

**China's Industrial Economy:  
Report from 2015 Q1 Survey<sup>1</sup>**

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<sup>1</sup> This survey is implemented by Beijing Allinfo Co., based on the questionnaire and sample provided by Professor Jie Gan, 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 Zhou Yi, who provided support to the data analysis and presentation.

## Executive Summary

After a year of contraction in 2014, China's industrial economy stabilized in Q1 2015. The Business Sentiment Index stood at 50, right at the turning point between expansion and contraction. While operating conditions are improving, fixed investments remain sluggish, with only 11% of firms making investments in Q1. Meanwhile, production, employment and price levels all largely stayed flat.

We do not believe there will be a hard landing for three reasons. First, the operating conditions for firms have been improving over the last few quarters. The percent of firms reporting difficult operating conditions has declined each quarter, from 19% in 2014 Q2 to 4% in Q1 this year. Second, while the problem of oversupply is still widespread and poses the largest challenge for the economy, it has stabilized and its severity has reduced. Finally, it remains the case that financing is not a bottleneck for growth.

On the other hand, the challenges facing the Chinese economy are structural and fundamental. Overcapacity is still a prominent problem, with 39% of firms reporting supply exceeding demand for their products. While firms with severe overcapacity have been forced to make significant adjustments, by reducing production or closing down, the speed at which the remaining overcapacity is absorbed has been reduced. Moreover, cost increases, the second challenge facing the economy, became a prominent issue again in 2015 Q1, after stabilizing in 2014 Q4, particularly for firms with good investment opportunities and increased employment. Thus, a quick recovery is not likely.

The government should formulate long term policies to increase domestic demand and to promote industry upgrades and technological innovation. Finally, easing monetary policy would not boost the industrial economy, but would only sustain the excess capacity and thus hurt the industrial sector in the long run.

## Introduction

Starting from 2014 Q2, we embarked on a quarterly, large-sample survey of about 2,000 industrial firms in China. We have now conducted four surveys. Our survey design ensures that our sample fully represents industry, region (provinces) and company sizes. As a result, we are able to construct business indices that are, to the best of our knowledge, the most informative ones available on the Chinese economy. Furthermore, our survey questions allow us to understand the underlying mechanisms, and analyze why the economy is doing well or not.

There were a total of 1,999 firms in our 2015 Q1 survey, of which 1,497 firms were also questioned in our 2014 Q4 survey. The initial survey sample was based on a stratified random sampling by industry, region and size from the National Bureau of Statistics' population of 488,000 industrial firms that have sales of more than five million RMB. Appendix A details the sampling procedure and compares our sample with the NBS population. Our sample represents the population well in terms of industry, region, size and other company characteristics.

### I. China's Industrial Economy Back at a Crossroad

After a difficult year in 2014, the industrial economy stabilized in the first quarter of 2015. Our Business Sentiment Index (BSI) stood at 50, right at the turning point between expansion and contraction. Our BSI is the simple average of three diffusion indices, including current operating conditions, expected change in operating conditions, and investment timing.<sup>1, 2</sup> The index construction resembles that of the US Consumer Sentiment Index, hence its name. It not only contains information on current operating conditions, but also includes measures that are forward-looking and reflects the absolute level of economic activities.<sup>3</sup>

As shown in Figure 1, there are significant variations among the three sub indicators that constitute the BSI. On current operating conditions, 26.6% of the firms replied "good", 69.6% replied "medium" and 3.8% replied "bad". The diffusion index was 61, which was well above 50, the turning point. The vast majority of firms expect the operating conditions to be similar in the next quarter, resulting in a diffusion index

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<sup>1</sup> Specifically, the three questions underlying our Business Sentiment Index are: 1. Rate current operating conditions – "good", "medium" or "difficult"; 2. How do you expect operating conditions to change during the next quarter – "up", "same" or "down"; 3. To what extent is it now a good time to invest – "good", "medium" or "bad."

<sup>2</sup> The diffusion index is based on answers to multiple-choice questions, with the choices in analog to "good", "medium", "bad" or "up", "same", "down". The diffusion index is computed as % of firms answering "good" + 0.5 \* % of firms answering "medium". The diffusion index ranges between 0 and 100. A larger value indicates better operating conditions and 50 is the turning point from expansion to contraction.

<sup>3</sup> 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.

of 53. The weakest indicator was investment sentiment. When asked to what extent it is now a good time to make fixed investments, only 6% considered the timing to be “good” and 34% responded “bad,” yielding a diffusion index of 36, far below the turning point of 50 (Figure 1 and 2). Consistent with weak investment sentiment, only 11% of firms made fixed investments in Q1. The vast majority of firms invested less than 3% of their assets – a level that roughly covers depreciation, which leaves only 2% of firms in a true expansion mode.

In terms of trends, the firms’ operating conditions have improved consistently over the past four quarters. The diffusion index increased from 55 in Q2 last year to 61 in Q1. This is largely due to the fact that the number of firms reporting difficult operating conditions has declined consistently, from 19% in 2014 Q2 to 4% in 2015 Q1. However, fixed investments, especially expansionary investments (i.e. investing more than 3% of assets), have declined consistently, from 7% in 2014 Q3 to 2% in Q1.

As shown in Figure 3, consistent with sluggish investment, inventory levels were largely stable with a slight decline, with the diffusion indices within a tight range between 47 and 50 over the last four quarters. Production and employment also stayed quite flat and the diffusion indices stood between 49 and 54.

Table 1 shows the performance of different types of firms. As in the whole of 2014, the most significant variation was in ownerships, with state-owned enterprises outperforming both collectively-owned enterprises and private-sector firms. It is worth noting that capital goods and intermediate goods, the weakest performers in the previous quarters, are now performing similarly to other types of products. This possibly reflects the fact that the economy is recovering and the demand for these types of goods is improving.

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. Variation across industries was substantial, with the BSI ranging from 7 to 75. The top five industries included Water Production & Supply (with a BSI of 75), Medicines (69), Measuring Instruments (66), Power Production & Supply (65) and Cultural & Sports Products (62). The bottom five were Coal Mining (7), Petroleum (33), Fur Related Products (34), Agricultural and Related Products (37) and Textiles (38). Coal Mining has been on the worst-performing list since Q2, while Petroleum entered the list in 2014 Q4. Table 2.2.1 further illustrates that the best performing industries were concentrated on the production of nondurable consumption goods. Among the bottom five industries, firms were mostly in the production of intermediate goods.

Table 3 displays regional business conditions. Regional variations were not as large as across industries, with the BSI ranging from 44 to 54. The best and worst

provinces were geographically dispersed (Table 3.2). The top five all had a BSI above 50 – Heilongjiang (54), Tianjin (54), Hunan (53), Sichuan (53) and Hubei (53). The bottom five comprised of Gansu (44), Guizhou (46), Shandong (48), Anhui (48) and Hebei (48).<sup>4</sup> Among these provinces, Guizhou has been on the list since 2014 Q3.

Table 3.2.1 illustrates that, within these provinces, there is significant variation across industries. The most troublesome are the mining industries in Guizhou and Shandong (17) and light manufacturing in Gansu (33). Among these, light manufacturing in Gansu also appeared on the list in 2014 Q4.

## **II. Understanding the Economy: Challenges and Priorities**

We asked firms about the factors constraining production in the next quarter (Figure 4). Weak demand is still by far the biggest challenge for next quarter, with 52% of the firms citing a lack of orders as their most constraining factor. Costs rank second, with labor and raw material costs listed by 16% and 12% of firms, respectively. Financing is not a bottleneck, with only 2% replying that financing is a limiting factor. These factors are highly consistent with findings in all four of our previous surveys.

