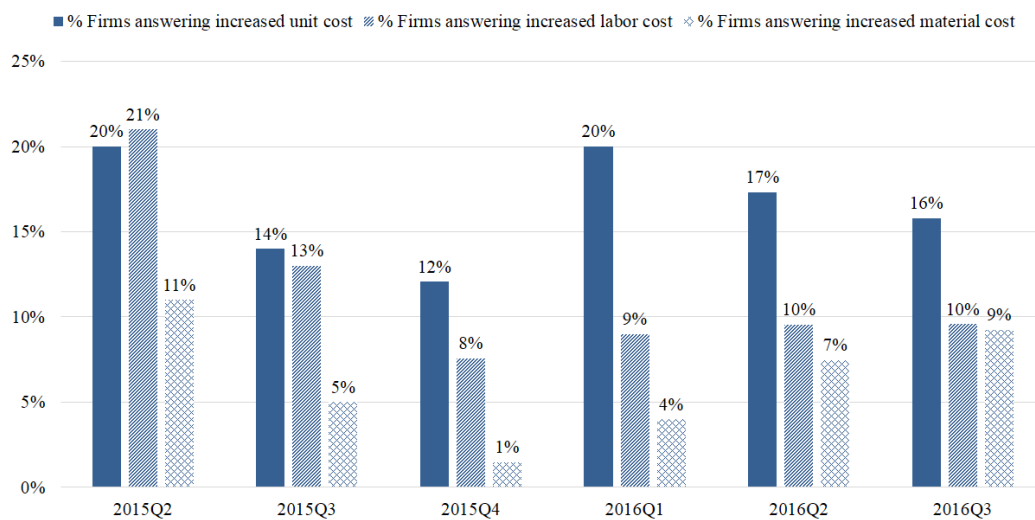


Figure 9. Gross Margins

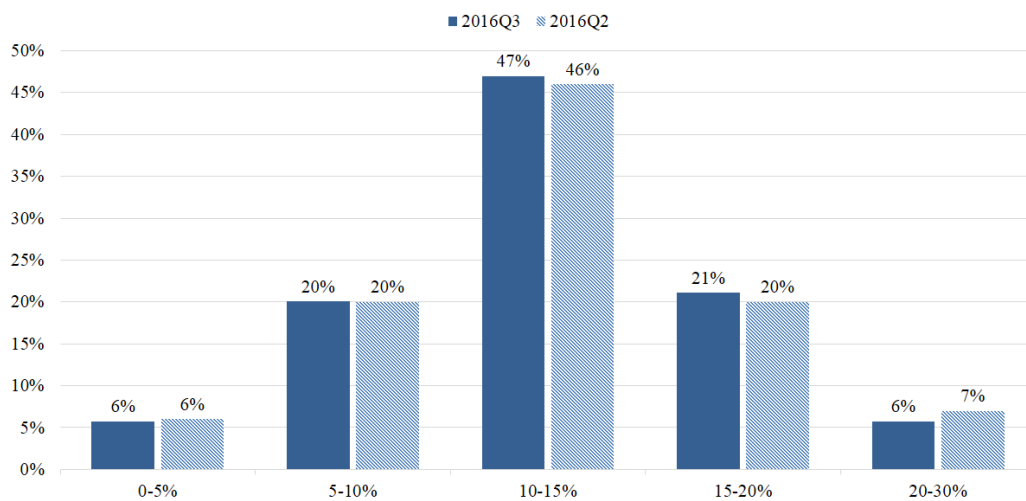


Figure 10. Financing
Figure 10A. Sufficient Capital

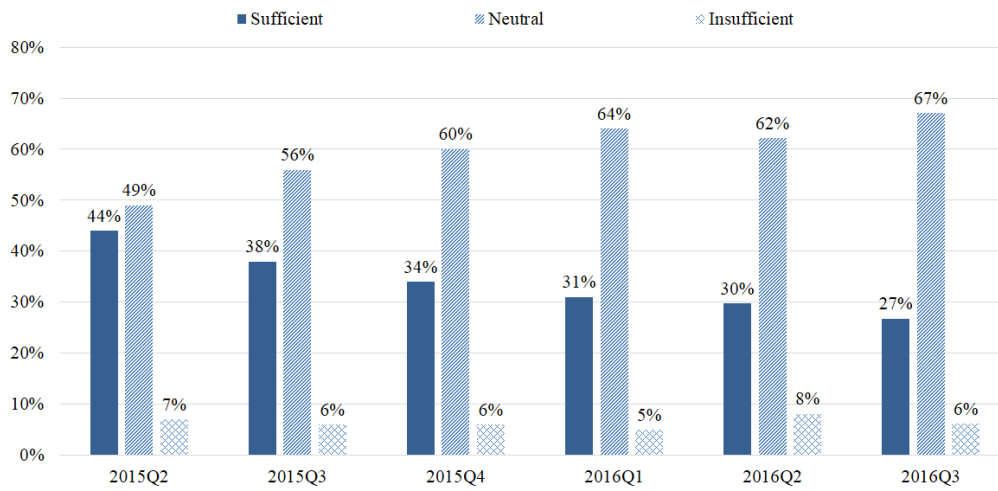


Figure 10B. New Loans

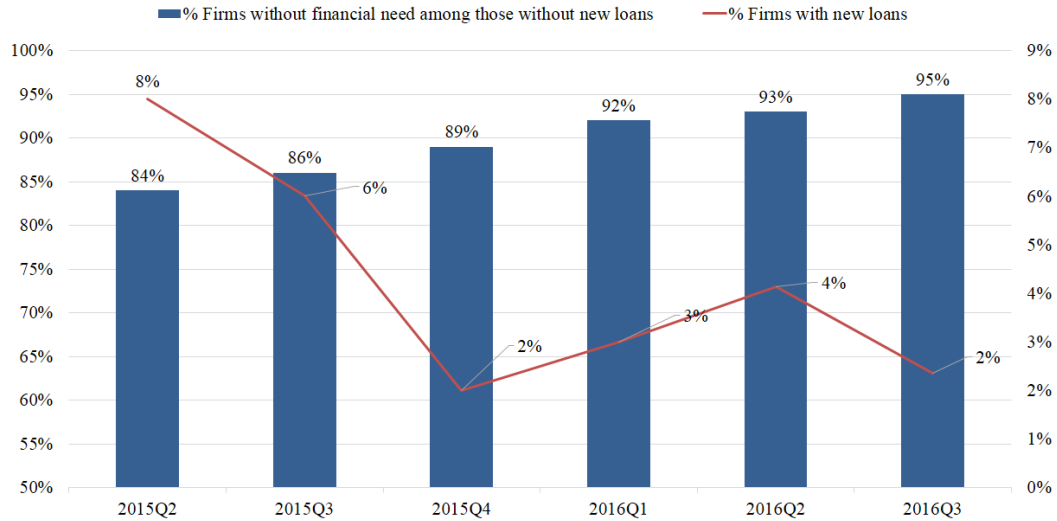


Figure 10C. Lending Attitude

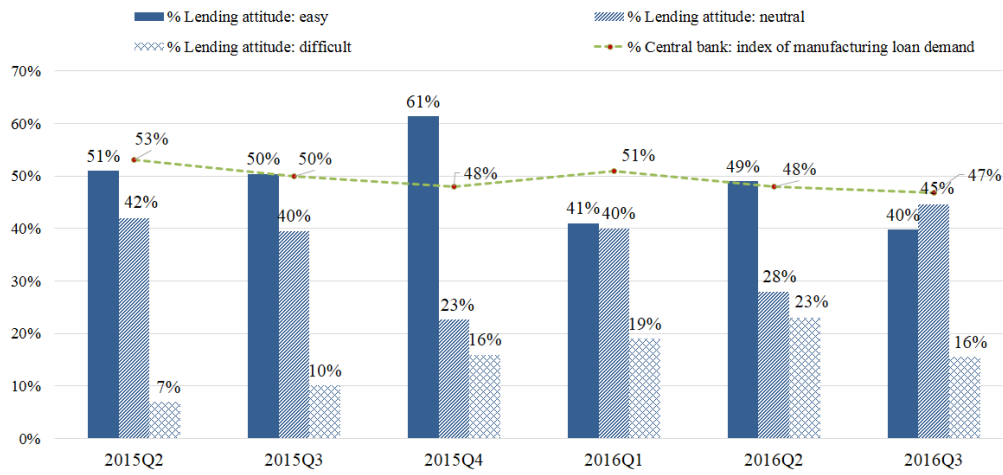


Figure 10D. Central Bank Data: New Bank Loans by Sector

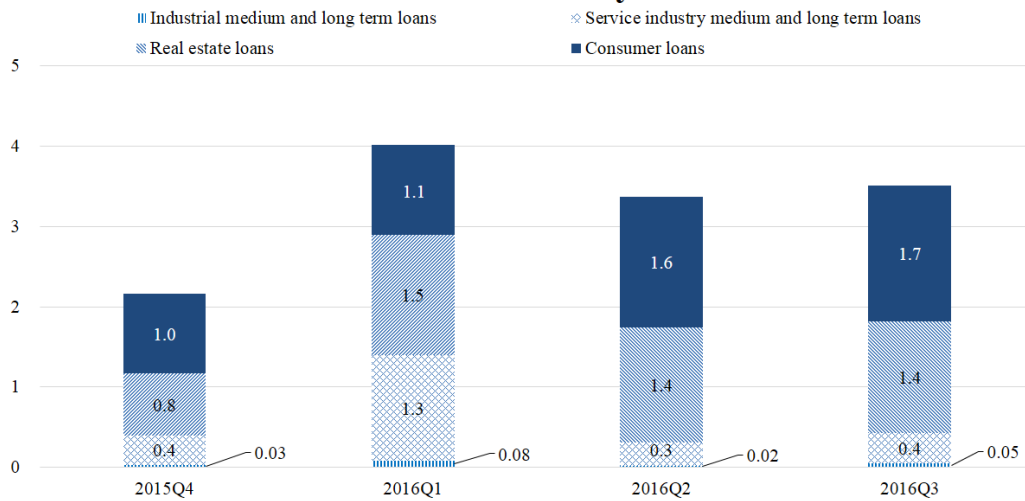


Table 1. Operating Conditions of Industrial Firms
Table 1.1

		Number of Firms		Business Sentiment Index		Diffusion Index - Operating Conditions		Diffusion Index - Expected Change in Operating Conditions		Diffusion Index - Good Timing for Investment	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
<i>By Size</i>	Nation	2,037	2,033	46	46	53	54	51	50	34	34
	Large	742	726	48	47	55	54	52	50	36	35
	Medium	708	699	46	45	53	53	52	49	33	33
	Small	587	608	45	45	52	53	50	50	32	33
<i>By Ownership</i>	State-owned	85	78	51	52	64	63	47	54	43	39
	Collectively-owned	35	38	46	47	51	54	56	53	30	34