### **II.1 The Biggest Challenge: Weak Demand**

In 2015 Q1, 39% of firms reported that supply exceeded demand for their products in domestic markets. Firms are faring worse in domestic markets than in overseas ones. The diffusion index reflecting weak demand was 69 in Q1 (Figure 5A and Table 4.1). Among the surveyed firms, about 47% export their products to international markets. The diffusion index for international markets was 59, which was ten points below the domestic market, continuing a pattern found in the previous three quarters.

Although weak demand is still a prominent problem, due to a span of reduced investment, the severity of excess capacity has actually decreased over time (Figure 5B). In 2014 Q2, as many as 45% of firms reported supply exceeding demand. That number had dropped to 37% by 2014 Q4 and 39% by 2015 Q1. The number of firms reporting excess capacity of more than 10% has continuously declined in the past year, from 15% in 2014 Q2 down to 6% in 2015 Q1. Firms reporting excess capacity of more than 20% have declined from 8% to 2%.

We categorize an industry as having severe excess capacity if more than 10% of the firms reported excess capacity of more than 20%. The number of industries and

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<sup>4</sup> Here we restrict our attention to provinces with at least four firms.

regions with severe excess capacity has also been gradually decreasing. The number of industries dropped from 11 in 2014 Q2 to 1 in 2015 Q1 (out of 35 industries). The number of regions dropped from 10 in 2014 Q2 to 2 in 2015 Q1 (out of 31 regions).

Overall, it is quite clear that firms with severe excess capacity have been forced to make significant adjustments, either to reduce production or to close down. The remaining excess capacity, however, has been absorbed at a slower rate. Absorbing this part of the excess capacity is the most important challenge that the industrial economy is facing in the coming a few years.

As of 2015 Q1, the only industry with severe overcapacity was Coal Mining (See Table 1.1 in the Appendix for excess capacity in all industries). Coal Mining has been on the list since 2014 Q2. Using the same criteria, two provinces, Guizhou and Shanxi, exhibited severe excess capacity.

Weak demand has not caused inventory problems, both because firms have responded by scaling down production and because of the “order-based” production model adopted by many Chinese firms. As shown earlier, finished-goods inventory stayed largely flat with a slight decline. As many as 43% of firms said they did not have significant levels of inventory because they produce only after taking orders. For those with inventories, the majority (78%) said they expected the inventory to be digested within three months, with a further 16% saying between three to six months. This leaves only 3% of the whole sample carrying inventory for more than six months.

## **II.2 The Second Challenge: Costs and Margins**

Cost rises, especially increased labor costs, are the second biggest challenge facing the industrial economy. Cost increases were severe in Q2 and Q3 last year, but stabilized in 2014 Q4. In Q1 this year, however, costs became a prominent issue again: the percent of firms reporting rising unit costs increased significantly, from 12% in 2014 Q4 to 27% in 2015 Q1; and the diffusion index reflecting cost increases was 62 in 2015 Q1, up from 53 in 2014 Q4 (Figure 6A).

Given excess capacity, firms are not likely to have strong pricing power. Indeed, price levels in the past four quarters stayed largely flat, with the diffusion indices staying within a range of 48 to 51 (Figure 3). This means that cost increases would be translated into squeezed profit margins. Right now, those cost increases are particularly prominent in firms with good investment opportunities and increased employment (Figure 6B). Therefore, as the economy recovers, we should closely watch the costs.

Tables 5.2 and 5.3 report industries and provinces with significant cost increases.

Cost indices for all regions and industries are listed in Appendices 2.1 and 2.2. Notably, the regions with the most cost increases are not developed coastal areas, but have spread to inland provinces.

## **II. 3 Financing is Not a Bottleneck**

Table 6.2 and Figure 7 provide an overview of how Chinese firms have been financed. Internally-generated funds were, by far, the most important source of financing, with 96% of the firms reporting this as their primary funding source. About 3% of firms report the founder's own capital as the primary source of funds. Sources of financing are highly concentrated in Chinese firms: in the case of internal funds, 61% of firms reported that this largest financing source accounts for more than 50% of their total funds.

In the past four quarters, and consistent with increasingly sluggish investment, a small and declining proportion of firms obtained new loans, from 24% in 2014 Q2 down to 4% in Q4, and it went up slightly to 7% in the first quarter of this year. SOEs were disproportionately more likely to obtain new loans (11% vs. 7% for non-SOEs).

Among the firms with new loans, the banks' lending attitude was found to be generally accommodating, with only 8% reporting a "difficult" lending attitude. Among the firms without new loans, the vast majority (93%) reported that they did not have the need for capital. These results are highly consistent with the findings of the past few quarters, that is, financing is not a bottleneck at the moment.

Most of the loans (71%) were collateralized, with typical sources of collateral being land and plants (used by 78% of firms) and machinery and equipment (used by 22% of firms). The cost of borrowing mostly stayed the same, with a diffusion index of 50.

It was rare in 2015 Q1 for firms to borrow from sources other than banks, consistent with anecdotal evidence that the low profit margins of industrial firms do not allow them to borrow from expensive, informal lending agencies. Only eight or 0.4% of firms reported borrowing from other financing institutions in Q1.

While our finding that financing is not a bottleneck may contrast with conventional wisdom, it is consistent with the central bank's "Financial Institutions Lending Statistics" report. In 2014, the total amount of new loans to industrial firms declined by an average of 31% each quarter, dropping from 200.9 billion in Q1 to 64.2 billion in Q4. The central bank's report points to a lack of demand for loans as the main reason for the decline. Moreover, in its "Survey of Bankers", the index of loan demand dropped from 78.2% in 2014 Q1 to 64.9% in 2014 Q4, which was the lowest since the index began in 2004. In Q1 this year, the total amount of new industrial loans increased significantly to 168.4 billion. The loan demand index was

68.8%. This is a slight increase, and somewhat inconsistent with the large increase in actual new loans, which seems to reflect loosened monetary policy, rather than an increased need for financing from the industrial sector.

Overall, the fact that financing is not a bottleneck must be viewed against the backdrop of an industrial economy in slight contraction. Investment opportunity is scarce; as long as a firm is profitable, retained earnings are sufficient for operation. Even if some loans are needed, the firms have fixed assets as collateral for borrowing. As weak demand is the key problem, injecting liquidity through loosening monetary policy cannot revive the industrial economy. Finally, it should be stressed that, although financing is not a main constraining factor, financial reform is still important. If the financial system cannot allocate resources in an efficient manner, then financing would likely become a bottleneck when the economy recovers.

#### **IV. Conclusion**

After a difficult year in 2014, the industrial economy stabilized in 2015 Q1. We believe that the industrial economy is not likely to have a hard landing for three reasons. First, the operating conditions of firms have been improving over the past four quarters: the number of firms reporting difficult operating conditions has declined persistently, from 19% in 2014 Q2 to 4% in 2015 Q1; and the diffusion index increased from 55 in Q2 last year to 61 in Q1 this year. Second, the largest challenge facing the economy - overcapacity - has stabilized since Q4 last year. Finally, financing is not a bottleneck for industrial growth.