	Private	1,670	1,656	46	45	52	52	51	49	33	33
	Foreign-owned	286	303	49	48	57	58	52	50	37	36
<i>By Product Type</i>	Consumer Goods - Durable	368	414	45	46	53	54	51	53	31	31
	Consumer Goods - Nondurable	624	643	49	48	56	56	54	50	37	36
	Capital Goods	145	168	45	45	50	53	50	49	34	34
	Intermediate Goods	901	809	45	44	52	51	50	48	33	33

Table 1.2

		% of Firms with Fixed Investment		Diffusion Index - Production		Diffusion Index - Employment		Diffusion Index - Price	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
<i>By Size</i>	Nation	8	9	50	46	48	46	50	47
	Large	9	11	52	46	48	45	50	49
	Medium	7	7	50	46	49	46	50	46
	Small	7	9	49	44	48	46	49	47
<i>By Ownership</i>	State-owned	12	16	57	57	48	47	49	48
	Collectively-owned	3	5	51	46	49	42	51	50
	Private	8	9	50	44	48	46	50	47
	Foreign-owned	8	9	53	49	49	45	49	48
<i>By Product Type</i>	Consumer Goods - Durable	5	6	54	47	49	44	49	47
	Consumer Goods - Nondurable	8	12	53	45	49	46	50	48
	Capital Goods	10	7	49	48	50	46	48	48
	Intermediate Goods	9	9	48	45	47	46	50	46