On the other hand, the challenges facing the Chinese economy are structural and fundamental. Overcapacity is still a prominent problem, with 39% of firms reporting supply exceeding demand for their products. While firms with severe overcapacity have been forced to make significant adjustments, by reducing production or closing down, the speed at which the remaining overcapacity is absorbed has been reduced. Moreover, cost increases, the second challenge facing the economy, became a prominent issue again in 2015 Q1, after stabilizing in 2014 Q4, particularly for firms with good investment opportunities and increased employment. Therefore, there is no quick fix and a quick recovery is not likely.

The government should formulate long term policies along two dimensions. The first is to strengthen the policy of increasing domestic demand, which involves raising income and reducing household savings through public services. The other approach to dealing with weak demand and increased costs is industry upgrades and technological innovation. Finally, easing monetary policy would not boost the industrial economy, but would only sustain excess capacity and thus hurt the industrial sector in the long run.



Figure 1. Business Sentiment Index (2014 Q2-2015 Q1)

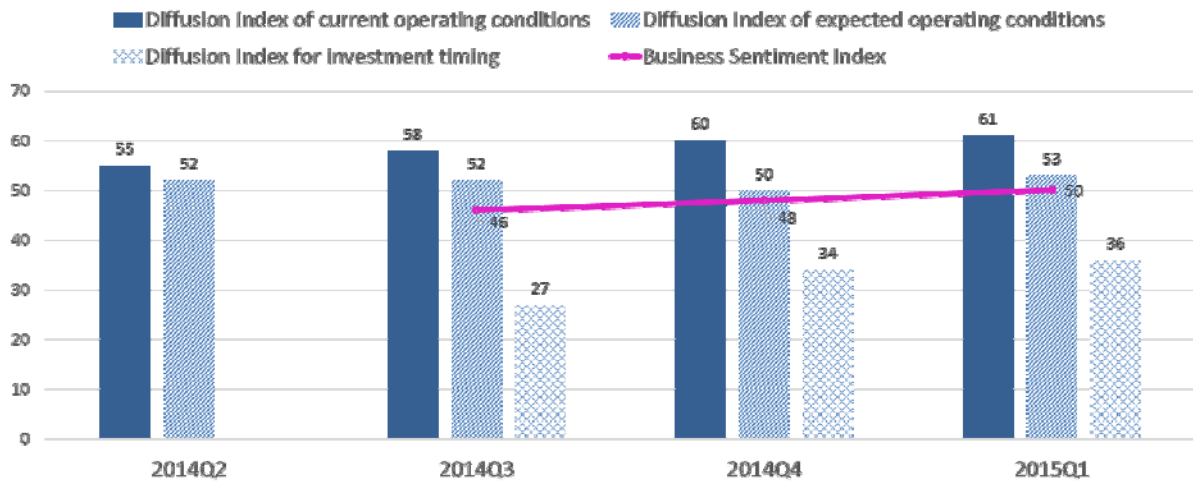
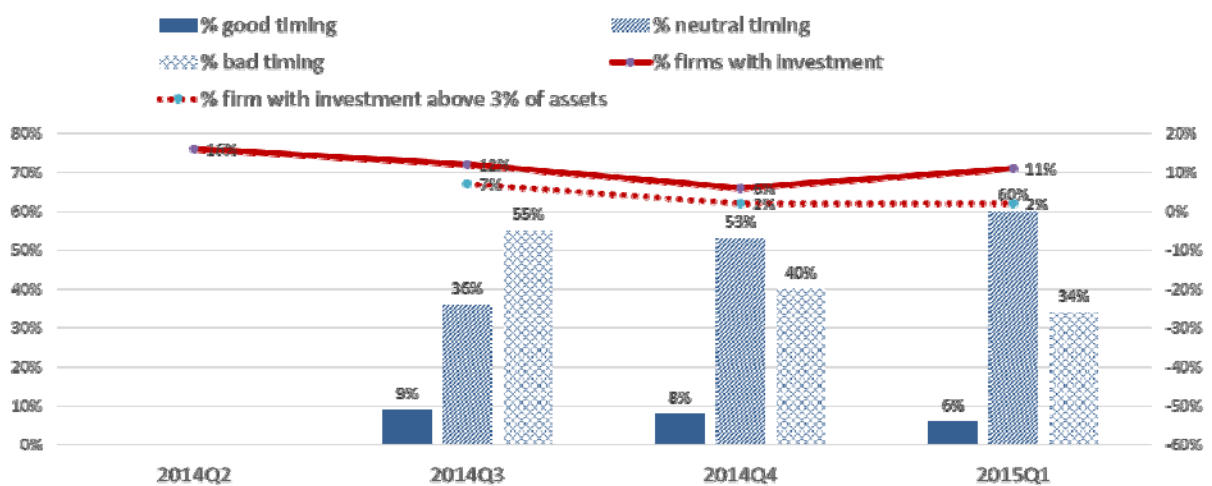