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	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
Nation		2,037	2,033	46	46	53	54	51	50	8	9	34	34
<i>Mining</i>													
	Coal Mining and Washing	10	6	42	39	40	33	45	33	10	0	40	50
	Mining and Processing of Ferrous Metal Ores	4	2	42	33	38	25	50	25	0	0	38	50
	Mining and Processing of Non-ferrous Metal	7	6	38	44	43	42	50	50	0	0	21	42
	Mining and Processing of Nonmetal Ores	9	11	39	35	33	32	56	50	0	0	28	23
<i>Production and Supply of Electricity, Heat, Gas and Water</i>													
	Power Production and Supply	33	32	51	52	55	55	48	52	21	16	50	50
	Production and Supply of Gas	1		67		50		100		100		50	
	Production and Supply of Water	16	17	52	55	81	79	38	50	13	41	38	35
<i>Light Manufacturing</i>													
	Processing of Agricultural and Related Products	103	97	48	42	51	52	66	54	6	27	27	21
	Manufacture of Foods	50	52	50	50	54	57	61	54	4	6	35	40
	Manufacture of Beverage	38	38	51	53	55	58	51	55	13	18	46	46
	Manufacture of Textiles	133	133	41	42	48	49	47	51	6	5	29	28
	Manufacture of Textile Wearing and Apparel	74	66	50	48	54	56	57	52	7	3	38	36
	Manufacture of Leather, Fur, Feather and Related Products	35	40	38	40	50	54	46	45	6	8	19	21
	Processing of Wood Products	33	35	40	40	55	54	55	49	0	0	12	16
	Manufacture of Furniture	25	30	48	46	60	55	54	53	4	0	30	30
	Manufacture of Paper and Paper Products	56	53	44	44	51	49	50	49	7	4	32	33
	Printing, Reproduction of Recording Media	55	56	48	50	56	58	47	46	7	2	42	46
	Manufacture of Cultural and Sports Products	20	23	47	46	60	59	40	48	0	0	40	33
	Manufacture of Medicines	62	61	61	60	73	75	59	52	16	36	52	52
	Manufacture of Handicrafts and Others	43	42	50	55	59	62	51	58	9	2	41	45
	Recycling and Disposal of Waste	2	1	50	17	50	50	75	0	0	0	25	0
<i>Chemical Industry</i>													
	Processing of Petroleum and Nuclear Fuel	7	10	38	32	43	40	43	30	0	0	29	25
	Manufacture of Chemical Products	126	126	47	46	52	51	51	46	13	8	38	42
	Manufacture of Chemical Fibers	9	9	50	50	56	61	56	50	22	0	39	39
	Manufacture of Rubber Products	27	26	45	46	61	63	50	48	0	0	24	27
	Manufacture of Plastics	95	96	47	44	53	53	55	49	3	3	32	30
<i>Equipment Manufacturing</i>													
	Manufacture of General-purpose Machinery	156	179	43	42	46	48	50	49	7	12	32	30
	Manufacture of Special-purpose Machinery	113	114	48	47	52	53	55	47	10	11	37	41
	Manufacture of Transport Equipment	91	86	47	48	53	55	50	47	8	5	40	41
	Manufacture of Electric Machinery and Apparatus	144	142	46	45	57	58	53	50	13	16	28	26
	Computers, Communication and Electric Equipment	83	77	52	52	58	58	50	49	13	12	47	47
	Manufacture of Measuring Instruments	37	39	42	46	53	51	46	56	0	0	28	29
<i>Other Heavy Manufacturing</i>													
	Manufacture of Non-metallic Mineral Products	130	125	38	42	45	45	41	51	1	1	29	30
	Smelting and Pressing of Ferrous Metals	26	32	45	43	46	44	56	47	0	0	33	38
	Smelting and Pressing of Non-ferrous Metals	32	29	41	44	44	41	45	47	3	3	34	43
	Manufacture of Metal Products	152	141	45	44	58	55	50	51	14	13	29	25

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	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
Nation		2,037	2,033	46	46	53	54	8	9	34	34
<i>Top Five</i>											
Manufacture of Medicines		62	61	61	60	73	75	16	36	52	52
Production and Supply of Water		16	17	52	55	81	79	13	41	38	35
Computers, Communication and Electric Equipment		83	42	52	55	58	62	13	2	47	45
Manufacture of Beverage		38	38	51	53	55	58	13	18	46	46
Power Production and Supply		33	32	51	52	55	55	21	16	50	50
<i>Bottom Five</i>											
Manufacture of Non-metallic Mineral Products		130	10	38	32	45	40	1	0	29	25
Mining and Processing of Non-ferrous Metal		7	11	38	35	43	32	0	0	21	23
Manufacture of Leather, Fur and Related Products		35	6	38	39	50	33	6	0	19	50
Processing of Petroleum and Nuclear Fuel		7	40	38	40	43	54	0	8	29	21
Mining and Processing of Nonmetal Ores		9	35	39	40	33	54	0	0	28	16

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	
	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
Nation	2,037	2,033	46	46	53	54	51	50	8	9	34	34
North China												
Beijing	46	35	47	48	50	53	51	50	4	6	39	41
Tianjin	51	50	45	45	50	53	51	48	6	4	34	34
Hebei	75	83	44	43	53	53	51	48	8	11	27	27
Northeast												
Liaoning	97	95	42	44	48	51	46	46	5	9	30	34
Jilin	20	20	47	42	58	50	50	43	0	5	33	33
Heilongjiang	27	26	40	46	50	54	46	58	4	15	24	27
Northwest												
Inner Mongolia	14	14	57	58	61	57	61	68	14	21	50	50
Shaanxi	22	26	45	46	50	52	55	50	5	4	30	37
Gansu	7	5	45	47	43	50	57	50	29	40	36	40
Ningxia	4	5	29	40	38	40	25	50	0	0	25	30
Xinjiang	5	5	33	53	40	50	30	80	0	20	30	30
Central North												
Shanxi	24	22	42	43	50	50	46	48	4	9	29	32
Shandong	193	191	48	48	56	56	53	52	9	8	37	37
Henan	66	63	43	45	53	52	48	49	9	10	29	33
Southwest												
Chongqing	29	30	47	45	57	52	48	52	3	10	34	32
Sichuan	50	47	44	42	46	48	54	48	12	9	33	31
Guizhou	7	9	52	46	50	50	71	56	0	11	36	33
Yunnan	23	22	43	45	52	55	48	48	22	18	28	32
East China												
Shanghai	97	99	49	47	57	57	52	50	3	3	37	35
Jiangsu	306	302	47	45	54	53	51	49	9	8	35	33
Zhejiang	292	298	47	45	54	54	54	49	9	10	34	33
South China												
Fujian	84	89	45	45	51	52	53	50	2	8	31	32
Guangdong	266	265	47	48	55	55	52	52	9	11	35	35
Guangxi	33	35	45	44	52	51	50	49	18	11	35	31
Hainan	1	1	67	17	100	50	100	0	0	0	0	0
Central South												
Anhui	74	72	45	43	52	52	53	44	3	10	32	33
Jiangxi	38	41	48	52	55	57	53	61	16	15	37	37
Hubei	48	49	43	46	52	53	48	50	8	12	30	35
Hunan	38	34	46	45	53	53	47	47	16	9	38	35

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	
	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
Nation	2,037	2,033	46	46	53	54	8	9	34	34
Top Five										
Inner Mongolia	14	14	57	58	61	57	14	21	50	50
Guizhou	7	5	52	53	50	50	0	20	36	30
Shanghai	97	41	49	52	57	57	3	15	37	37
Jiangxi	38	265	48	48	55	55	16	11	37	35
Shandong	193	35	48	48	56	53	9	6	37	41
Bottom Five										
Ningxia	4	5	29	40	38	40	0	0	25	30
Xinjiang	5	47	33	42	40	48	0	9	30	31
Heilongjiang	27	20	40	42	50	50	4	5	24	33
Liaoning	97	22	42	43	48	50	5	9	30	32
Shanxi	24	72	42	43	50	52	4	10	29	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	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
Nation		2037	2033	83	83	70	68	49	51
<i>By Size</i>									
	Large	742	726	82	82	69	67	50	50
	Medium	708	699	83	84	70	69	49	50
	Small	587	608	84	84	71	69	48	52
<i>By Ownership</i>									
	State-owned	85	78	71	71	63	56	45	46
	Collectively-owned	35	38	78	78	78	75	44	50
	Private	1670	1656	83	84	70	69	49	51
	Foreign -owned	286	303	84	83	68	67	50	49
<i>By Product Type</i>									
	Consumer Goods - Durable	368	414	78	78	66	66	49	49
	Consumer Goods - Nondurable	624	643	81	82	68	65	50	51
	Capital Goods	145	168	86	85	71	68	49	50
	Intermediate Goods	901	809	85	85	73	72	49	52

Table 4.2 Industries with Severe Excess Capacity

	Number of Firms	% of Firms with 20% Excess Capacity and Above	% of Firms with 10% Excess Capacity and Above
Processing of Petroleum and Nuclear Fuel	7	57	71
Mining and Processing of Ferrous Metal Ores	4	50	100
Mining and Processing of Nonmetal Ores	9	44	78
Mining and Processing of Non-ferrous Metal	7	43	71
Coal Mining and Washing	10	40	40
Smelting and Pressing of Ferrous Metals	26	31	50
Manufacture of Metal Products	152	30	48
Manufacture of Non-metallic Mineral Products	130	30	40
Manufacture of Electric Machinery and Apparatus	144	22	40
Processing of Wood Products	33	21	30
Smelting and Pressing of Non-ferrous Metals	32	19	31
Manufacture of Special-purpose Machinery	113	18	35
Manufacture of Measuring Instruments	37	14	14
Processing of Agricultural and Related Products	103	13	39
Manufacture of Furniture	25	12	24
Manufacture of Foods	50	12	24
Manufacture of Leather, Fur, Feather and Related Products	35	11	43
Manufacture of Rubber Products	27	11	30
Manufacture of Cultural and Sports Products	20	10	10

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

	Number of Firms	% of Firms with 20% Excess Capacity and Above	% of Firms with 10% Excess Capacity and Above
Xinjiang	5	40	60
Shaanxi	22	32	41
Yunan	23	26	43
Shanxi	24	25	50
Liaoning	97	25	49
Hunan	38	24	32
Tianjin	51	24	49
Heilongjiang	27	22	33
Inner Mongolia	14	21	29
Jilin	20	20	35
Sichuan	50	18	34
Chongqing	29	17	34
Henan	66	17	41
Beijing	46	15	30
Anhui	74	15	34
Hebei	75	15	36
Guizhou	7	14	29
Guangxi	33	12	33
Fujian	84	12	37
Jiangsu	306	10	28

- 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	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
Nation		2,037	2,033	57	55	55	53	53	50	50	47
<i>By Size</i>											
	Large	742	726	58	56	55	53	53	51	50	49
	Medium	708	699	58	56	55	54	54	49	50	46
	Small	587	608	56	55	53	52	52	49	49	47
<i>By Ownership</i>											
	State-owned	85	78	51	48	51	48	52	53	50	48
	Collectively-owned	35	38	61	62	59	57	54	54	51	50
	Private	1,670	1,656	58	55	55	53	53	49	50	47
	Foreign -owned	286	303	56	57	54	54	53	52	49	48
<i>By Product Type</i>											
	Consumer Goods - Durable	368	414	55	52	53	52	53	48	49	47
	Consumer Goods - Nondurable	624	643	62	58	56	53	55	50	50	48
	Capital Goods	145	168	51	51	52	50	49	51	48	48
	Intermediate Goods	901	809	56	56	54	54	53	50	50	46

Table 5.2 Industries 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	2037	57	55	53	50
Manufacture of Textiles	133	81	54	57	44
Processing of Agricultural and Related Products	103	72	62	61	54
Manufacture of Foods	50	68	67	62	57
Smelting and Pressing of Non-ferrous Metals	32	67	66	61	48
Coal Mining and Washing	10	65	60	56	65
Smelting and Pressing of Ferrous Metals	26	65	65	64	54
Manufacture of Plastics	95	65	53	54	45
Manufacture of Furniture	25	64	62	62	50
Mining and Processing of Ferrous Metals	4	63	63	63	50
Manufacture of Textile Wearing and Apparel	74	62	57	56	49
Processing of Wood Products	33	61	61	59	52
Mining and Processing of Nonmetal Ores	9	61	61	56	44
Manufacture of Non-metallic Mineral Products	130	60	60	56	51
Manufacture of Leather, Fur and Related Products	35	59	56	51	53
Manufacture of Cultural and Sports Products	20	58	58	50	53
Manufacture of Measuring Instruments	37	58	58	51	47
Processing of Petroleum and Nuclear Fuel	7	57	57	57	36
Smelting and Pressing of Non-ferrous Metals	7	57	57	50	57
Manufacture of Rubber Products	27	57	59	48	46

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

	Number of Firms	Diffusion Indices			
		Unit Cost Index	Labor Cost Index	Raw Material Cost Index	Price Index
Nation	2037	57	55	53	50
Inner Mongolia	14	68	64	61	46
Ningxia	4	63	63	50	50
Yunan	23	61	59	61	57
Shandong	193	61	55	54	51
Hubei	48	60	57	54	48
Fujian	84	59	54	53	51
Heilongjiang	27	59	56	56	46
Jiangsu	306	58	55	53	50
Guangdong	266	58	55	53	49
Guangxi	33	58	56	55	47
Zhejiang	292	58	53	53	48
Jiangxi	38	58	58	54	50
Chongqing	29	57	55	55	53
Shaanxi	22	57	55	55	52
Guizhou	7	57	64	50	71
Beijing	46	57	55	51	49
Anhui	74	57	54	55	49
Gansu	7	57	64	50	50
Chongqing	30	55	53	53	52

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

		% Firms with Loans		% Firms with New Loans		Collateralization Rate %		Diffusion Index - Lending Attitude		Diffusion Index - Interest Rate	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
Nation		2,037	2,033	23	24	2	4	62	63	49	43
<i>With or Without Investment</i>											
Firms with Investment		165	188	27	30	6	10	59	72	50	44
Firms without Investment		1,872	1,845	23	23	2	4	63	61	48	42
<i>By Size</i>											
Large		742	726	27	27	2	4	68	68	50	45
Medium		708	699	24	24	3	4	67	67	47	44
Small		587	608	19	20	2	4	45	53	50	39
<i>By Ownership</i>											
State-owned		85	78	20	19	2	2	50	38	50	29
Collectively-owned		35	38	23	18	6	5	67	50	17	25
Private		1,670	1,656	24	25	2	5	62	64	50	43
Foreign -owned		286	303	19	17	1	2	75	65	50	42
<i>By Product Type</i>											
Consumer Goods - Durable		368	414	25	26	3	5	63	63	50	43
Consumer Goods - Nondurable		624	643	24	22	4	5	56	65	47	39
Capital Goods		145	168	29	28	0	5	75	56	50	44
Intermediate Goods		901	809	21	24	1	3	67	63	50	45