Figure 2. Investment



**Figure 3. Other Main Economic Indices**



**Figure 4. Factors Constraining Production**

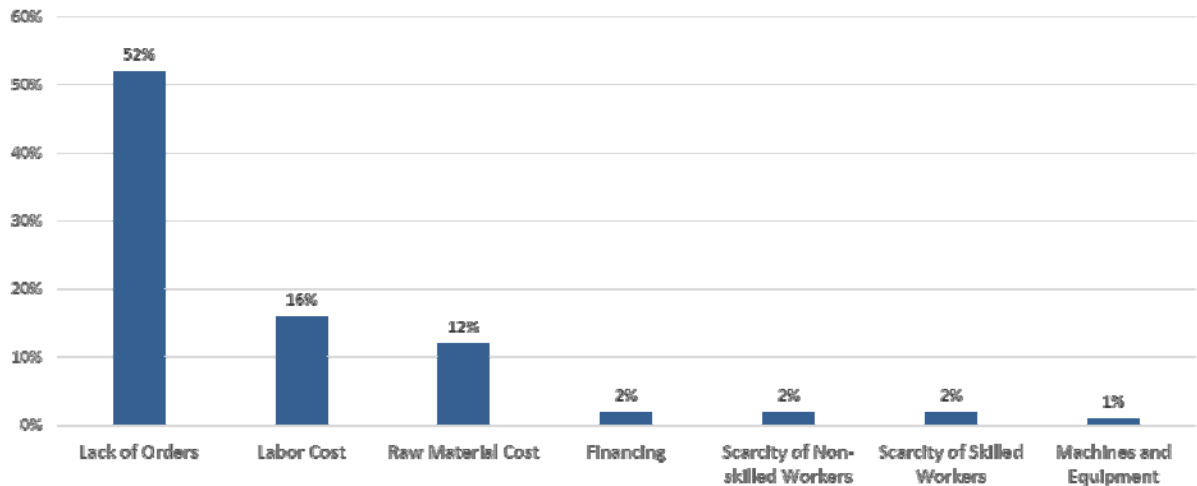
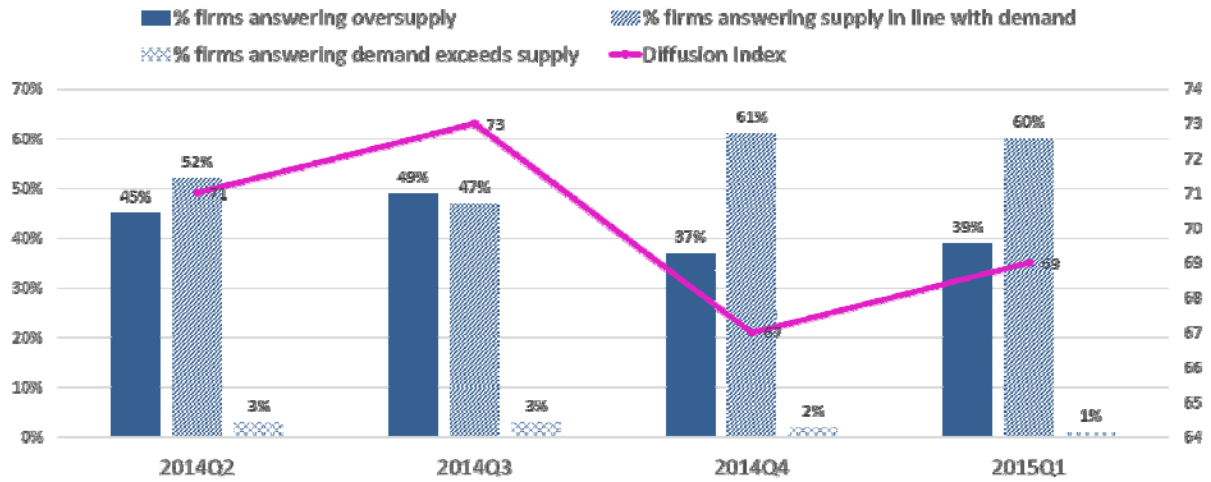
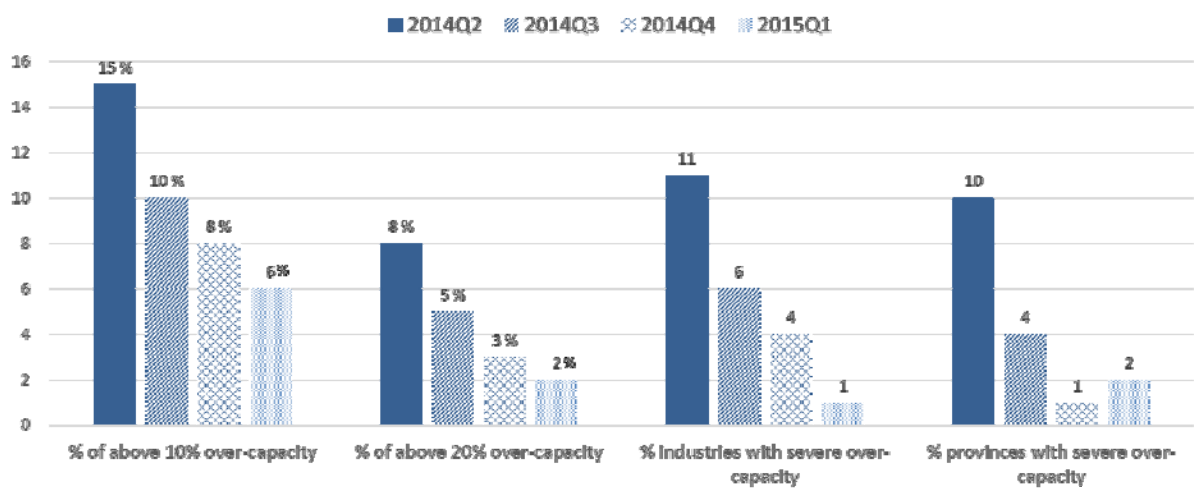


Figure 5

A. Excess Capacity in Domestic Market

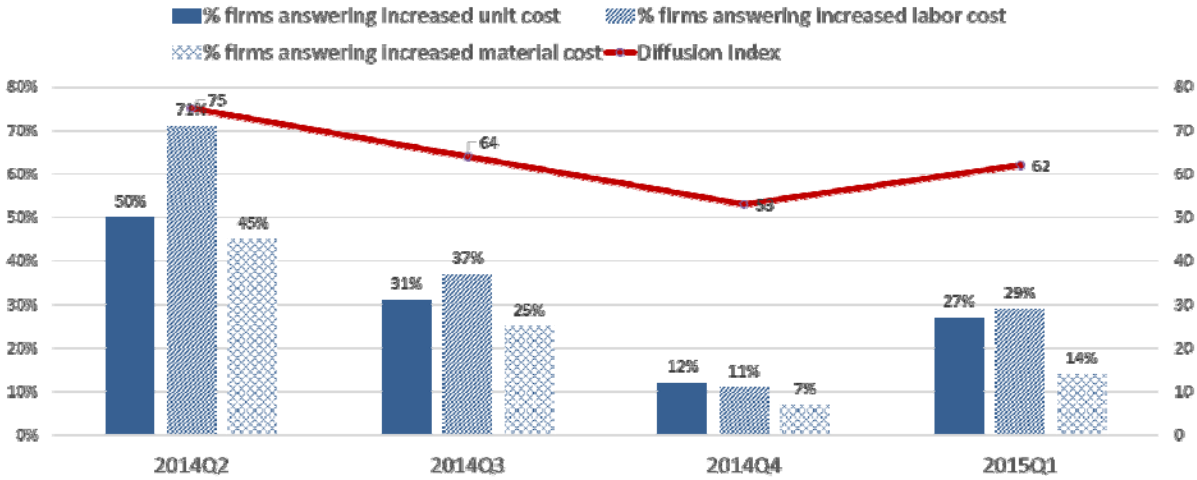


B. Firms with Severe Excess Capacity



**Figure 6. Production Costs**

**A. Cost Increases**



**B. Cost Increases for Firms with Investment Opportunities or Increased Employment**

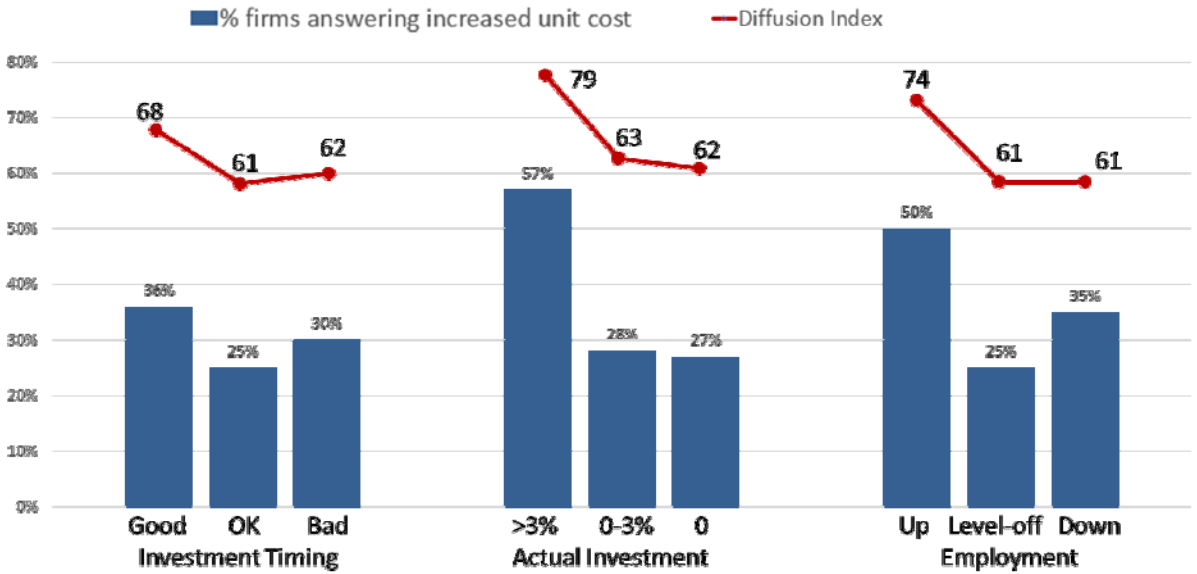
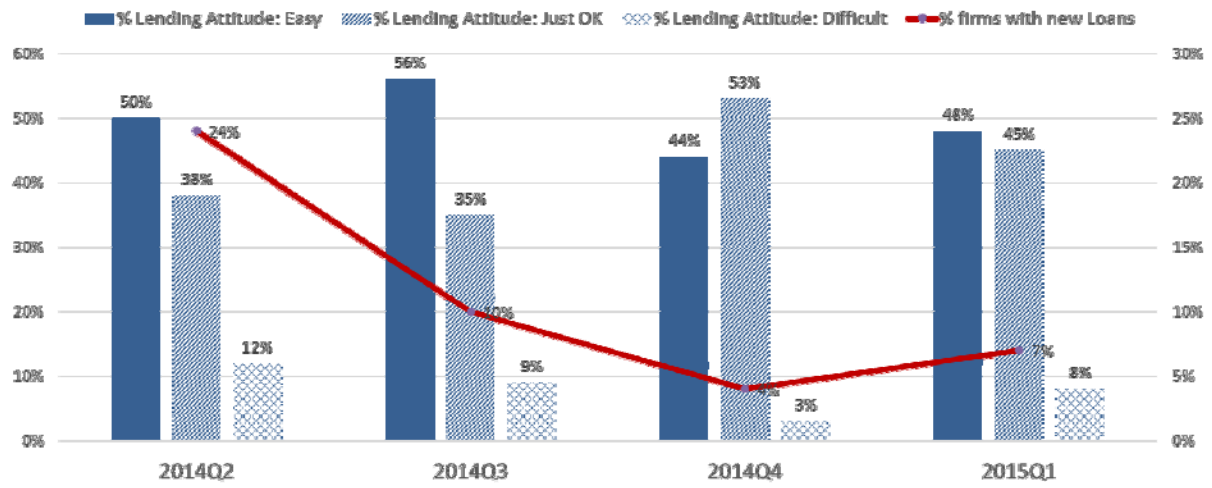


Figure 7. Financing



**Table1. Operating Conditions of Industrial Firms**

	Number of Firms	Business Sentiment Index		Diffusion Index - Operating Conditions		Diffusion Index - Expected Change in Operating Conditions		Diffusion Index - Good Time for Investment		% of Firms with Fixed Investment		Diffusion Index - Production		Diffusion Index - Employment		
		Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4	
<i>By Size</i>																
Nation	1999	50	48	61	60	53	50	36	34	11	6	51	54	50	49	
Large	717	52	49	65	63	53	50	38	36	14	7	52	54	49	49	
Medium	656	50	48	60	59	53	50	37	33	11	5	51	54	50	49	
Small	626	49	47	59	58	53	50	35	33	9	5	50	52	50	50	
<i>By Ownership</i>																
State controlling	72	58	55	72	72	58	51	43	43	11	2	48	53	50	50	
State holding	8	67	70	88	82	56	50	56	77	13	9	63	64	63	55	
Collectively-owned	26	45	43	54	50	46	50	35	29	15	6	38	48	44	48	
Private	1578	49	47	60	59	53	50	36	33	11	6	51	53	49	49	
Foreign-owned	315	52	50	66	63	51	51	39	36	12	7	55	57	51	49	
<i>By Product Type</i>																
Consumer Goods - Durable	492	50	49	63	62	53	51	36	32	10	5	52	53	51	50	
Consumer Goods - Nondurable	568	50	49	63	63	54	50	32	34	11	5	49	61	49	50	
Capital Goods	166	51	46	61	55	54	50	38	32	19	8	51	52	49	50	
Intermediate Goods	773	50	47	59	58	52	49	39	35	10	6	52	49	49	48	

## 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 DI's for Operating Conditions, Expected Operating Conditions and Good Time 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		% of Firms with Fixed Investment	
		Q1	Q4	Q1	Q4	Q1	Q4
Nation	1999	50	48	61	60	11	6
<i>Mining</i>							
Coal Mining and Washing	5	7	21	20	25	0	0
Mining and Processing of Ferrous Metal Ores	1	83	0	100	0	0	0
Mining and Processing of Non-ferrous Metal	4	54	45	75	57	25	29
Mining and Processing of Nonmetal Ores	6	50	43	50	39	0	0
<i>Production and Supply of Electricity, Heat, Gas and Water</i>							
Power Production and Supply	26	65	64	88	86	0	3
Production and Supply of Water	14	75	64	89	92	0	0
<i>Light Manufacturing</i>							
Processing of Agricultural and Related Products	102	37	40	53	54	9	2
Manufacture of Foods	49	48	45	72	69	18	2
Manufacture of Beverage	42	48	46	67	66	5	0
Manufacture of Textiles	119	38	38	55	55	4	10
Manufacture of Textile Wearing and Apparel	79	52	40	61	56	11	13
Manufacture of Leather, Fur, Feather, Related Products and Footwear	39	34	41	58	60	5	3
Processing of Wood Products	41	38	35	52	52	15	0
Manufacture of Furniture	28	56	59	66	74	4	14
Manufacture of Paper and Paper Products	54	51	51	59	59	19	0
Printing, Reproduction of Recording Media	39	57	60	65	67	33	3
Manufacture of Cultural and Sports Products	26	62	64	69	73	27	14
Manufacture of Medicines	65	69	68	77	77	28	19
Manufacture of Handicrafts and Others	42	51	49	56	58	0	11
Recycling and Disposal of Waste	2	50	38	50	31	0	0
<i>Chemical Industry</i>							
Processing of Petroleum and Nuclear Fuel	13	33	35	54	55	8	0
Manufacture of Chemical Products	125	53	51	56	56	8	6
Manufacture of Chemical Fibers	6	39	48	33	57	0	14
Manufacture of Rubber Products	31	61	59	63	63	16	3
Manufacture of Plastics	92	50	46	68	63	9	3
<i>Equipment Manufacturing</i>							
Manufacture of General-purpose Machinery	198	56	49	64	61	13	7
Manufacture of Special-purpose Machinery	123	48	47	61	58	15	2
Manufacture of Transport Equipment	76	51	51	53	58	5	14
Manufacture of Electric Machinery and Apparatus	143	48	46	63	65	23	7
Computers, Communication and Electric Equipment	73	56	51	68	61	12	10
Manufacture of Measuring Instruments	34	66	58	75	58	0	0
<i>Other Heavy Manufacturing</i>							
Manufacture of Non-metallic Mineral Products	122	49	46	59	56	1	0
Smelting and Pressing of Ferrous Metals	30	44	35	47	39	0	0
Smelting and Pressing of Non-ferrous Metals	24	49	51	60	60	33	0
Manufacture of Metal Products	126	49	44	55	53	6	4