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*The most important source of financing*

Sources	Number of Firms	% of Firms
Internal Funds	2015	99
Founder	40	2
Relatives and friends	0	0
Bank	15	1
Stock market	2	0
Non-official finance institution	1	0
Others	1	0

The second most important source of financing

Sources	Number of Firms	% of Firms
Founder	490	50
Bank	467	48
Internal Funds	14	1
Others	3	0
Relatives and Friends	2	0
Stock market	1	0
Non-official finance institution	0	0

Appendix 1. Industry and Regional Ranking of Excess Capacity

Table A1. 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	
	Q3	Q2	Q3	Q2	Q3	Q2
Processing of Petroleum and Nuclear Fuel	7	10	57	60	71	70
Mining and Processing of Nonmetal Ores	9	11	44	36	78	64
Mining and Processing of Non-ferrous Metal	7	6	43	67	71	67
Coal Mining and Washing	10	6	40	33	40	33
Smelting and Pressing of Ferrous Metals	26	32	31	38	50	47
Manufacture of Non-metallic Mineral Products	130	125	30	37	40	50
Manufacture of Metal Products	152	141	30	28	48	43
Manufacture of Electric Machinery and Apparatus	144	142	22	25	40	39
Processing of Wood Products	33	35	21	26	30	37
Smelting and Pressing of Non-ferrous Metals	32	29	19	31	31	41
Manufacture of Special-purpose Machinery	113	114	18	18	35	31
Manufacture of Measuring Instruments	37	39	14	18	14	23
Processing of Agricultural and Related Products	103	97	13	18	39	47
Manufacture of Furniture	25	30	12	13	24	27
Manufacture of Foods	50	52	12	15	24	29
Manufacture of Leather, Fur, Feather and Footwear	35	40	11	10	43	43
Manufacture of Rubber Products	27	26	11	12	30	35
Manufacture of Cultural and Sports Products	20	23	10	9	10	9
Manufacture of Medicines	62	61	10	5	23	21
Manufacture of Chemical Products	126	126	8	10	28	33
Manufacture of Paper and Paper Products	56	53	7	9	41	32
Printing, Reproduction of Recording Media	55	56	7	7	45	34
Manufacture of Transport Equipment	91	86	5	5	35	21
Manufacture of Plastics	95	96	5	5	37	38
Computers, Communication and Electric Equipment	83	77	4	6	30	26
Manufacture of General-purpose Machinery	156	179	4	4	13	5
Manufacture of Beverage	38	38	3	5	50	47
Manufacture of Textile Wearing and Apparel	74	66	3	5	7	9
Manufacture of Textiles	133	133	2	2	2	2
Manufacture of Handicrafts and Others	43	42	2	2	30	24
Power Production and Supply	33	32	0	3	15	19
Manufacture of Chemical Fibers	9	9	0	0	22	22
Production and Supply of Water	16	17	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	
	Q3	Q2	Q3	Q2	Q3	Q2
Xinjiang	5	5	40	40	60	60
Shaanxi	22	26	32	27	41	38
Yunnan	23	22	26	27	43	45
Liaoning	97	95	25	27	49	48
Shanxi	24	22	25	27	50	45
Hunan	38	34	24	26	32	32
Tianjin	51	50	24	30	49	48
Heilongjiang	27	26	22	19	33	27
Inner Mongolia	14	14	21	29	29	36
Jilin	20	20	20	30	35	50
Sichuan	50	47	18	21	34	32
Henan	66	63	17	14	41	38
Chongqing	29	30	17	17	34	33
Hebei	75	83	15	17	36	36
Anhui	74	72	15	18	34	40
Beijing	46	35	15	17	30	31
Guizhou	7	9	14	33	29	33
Fujian	84	89	12	10	37	34
Guangxi	33	35	12	14	33	34
Jiangsu	306	302	10	11	28	24
Shandong	193	191	9	10	26	25
Zhejiang	292	298	9	10	24	23
Guangdong	266	265	9	8	26	24
Jiangxi	38	41	8	15	24	24
Hubei	48	49	8	8	25	27
Shanghai	97	99	7	11	27	25
Gansu	7	5	0	0	0	0
Ningxia	4	5	0	60	0	60

Notes:

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

Appendix 2. Industry and Regional Ranking of Excess Capacity

Table A2. 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	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
	Nation	2,037	2,033	57	55	55	53	53	50	50	47
<i>Mining</i>											
	Coal Mining and Washing	10	6	65	58	60	50	56	60	65	58
	Mining and Processing of Ferrous Metal Ores	4	2	63	0	63	0	63	0	50	0
	Mining and Processing of Non-ferrous Metal	7	6	57	50	57	50	50	50	57	67
	Mining and Processing of Nonmetal Ores	9	11	61	59	61	55	56	55	44	45
<i>Production and Supply of Electricity, Heat, Gas and Water</i>											
	Power Production and Supply	33	32	50	47	50	47	52	52	50	42
	Production and Supply of Water	16	17	50	50	50	50	0	50	50	50
	Production and Supply of Gas	1	1	50	50	50	50	0	50	50	50
<i>Light Manufacturing</i>											
	Processing of Agricultural and Related Products	103	97	72	42	62	45	61	43	54	53
	Manufacture of Foods	50	52	68	64	67	63	62	59	57	56
	Manufacture of Beverage	38	38	50	54	51	54	50	54	50	50
	Manufacture of Textiles	133	133	81	96	54	60	57	46	44	33
	Manufacture of Textile Wearing and Apparel	74	66	62	56	57	56	56	55	49	49
<i>Manufacture of Leather, Fur, Feather, Related Products and Footwear</i>											
	Processing of Wood Products	35	40	59	59	56	55	51	53	53	55
	Manufacture of Furniture	33	35	61	59	61	60	59	59	52	50
	Manufacture of Paper and Paper Products	25	30	64	57	62	55	62	53	50	52
		56	53	54	52	54	52	51	50	51	50