**Table 2.2 Industry Ranking of Operating Conditions**

	Number of Firms	Business Sentiment Index		Diffusion Index - Operating Conditions		% of Firms with Fixed Investment	
		Q1	Q4	Q1	Q4	Q1	Q4
Nation	1999	50	48	61	60	11	6
<i>Top Five</i>							
Production and Supply of Water	14	75	64	89	92	0	0
Manufacture of Medicines	65	69	68	77	77	28	19
Manufacture of Measuring Instruments	34	66	58	75	58	0	0
Power Production and Supply	26	65	64	88	86	0	3
Manufacture of Cultural and Sports Products	26	62	64	69	73	27	14
<i>Bottom Five</i>							
Coal Mining and Washing	5	7	21	20	25	0	0
Processing of Petroleum and Nuclear Fuel	13	33	35	54	55	8	0
Manufacture of Fur Related Products	39	34	41	58	60	5	3
Processing of Agricultural and Related Products	102	37	40	53	54	9	2
Manufacture of Textiles	119	38	38	55	55	4	10

Notes:

1. Ranking includes industries with more than five firms.



**Table 2.2.1 Diffusion Index of Top Five and Bottom Five Industries: by Product Type**

	Consumer Goods - Durable				Consumer Goods - Nondurable			
	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment
<i>Top Five</i>								
Production and Supply of Water	3	78	100	0	11	74	86	0
Manufacture of Medicines	0	n.a.	n.a.	n.a.	59	68	75	25
Manufacture of Measuring Instruments	8	63	69	0	2	75	100	0
Power Production and Supply	0	n.a.	n.a.	n.a.	25	65	88	0
Manufacture of Cultural and Sports Products	7	64	71	29	11	62	64	18
<i>Average</i>		68	80	10		69	83	9
<i>Bottom Five</i>								
Coal Mining and Washing	0	n.a.	n.a.	n.a.	0	n.a.	n.a.	n.a.
Processing of Petroleum and Nuclear Fuel	0	n.a.	n.a.	n.a.	11	33	55	9
Manufacture of Fur Related Products	26	33	56	4	11	36	64	9
Products	0	n.a.	n.a.	n.a.	101	37	53	9
Manufacture of Textiles	12	36	63	25	44	38	52	0
<i>Average</i>		35	60	15		36	56	7
	Capital Goods				Intermediate Goods			
	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment
<i>Top Five</i>								
Production and Supply of Water	0	n.a.	n.a.	n.a.	0	n.a.	n.a.	n.a.
Manufacture of Medicines	0	n.a.	n.a.	n.a.	6	83	92	50
Manufacture of Measuring Instruments	3	83	100	0	21	63	71	0
Power Production and Supply	0	n.a.	n.a.	n.a.	1	67	100	0
Manufacture of Cultural and Sports Products	1	50	50	0	7	60	79	43
<i>Average</i>		67	75	0		68	86	23
<i>Bottom Five</i>								
Coal Mining and Washing	0	n.a.	n.a.	n.a.	5	7	20	0
Processing of Petroleum and Nuclear Fuel	0	n.a.	n.a.	n.a.	2	33	50	0
Manufacture of Fur Related Products	0	n.a.	n.a.	n.a.	2	42	50	0
Processing of Agricultural and Related Products	0	n.a.	n.a.	n.a.	1	33	50	0
Manufacture of Textiles	0	n.a.	n.a.	n.a.	63	38	55	3
<i>Average</i>		n.a.	n.a.	n.a.		31	45	1

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

		Number of Firms	Business Sentiment Index		Diffusion Index - Operating Conditions		% of Firms with Fixed Investment	
			Q1	Q4	Q1	Q4	Q1	Q4
	Nation	1999	50	48	61	60	11	6
<i>North China</i>	Beijing	35	52	52	61	66	6	3
	Hebei	81	48	48	59	60	12	5
	Tianjin	45	54	50	63	61	16	9
<i>Northeast</i>	Heilongjiang	23	54	53	72	71	13	5
	Jilin	21	52	55	62	73	10	5
	Liaoning	81	52	46	62	56	10	1
<i>Northwest</i>	Gansu	9	44	42	61	50	11	13
	Inner Mongolia	11	50	50	59	64	0	7
	Ningxia	1	33	58	50	75	0	0
	Qinghai	0	n.a.	50	n.a.	50	n.a.	0
	Shaanxi	20	50	51	63	63	5	10
	Xinjiang	3	44	25	67	50	0	0
<i>Central North</i>	Henan	70	50	46	55	53	16	3
	Shandong	180	48	47	59	58	10	5
	Shanxi	18	50	49	58	60	17	5
<i>Southwest</i>	Guizhou	8	46	43	69	60	25	0
	Sichuan	59	53	49	68	61	8	4
	Yunnan	17	48	48	62	55	18	9
	Chongqing	37	52	52	65	65	14	3
<i>East China</i>	Jiangsu	312	50	47	61	58	9	6
	Shanghai	95	51	50	65	63	11	9
	Zhejiang	311	49	48	61	61	14	6
<i>South China</i>	Fujian	99	49	51	60	65	6	7
	Guangdong	261	52	48	63	61	12	7
	Guangxi	27	51	48	61	62	7	3
	Hainan	1	83	83	100	100	100	100
<i>Central South</i>	Anhui	59	48	46	58	56	15	7
	Hubei	48	53	49	61	61	10	8
	Hunan	35	53	53	67	68	14	3
	Jiangxi	32	51	49	58	60	3	0

**Table 3.2 Regional Ranking of Operating Conditions**

	Number of Firms	Business Sentiment Index		Diffusion Index - Operating Conditions		% of Firms with Fixed Investment	
		Q1	Q4	Q1	Q4	Q1	Q4
Nation	1999	50	48	61	60	11	6
<i>Top Five</i>							
Heilongjiang	23	54	53	72	71	13	5
Tianjin	45	54	50	63	61	16	9
Hunan	35	53	53	67	68	14	3
Sichuan	59	53	49	68	61	8	4
Hubei	48	53	49	61	61	10	8
<i>Bottom Five</i>							
Gansu	9	44	42	61	50	11	13
Guizhou	8	46	43	69	60	25	0
Shandong	180	48	47	59	58	10	5
Anhui	59	48	46	58	56	15	7
Hebei	81	48	48	59	60	12	5

Notes:

1. Ranking includes regions with more than 5 firms.

**Table 3.2.1 Diffusion Index of Top Five and Bottom Five Regions: by Broad Industry**

	Production and Supply of Electricity, Heat, Gas and Water											
	Mining				Gas and Water				Light Manufacturing			
	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment
<i>Top Five</i>												
Heilongjiang	0	n.a.	n.a.	n.a.	1	67	100	0	10	55	80	10
Tianjin	0	n.a.	n.a.	n.a.	0	n.a.	n.a.	n.a.	10	45	50	20
Hunan	2	58	75	0	2	67	100	0	15	51	67	13
Sichuan	2	58	75	0	4	75	100	0	17	55	71	12
Hubei	1	50	50	0	2	75	100	0	18	49	61	11
<i>Average</i>		55	67	0		71	100	0		51	66	13
<i>Bottom Five</i>												
Gansu	0	n.a.	n.a.	n.a.	1	67	100	0	5	33	60	0
Guizhou	1	17	50	0	1	67	100	0	5	43	60	40
Shandong	1	17	50	0	4	63	88	0	73	44	60	15
Anhui	1	50	50	0	1	67	100	0	24	42	48	17
Hebei	0	n.a.	n.a.	n.a.	0	n.a.	n.a.	n.a.	29	44	60	3
<i>Average</i>		28	50	0		66	97	0		41	58	15

**Table 3.2.1 Diffusion Index of Top Five and Bottom Five Regions: by Broad Industry (Continued)**

	Chemical Industry				Equipment Manufacturing				Other Heavy Manufacturing			
	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment	Number of Firms	Business Sentiment Index	Diffusion Index - Operating Conditions	% of Firms with Fixed Investment
<i>Top Five</i>												
Heilongjiang	1	50	50	0	6	50	58	33	5	53	70	0
Tianjin	9	57	67	33	16	57	72	13	10	53	60	0
Hunan	4	50	75	0	8	52	63	25	4	58	50	25
Sichuan	6	56	58	17	17	49	65	6	13	47	62	8
Hubei	5	53	70	0	15	59	60	13	7	48	50	14
<i>Average</i>		53	64	10		53	64	18		52	58	9
<i>Bottom Five</i>												
Gansu	1	67	50	100	0	n.a.	n.a.	n.a.	2	50	50	0
Guizhou	1	67	100	0	0	n.a.	n.a.	n.a.	0	n.a.	n.a.	n.a.
Shandong	24	50	56	13	53	51	58	6	25	47	54	4
Anhui	9	50	61	11	17	52	65	24	7	50	64	0
Hebei	18	58	64	22	22	47	55	23	12	46	54	0
<i>Average</i>		58	66	29		50	59	18		48	56	1

**Table 4. Market Supply and Demand**

**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	
		Q1	Q4	Q1	Q4	Q1	Q4
<i>Nation</i>	1999	69	67	59	58	49	47
<i>By Size</i>							
Large	717	68	66	58	58	48	47
Medium	656	69	67	59	59	50	48
Small	626	69	68	60	59	49	48
<i>By Ownership</i>							
State controlling	72	63	57	54	56	53	48
State holding	8	56	64	50	67	40	50
Collectively-owned	26	67	69	50	50	50	45
Private	1578	70	69	60	59	49	48
Foreign -owned	315	60	61	57	57	48	47
<i>By Product Type</i>							
Consumer Goods - Durable	492	67	64	57	57	49	49
Consumer Goods - Nondurable	568	65	64	61	58	49	47
Capital Goods	166	61	62	54	56	48	49
Intermediate Goods	773	73	72	60	61	49	47

**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	100	100

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 five 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
Guizhou	8	13	13
Shanxi	18	11	17

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 five 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	
			Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4
<i>Nation</i>		1999	62	54	64	54	51	51	49	48
<i>By Size</i>										
	Large	717	62	55	63	55	53	50	50	47
	Medium	656	61	55	63	55	50	51	49	49
	Small	626	64	53	65	54	51	50	50	47
<i>By Ownership</i>										
	State controlling	72	60	50	56	54	51	46	47	48
	State holding	8	69	68	63	73	56	55	50	59
	Collectively-owned	26	56	52	58	50	52	48	44	45
	Private	1578	62	54	65	55	50	51	49	47
	Foreign -owned	315	62	55	61	54	56	52	51	49
<i>By Product Type</i>										
	Consumer Goods - Durable	492	63	54	65	54	53	52	50	50
	Consumer Goods - Nondurable	568	63	55	62	56	57	52	53	50
	Capital Goods	166	58	53	62	53	43	52	47	48
	Intermediate Goods	773	62	54	65	55	48	49	47	45



**Table 5.2 Industries 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	1999	62	64	51	49
Coal Mining and Washing	5	100	100	100	0
Manufacture of Textiles	119	84	82	55	49
Manufacture of Cultural and Sports Products	26	79	81	69	56
Production and Supply of Water	14	79	64	50	50
Manufacture of Rubber Products	31	77	77	65	44
Manufacture of Medicines	65	75	76	67	58
Manufacture of Textile Wearing and Apparel	79	73	73	65	53
Manufacture of Beverage	42	71	61	65	57
Manufacture of Measuring Instruments	34	71	71	63	51
Processing of Wood Products	41	68	55	66	56
Manufacture of General-purpose Machinery	198	68	80	29	44
Manufacture of Fur Related Products	39	64	55	64	62
Computers, Communication and Electric Equipment	73	64	78	50	51
Smelting and Pressing of Ferrous Metals	30	63	77	19	23
Manufacture of Non-metallic Mineral Products	122	63	66	52	51
Printing, Reproduction of Recording Media	39	63	60	59	50

Notes:

1. Industries are sorted by Diffusion Index for Unit Cost in descending order. The table includes industries with more than five 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	1999	62	64	51	49
Guizhou	8	69	69	71	57
Yunnan	17	68	68	59	47
Guangxi	27	67	63	60	58
Fujian	99	65	67	53	54
Shaanxi	20	65	58	58	48
Chongqing	37	65	65	50	47
Anhui	59	64	61	52	49
Zhejiang	311	64	66	50	49
Jiangsu	312	63	66	50	49
Beijing	35	63	61	61	51

Notes:

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

**Table 5.3 Cost with Investment and Employment**

		Number of Firms	Diffusion Indices		
			Unit Cost Index	Labor Cost Index	Raw Material Cost Index
<i>Investment Timing</i>	Nation	1999	62	64	51
	Positive	129	68	69	60
	Neutral	1199	61	64	50
	Negative	671	62	62	52
<i>Investment as Ratio of Asset</i>	>3%	49	79	74	64
	0-3%	175	63	63	49
	No Investment	1775	62	64	51
<i>Employment Change</i>	Up	125	74	78	56
	Level off	1730	61	63	51
	Down	144	61	63	55

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

	% Firms with New Loans		Collateralization Rate %		Diffusion Index - Lending Attitude		Diffusion Index - Interest Rate	
	Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4
Nation	7	4	71	70	70	70	50	47
Firms with Investment	20	12	71	68	78	71	51	46
Firms without Investment	6	4	71	70	67	70	49	47
<i>By Size</i>								
Large	9	6	71	69	67	72	48	44
Medium	7	4	71	69	73	69	50	48
Small	5	3	70	71	72	69	54	50
<i>By Ownership</i>								
State controlling	11	3	78	69	75	67	50	50
State holding	13	0	70	n.a.	100	n.a.	50	n.a.
Collectively-owned	4	0	70	n.a.	100	n.a.	50	n.a.
Private	8	5	70	70	69	70	50	47
Foreign -owned	4	3	71	67	75	75	46	44
<i>By Product Type</i>								
Consumer Goods - Durable	6	3	70	72	71	50	55	47
Consumer Goods - Nondurable	8	5	72	69	59	76	51	54
Capital Goods	8	6	71	72	68	75	54	45
Intermediate Goods	7	4	71	68	79	75	46	41

## 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	
		Q1	Q4
Internal Funds	1921	96	94
Founder	66	3	3
Others	12	1	0

*The second most important source of financing*

Sources	Number of Firms	% of Firms	
		Q1	Q4
Founder	593	30	16
Banks	102	5	16
Internal Funds	24	1	2
Others	10	1	0