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	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
Printing, Reproduction of Recording Media		55	56	51	52	51	51	51	52	49	49
Manufacture of Cultural and Sports Products		20	23	58	59	58	59	50	52	53	50
Manufacture of Medicines		62	61	50	50	50	50	50	51	50	51
Manufacture of Handicrafts and Others		43	42	52	53	52	53	49	49	45	49
Recycling and Disposal of Waste		2	1	75	50	75	50	50	50	75	50
Chemical Industry											
Processing of Petroleum and Nuclear Fuel		7	10	57	55	57	55	57	55	36	40
Manufacture of Chemical Products		126	126	52	53	52	56	52	50	52	50
Manufacture of Chemical Fibers		9	9	56	72	56	72	61	67	50	50
Manufacture of Rubber Products		27	26	57	56	59	58	48	48	46	40
Manufacture of Plastics		95	96	65	67	53	58	54	43	45	35
Equipment Manufacturing											
Manufacture of General-purpose Machinery		156	179	50	41	52	45	49	41	47	44
Manufacture of Special-purpose Machinery		113	114	50	50	53	50	49	51	47	47
Manufacture of Transport Equipment		91	86	52	53	52	53	49	49	49	49
Manufacture of Electric Machinery and Apparatus		144	142	50	50	50	50	52	50	51	50
Computers, Communication and Electric Equipment		83	77	52	52	52	51	51	51	49	47
Manufacture of Measuring Instruments		37	39	58	59	58	59	51	50	47	47
Other Heavy Manufacturing											
Manufacture of Non-metallic Mineral Products		130	125	60	56	60	58	56	50	51	47
Smelting and Pressing of Ferrous Metals		26	32	65	56	65	56	64	56	54	52
Smelting and Pressing of Non-ferrous Metals		32	29	67	52	66	52	61	52	48	50
Manufacture of Metal Products		152	141	51	51	50	50	53	51	52	49

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

Table A2.2 Regional Diffusion Index for Cost and Price

		Diffusion Indices									
		Number of Firms		Unit Cost Index		Labor Cost Index		Raw Material Cost Index		Price Index	
		Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2	Q3	Q2
	Nation	2,037	2,033	57	55	55	53	50	50	50	47
<i>North China</i>											
	Beijing	46	35	57	51	55	51	51	50	49	49
	Tianjin	51	50	55	54	54	54	50	50	48	49
	Hebei	75	83	54	52	51	51	54	51	51	46
	Northeast										
	Liaoning	97	95	56	54	54	51	50	53	48	47
	Jilin	20	20	50	53	53	53	50	55	50	53
	Heilongjiang	27	26	59	50	56	50	56	48	46	48
<i>Northwest</i>											
	Inner Mongolia	14	14	68	50	64	50	61	46	46	46
	Shaanxi	22	26	57	52	55	56	55	46	52	48
	Gansu	7	5	57	40	64	50	50	40	50	40
	Ningxia	4	5	63	60	63	60	50	60	50	40
	Xinjiang	5	5	50	50	50	70	50	40	50	60
<i>Central North</i>											
	Shanxi	24	22	54	45	56	50	52	48	50	45
	Shandong	193	191	61	56	55	53	54	48	51	48
	Henan	66	63	53	51	53	52	51	49	50	47
<i>Southwest</i>											
	Chongqing	29	30	57	55	55	53	55	53	53	52
	Sichuan	50	47	56	48	55	49	59	49	51	47
	Guizhou	7	9	57	56	64	56	50	50	71	56
	Yunnan	23	22	61	45	59	48	61	48	57	55
<i>East China</i>											
	Shanghai	97	99	56	51	55	53	54	49	51	48
	Jiangsu	306	302	58	58	55	54	53	48	50	45
	Zhejiang	292	298	58	58	53	53	53	49	48	45
<i>South China</i>											
	Fujian	84	89	59	58	54	53	53	51	51	50
	Guangdong	266	265	58	58	55	54	53	51	49	49
	Guangxi	33	35	58	60	56	54	55	57	47	49
	Hainan	1	1	50	50	50	50	50	50	50	50
<i>Central South</i>											
	Anhui	74	72	57	57	54	56	55	49	49	51
	Jiangxi	38	41	58	54	58	55	54	51	50	50
	Hubei	48	49	60	52	57	52	54	49	48	45
	Hunan	38	34	51	51	50	54	51	48	49	46

Notes:

The table includes provinces with more than three firms.

Appendix 3. Sampling Procedure

3.1 The Population

The initial sample of our panel is taken from the 2008 Economic Census. This is the most complete and reliable economic census data available. A new round of Economic Census is currently ongoing.

Although the 2008 Economic Census is our best choice, it is done seven years ago. Firm characteristics, such as industry, might have changed significantly. Thus we ask firms about their main products and product types. But we cannot cover companies established after 2008 this problem can only be resolved when the latest Economic Census data (2013 are made available to the public).

2008 Economic Census database is made of provincial databases each containing two sets of data: one uses industrial units and the other uses legal person units.¹We start with the legal person units in 2008 Economic Census database. We then drop non-industrial firms and firms with sales below five million RMB to obtain the population of what NBS terms as “sizable” industrial firms.

3.2 Sampling Procedure

Below is a step-by-step description of the procedure to obtain our initial survey sample in our first survey, that is, the 2014 Q2 survey.

1. Simplify industrial classification code. Using Industrial classification for national economic activities (GBT4754-2002)² as the standard, we only define firms' industry up to major groups (two digit code from 01 to 98)³.
2. Simplify area code. We use the first two digits to place firms in 31 provinces and municipalities.
3. Remove nonindustrial firms: using industry code specified in step 1, we remove those with code smaller than 6 or larger than 46, retaining 39 industry categories. Those left are mining (06-11), manufacturing (13-43) and electricity, gas and water production and processing (44-46).
4. Remove below-scale firms: we remove those with less than 5,000,000RMB in annual main business income, this step removed about $\frac{3}{4}$ of total firms. As of this step, we obtain the population of sizable industrial firms, which consists of 488,052 firms.
5. Classify firms by size into 3 categories using 33% and 66% percentiles in main business income.
6. Take a stratified random sample using size, region and industry as strata, taking 2.1% of the population. The final sample consists of 10,139 firms.

¹ Legal person units are composed of industrial activity units, industrial activity units are all under management and control of legal person units.

² Since the original database is based on census conducted in 2008, we use GBT4754-2002 industry classification rather than the newer GBT4754-2011 classification.

³ Industrial classification for national economic activities (GBT4754-2002) classifies firms into division, major group, minor group, subgroup, in order of increasing detail. For example, the subgroup 1361 seafood frozen processing belongs in division A (manufacturing), major group 13 (agriculture and by-product processing), and minor group 136 (seafood processing).

In our Q3 survey, we started from the 2,033 firms in our last response sample, and obtain responses from 1,576 firms. These firms match the population in terms of industry, region, and sizes reasonably well. Nevertheless, we draw an additional survey samples with an industry-region-size distribution such that the final response sample would match the population, assuming (1) random responses and (2) a 20% response rate. We obtained 461 responses from this new sample, resulting in a total of 2,037 firms in our final response sample.

3.3 Survey Process

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

3.4. Sample Representativeness

Tables A3.1-A3.3 show that the distribution of the population and the Q3 response sample, as well as the 1,576 firms that were also in the Q2 sample, in terms of industry, region, and sizes. Note that as we are sampling 2.1% of the population, some small strata may not be sampled. Specifically, Qinghai and Tibet are two regions not sampled; and Mining of other Ores, Extraction of Petroleum and Natural Gas and Manufacture of Tobacco are three industries not sampled. Overall, 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 asking directly the firms about seasonality and its impact. As shown in Figure A1.4, the majority (87%) of firms report no seasonality; for 6% of the firms, seasonality impact is below 5%. Most importantly, the impact of seasonality is roughly symmetrical distributed. 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

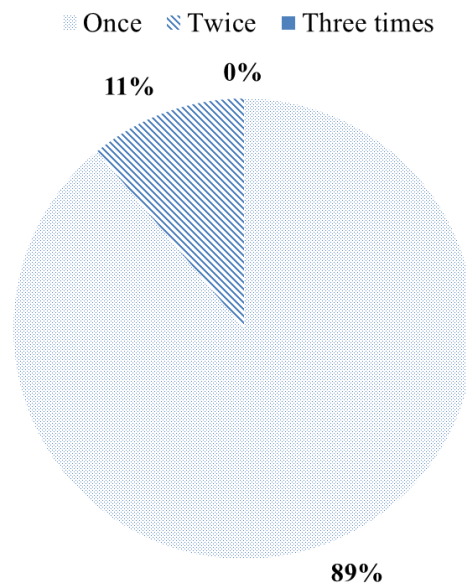


Figure A1.2 Duration of Calls

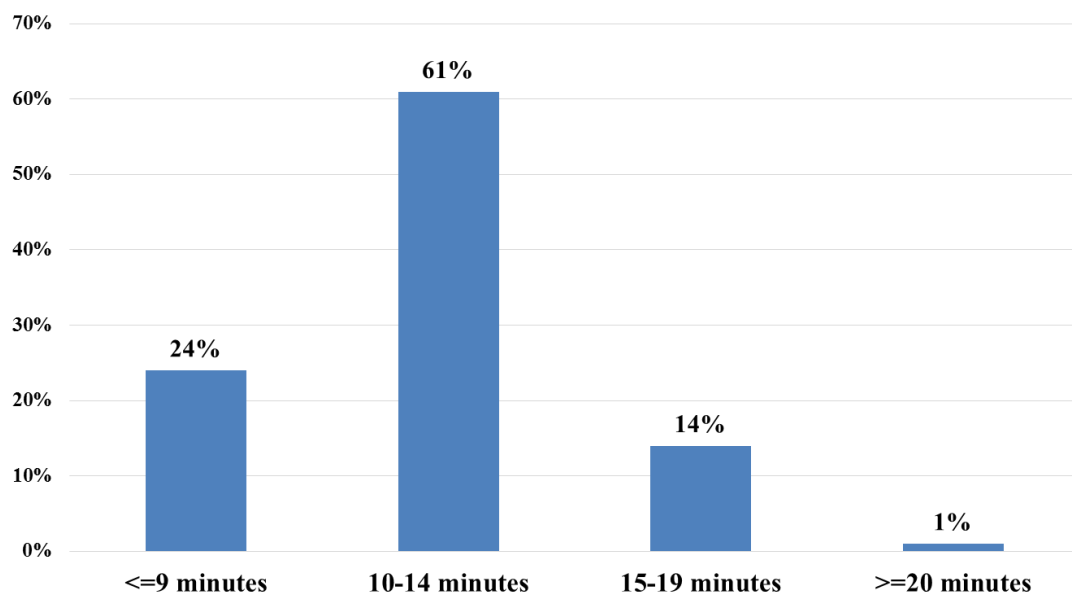


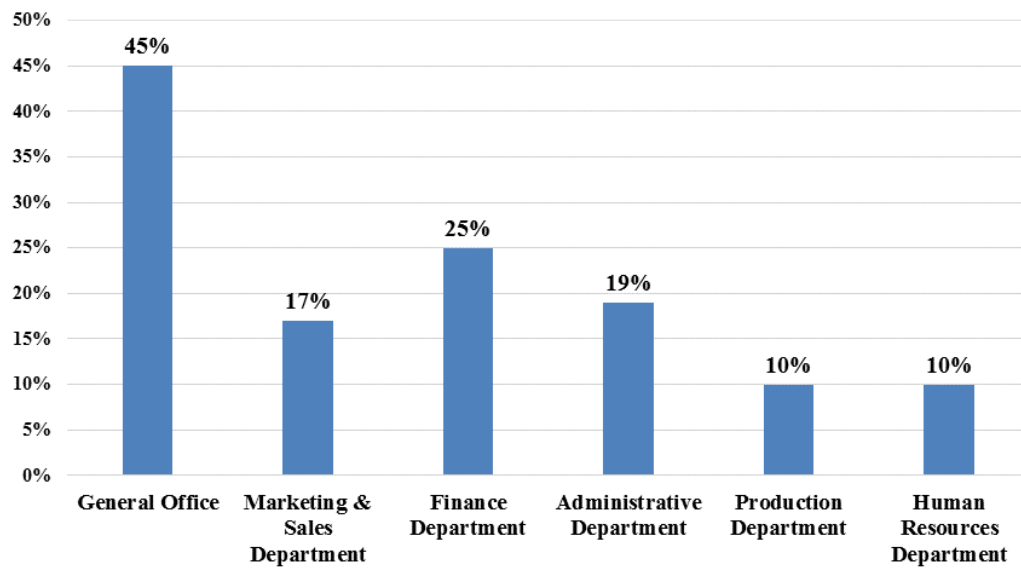
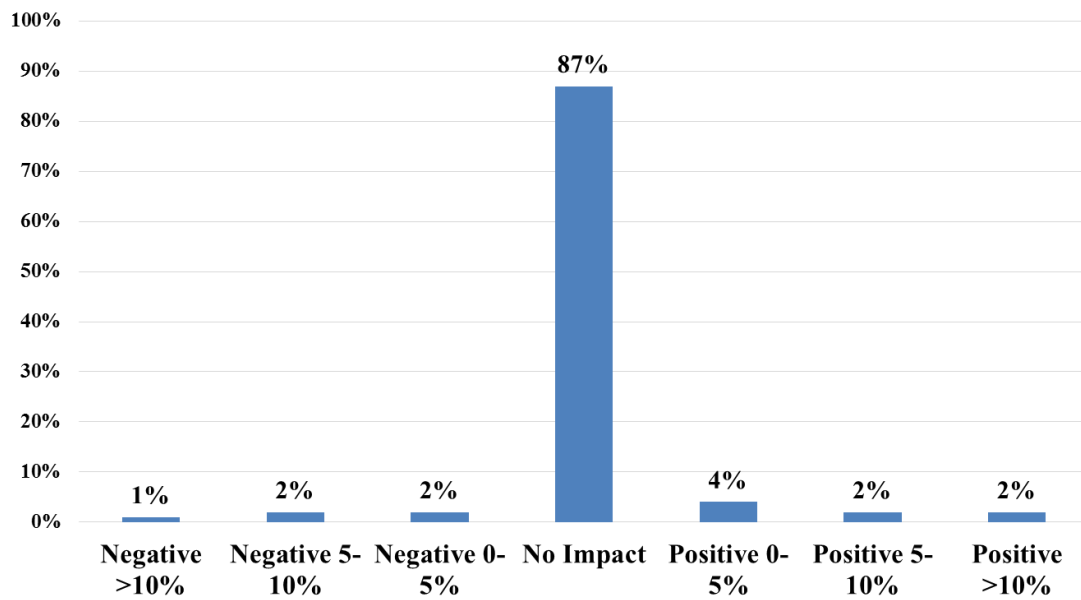
Figure A1.3 Interviewees' Positions**Figure A1.4 Seasonality**