## Appendix A1. Industry and Regional Ranking of Excess Capacity

### Appendix 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	
		Q1	Q4	Q1	Q4
		Coal Mining and Washing	5	100	50
Manufacture of Rubber Products	31	6	11	13	29
Manufacture of Special-purpose Machinery	123	6	6	9	11
Smelting and Pressing of Non-ferrous Metals	24	4	0	8	3
Manufacture of Metal Products	126	4	5	8	9
Manufacture of Transport Equipment	76	4	3	4	3
Smelting and Pressing of Ferrous Metals	30	3	0	7	0
Manufacture of Chemical Products	125	3	1	8	8
Manufacture of Leather, Fur, Feather, Related Products and Footwear	39	3	10	3	10
Manufacture of Non-metallic Mineral Products	122	2	6	10	12
Manufacture of Handicrafts and Others	42	2	2	5	7
Manufacture of Foods	49	2	0	6	2
Processing of Agricultural and Related Products	102	2	2	6	5
Manufacture of General-purpose Machinery	198	2	3	4	8
Computers, Communication and Electric Equipment	73	1	3	1	3
Manufacture of Plastics	92	1	7	5	11
Manufacture of Electric Machinery and Apparatus	143	1	3	7	10
Mining and Processing of Nonmetal Ores	6	0	0	33	22
Manufacture of Chemical Fibers	6	0	0	17	0
Manufacture of Medicines	65	0	0	3	3
Manufacture of Textile Wearing and Apparel	79	0	1	3	7
Manufacture of Beverage	42	0	0	2	6
Production and Supply of Water	14	0	17	0	42
Power Production and Supply	26	0	0	0	0
Manufacture of Measuring Instruments	34	0	0	0	3
Manufacture of Textiles	119	0	5	0	13
Processing of Wood Products	41	0	0	0	0
Mining and Processing of Non-ferrous Metal	4	0	14	0	14
Printing, Reproduction of Recording Media	39	0	0	0	3
Manufacture of Furniture	28	0	3	0	3
Manufacture of Cultural and Sports Products	26	0	0	0	0
Processing of Petroleum and Nuclear Fuel	13	0	0	0	10
Manufacture of Paper and Paper Products	54	0	0	0	0

Notes:

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

## Appendix 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	
		Q1	Q4	Q1	Q4
Guizhou	8	13	0	13	0
Shanxi	18	11	5	17	29
Jilin	21	10	5	10	5
Yunnan	17	6	5	6	5
Shaanxi	20	5	5	15	10
Shandong	180	4	5	8	13
Henan	70	4	8	7	12
Guangxi	27	4	7	7	14
Liaoning	81	4	3	5	6
Beijing	35	3	0	6	0
Chongqing	37	3	0	8	3
Guangdong	261	3	5	7	9
Hebei	81	2	6	5	13
Shanghai	95	2	5	3	6
Hubei	48	2	2	4	8
Sichuan	59	2	4	7	7
Zhejiang	311	1	2	4	5
Jiangsu	312	0	2	3	7
Inner Mongolia	11	0	0	9	7
Anhui	59	0	2	7	11
Hunan	35	0	3	6	8
Fujian	99	0	0	2	5
Heilongjiang	23	0	0	0	5
Tianjin	45	0	0	0	4
Jiangxi	32	0	6	0	10
Gansu	9	0	13	0	13

Notes:

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

## Appendix A2. Industry and Regional Diffusion Index for Cost and Price

### Appendix A2.1 Industry Diffusion Index for Cost and Price

	Number of Firms	Diffusion Indices							
		Unit Cost Index		Labor Cost Index		Material Cost Index		Price Index	
		Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4
Coal Mining and Washing	5	100	50	100	50	100	50	0	50
Manufacture of Textiles	119	84	51	82	52	55	49	49	46
Production and Supply of Water	14	79	56	64	58	50	50	50	50
Manufacture of Cultural and Sports Products	26	79	54	81	55	69	52	56	52
Manufacture of Rubber Products	31	77	61	77	70	65	46	44	44
Manufacture of Medicines	65	75	53	76	56	67	52	58	61
Manufacture of Textile Wearing and Apparel	79	73	55	73	50	65	55	53	50
Manufacture of Beverage	42	71	53	61	56	65	50	57	48
Manufacture of Measuring Instruments	34	71	62	71	63	63	58	51	50
Processing of Wood Products	41	68	50	55	50	66	50	56	50
Manufacture of General-purpose Machinery	198	68	50	80	53	29	49	44	49
Computers, Communication and Electric Equipment	73	64	53	78	52	50	51	51	51
Manufacture of Leather, Fur, Feather, Related Products and Footwear	39	64	52	55	53	64	52	62	52
Smelting and Pressing of Ferrous Metals	30	63	53	77	51	19	27	23	17
Printing, Reproduction of Recording Media	39	63	70	60	68	59	58	50	50
Manufacture of Non-metallic Mineral Products	122	63	63	66	56	52	58	51	49
Manufacture of Foods	49	61	50	56	50	57	50	55	50
Manufacture of Chemical Products	125	59	56	54	56	55	49	52	48
Mining and Processing of Nonmetal Ores	6	58	56	58	44	58	61	50	44
Manufacture of Chemical Fibers	6	58	71	67	71	42	14	50	21
Power Production and Supply	26	58	53	58	50	52	54	48	50
Processing of Agricultural and Related Products	102	57	54	54	52	58	55	57	50
Manufacture of Plastics	92	57	53	67	53	53	51	50	50
Manufacture of Handicrafts and Others	42	57	63	63	61	46	53	45	43
Manufacture of Transport Equipment	76	57	50	57	52	49	48	46	45
Manufacture of Paper and Paper Products	54	56	63	56	64	54	59	50	48
Manufacture of Furniture	28	54	54	52	57	52	47	44	50
Manufacture of Electric Machinery and Apparatus	143	52	49	52	50	51	49	49	47
Mining and Processing of Non-ferrous Metal	4	50	50	50	50	50	50	50	57
Manufacture of Metal Products	126	50	50	56	52	45	49	46	46
Manufacture of Special-purpose Machinery	123	48	55	50	55	49	52	49	47
Smelting and Pressing of Non-ferrous Metals	24	46	53	50	55	46	48	41	45
Processing of Petroleum and Nuclear Fuel	13	38	20	50	50	38	20	35	15



## Appendix A2.2 Regional Diffusion Index for Cost and Price

	Number of Firms	Diffusion Indices							
		Unit Cost Index		Labor Cost Index		Raw Material Cost Index		Price Index	
		Q1	Q4	Q1	Q4	Q1	Q4	Q1	Q4
Guizhou	8	69	50	69	50	71	50	57	50
Yunnan	17	68	52	68	50	59	60	47	39
Guangxi	27	67	59	63	55	60	57	58	50
Chongqing	37	65	52	65	53	50	48	47	43
Shaanxi	20	65	60	58	60	58	55	48	55
Fujian	99	65	60	67	57	53	54	54	49
Anhui	59	64	52	61	48	52	51	49	44
Zhejiang	311	64	54	66	54	50	51	49	48
Beijing	35	63	56	61	59	61	55	51	52
Jiangsu	312	63	55	66	56	50	49	49	47
Henan	70	62	57	61	57	54	51	50	46
Shandong	180	62	54	63	54	53	50	48	46
Hebei	81	62	52	65	55	48	48	48	46
Hunan	35	61	51	60	53	56	49	49	50
Jiangxi	32	61	55	64	56	50	52	48	53
Gansu	9	61	44	61	44	39	42	44	43
Sichuan	59	61	54	62	53	49	53	47	48
Guangdong	261	61	54	61	54	56	51	53	49
Hubei	48	60	55	63	57	55	51	56	50
Shanghai	95	60	51	64	54	48	51	50	48
Tianjin	45	59	51	60	51	51	48	45	47
Heilongjiang	23	59	55	63	53	48	50	48	50
Liaoning	81	58	52	64	51	42	51	42	48
Shanxi	18	58	60	61	57	42	52	42	48
Inner Mongolia	11	55	54	55	57	50	50	41	39
Jilin	21	55	55	62	55	55	53	55	50