Table A3. Comparisons between Survey Sample and the Population**Table A3.1 Industry Distribution**

	Population		1,576 Firms From Q2 Survey		Final Q3 Response Sample	
	Number of Firms	Percent	Number of Firms	Percent	Number of Firms	Percent
Power Production and Supply	6,719	1.38	16	1.02	33	1.62
Manufacture of Electric Machinery and Apparatus	28,972	5.94	122	7.74	144	7.07
Manufacture of Textile Wearing and Apparel	21,271	4.36	51	3.24	74	3.63
Manufacture of Textiles	38,945	7.98	110	6.98	133	6.53
Mining and Processing of Nonmetal Ores	4,900	1.00	8	0.51	9	0.44
Manufacture of Non-metallic Mineral Products	34,710	7.11	73	4.63	130	6.38
Recycling and Disposal of Waste	1,363	0.28	1	0.06	2	0.10
Manufacture of Handicrafts and Others	8,588	1.76	33	2.09	43	2.11
Mining and Processing of Ferrous Metal Ores	5,390	1.10	2	0.13	4	0.20
Smelting and Pressing of Ferrous Metals	8,893	1.82	24	1.52	26	1.28
Manufacture of Chemical Fibers	2,374	0.49	7	0.44	9	0.44
Manufacture of Chemical Products	30,568	6.26	100	6.35	126	6.19
Computers, Communication and Electric Equipment	16,338	3.35	65	4.12	83	4.07
Manufacture of Furniture	6,114	1.25	21	1.33	25	1.23
Manufacture of Transport Equipment	20,878	4.28	71	4.51	91	4.47
Manufacture of Metal Products	29,039	5.95	108	6.85	152	7.46
Manufacture of Beverage	5,824	1.19	29	1.84	38	1.87
Coal Mining and Washing	12,266	2.51	6	0.38	10	0.49
Processing of Wood Products	11,469	2.35	24	1.52	33	1.62
Processing of Agricultural and Related Products	25,501	5.23	78	4.95	103	5.06
Manufacture of Leather, Fur, Feather, and Footwear	9,932	2.04	30	1.90	35	1.72
Mining of other Ores	46	0.01	0	0.00	0	0.00
Production and Supply of Gas	1,024	0.21	1	0.06	1	0.05
Extraction of Petroleum and Natural Gas	322	0.07	0	0.00	0	0.00
Processing of Petroleum and Nuclear Fuel	2,667	0.55	7	0.44	7	0.34
Manufacture of Foods	8,723	1.79	44	2.79	50	2.45
Production and Supply of Water	2,326	0.48	15	0.95	16	0.79
Manufacture of Plastics	22,984	4.71	78	4.95	95	4.66
Manufacture of General-purpose Machinery	42,879	8.79	129	8.19	156	7.66
Manufacture of Cultural and Sports Products	5,310	1.09	18	1.14	20	0.98
Manufacture of Rubber Products	5,277	1.08	23	1.46	27	1.33
Manufacture of Tobacco	163	0.03	0	0.00	0	0.00
Manufacture of Medicines	6,801	1.39	56	3.55	62	3.04
Manufacture of Measuring Instruments	6,474	1.33	32	2.03	37	1.82
Printing, Reproduction of Recording Media	7,681	1.57	37	2.35	55	2.70
Mining and Processing of Non-ferrous Metal	2,885	0.59	5	0.32	7	0.34
Smelting and Pressing of Non-ferrous Metals	9,175	1.88	22	1.40	32	1.57
Manufacture of Paper and Paper Products	11,389	2.33	45	2.86	56	2.75
Manufacture of Special-purpose Machinery	21,837	4.47	85	5.39	113	5.55
Total	488,017	100	1,576	100	2,037	100

Table A3.2 Regional Distribution

	Population		1,576 Firms From Q2 Survey		Final Q3 Response Sample	
	Number of Firms	Percent	Number of Firms	Percent	Number of Firms	Percent
Anhui	13,600	2.79	53	3.36	74	3.63
Beijing	7,911	1.62	26	1.65	46	2.26
Fujian	19,528	4.00	64	4.06	84	4.12
Gansu	2,113	0.43	4	0.25	7	0.34
Guangdong	59,050	12.1	205	13.01	266	13.06
Guangxi	5,699	1.17	28	1.78	33	1.62
Guizhou	3,497	0.72	7	0.44	7	0.34
Hainan	657	0.13	1	0.06	1	0.05
Hebei	17,731	3.63	67	4.25	75	3.68
Henan	19,395	3.97	45	2.86	66	3.24
Heilongjiang	4,919	1.01	22	1.40	27	1.33
Hubei	13,058	2.68	35	2.22	48	2.36
Hunan	12,378	2.54	28	1.78	38	1.87
Jilin	5,328	1.09	17	1.08	20	0.98
Jiangsu	80,695	16.54	220	13.96	306	15.02
Jiangxi	10,145	2.08	22	1.40	38	1.87
Liaoning	22,335	4.58	84	5.33	97	4.76
Inner Mongolia	5,268	1.08	11	0.70	14	0.69
Ningxia	1,288	0.26	2	0.13	4	0.20
Qinghai	519	0.11	0	0.00	0	0.00
Shandong	43,369	8.89	156	9.90	193	9.47
Shanxi	7,128	1.46	17	1.08	24	1.18
Shaanxi	4,398	0.9	20	1.27	22	1.08
Shanghai	20,253	4.15	78	4.95	97	4.76
Sichuan	14,795	3.03	35	2.22	50	2.45
Tianjin	7,901	1.62	42	2.66	51	2.50
Tibet	112	0.02	0	0.00	0	0.00
Xinjiang	2,126	0.44	4	0.25	5	0.25
Yunnan	5,291	1.08	15	0.95	23	1.13
Zhejiang	69,935	14.33	243	15.42	292	14.33
Chongqing	7,595	1.56	25	1.59	29	1.42
Total	488,017	100	1,576	100	2,037	100

Table A3.3 Comparison of Company Characteristics

	Population		1,576 Firms From Q2 Survey		Final Q3 Response Sample	
	Mean	Median	Mean	Median	Mean	Median
Assets	90,050	12,920	97,107	17,654	96,522	17,203
Sales	104,697	20,072	105,992	24,211	115,355	23,308
Employment	182	70	193	80	198	80
Sales Per Capita	687	310	538	303	583	291
Total	488,017	100	1,576	100	2,037	100