

## State-owned enterprise reform: has it been effective?

Xiaolu Wang

### THE QUESTION TO BE ANSWERED

Economic reform in China in the past two decades has significantly accelerated economic growth and increased people's income. However, reform of state-owned enterprises (SOEs) during the major part of this period has basically been ineffective. The rapid economic growth in China during the reform period was mainly led by the rapidly growing non-state-owned enterprises (NSEs)—or later privately-owned or collective-owned enterprises, shareholding corporations, and foreign-invested enterprises. Meanwhile, the performance of the SOE sector has generally been unsatisfactory. Due to their lower growth rate, partly caused by the serious financial problems faced by many of them, the SOEs' share in the economy has fallen dramatically. This chapter focuses on analysing which reform measures have been relatively more effective, and uses that to develop a view on future priorities.

### REFORMS AND PERFORMANCE OF SOEs TO DATE

SOE reform in the 1980s and early 1990s was mainly focused on government–enterprise relations and enterprise management. This included increasing the autonomy of, and reducing government interventions in, SOEs by allowing enterprise managers to make more decisions with respect to production, pricing, marketing, investment, and more or less, employment. Production plans, price controls, and government distribution of inputs and outputs were basically abandoned. The old

requirement for SOEs to surrender a proportion of turnover was abolished; instead, value-added tax and profit tax systems were introduced. The direct government finance to SOEs was replaced by bank loans. There were also partial changes to the incentive system in enterprises with the Enterprise Contract System to SOEs.

It was expected that these changes would enable SOEs to survive growing market competition and be able to develop themselves. However, the strategy was not very successful until the late 1990s. Initially, the financial situation of SOEs worsened. Non-performing loans built up rapidly. Statistical data show that the SOE share in gross industrial output dropped from 76 per cent in 1980 to only 28 per cent in 1999 (see Table 3.1).<sup>1</sup> The statistical definition of gross industrial output changed in 2000 to exclude small NSEs with an annual sale of 5 million yuan or less. However, under the original definition, the SOE share further dropped from 48.9 per cent to 47.3 per cent in 2000. Contribution by either SOEs or NSEs to GDP are unavailable in published statistics. The author estimates that the share of SOEs in GDP fell from a dominating position of around 60 per cent to 36 per cent of GDP in 1999 (Wang, forthcoming).<sup>2</sup>

While the SOE share in total output was dropping rapidly, the share in inputs (labour and investment) fell much more slowly, remaining quite high throughout the 1980s and early 1990s. The SOE share in urban employment was 76 per cent in 1980—it was still 59 per cent in 1995. The reduction of the SOE share in total investment in fixed assets was also slow. It only fell from 66 per cent in 1985 to 54 per cent in 1995 (see Tables 3.2 and 3.3). The allocation of bank loans has been biased towards SOEs throughout the reform period. Take as an example the state-owned Industry and Commerce Bank, the largest commercial bank in China. In mid

**TABLE 3.1**                      **SHARES OF SOEs AND OTHER ENTERPRISES IN**  
**GROSS INDUSTRIAL OUTPUT (PER CENT)**

	SOE	Collective	Self-employed	Others, including private	Total
1980	76.0	23.5	-	0.5	100.0
1985	64.9	32.1	1.9	1.2	100.0
1990	54.6	35.6	5.4	4.4	100.0
1995	34.0	36.6	12.9	16.6	100.0
1999	28.2	35.4	18.2	18.2	100.0

**Note:** Including the shareholding corporations with controlling shares owned by the state.

**Source:** Calculated from National Bureau of Statistics (NBS), 1994, 1999, 2000 and 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

1999, 79.1 per cent of its short-term loans were extended to SOEs, and only 20.9 per cent to NSEs. Of the latter, collectively-owned enterprises received the major part (Wang 2000).<sup>3</sup> Non-performing loans in the state banks, (loans mainly extended to SOEs) accumulated sharply and the government had to write off a large proportion in the late 1990s. In general, SOEs have been characterised by high inputs and low rates of return, reflecting inefficient use of resources.

SOE reform changed direction in the mid and late 1990s, particularly after 1998, when a large number of workers were made redundant. Another significant change occurred to ownership structure. Restrictions on privatisation were lifted for small SOEs. Many small SOEs have been privatised or rented to private managers. The recent fall in SOEs' share in the economy was in part a result of this privatisation. Shareholding systems were introduced to a large number of medium and large SOEs, although the state still holds a controlling proportion of shares in many of them. Some SOEs have been converted to joint ventures with foreign investment.

According to an enterprise survey carried out in 19 provinces, 75 per cent of the

**TABLE 3.2**                    **SHARES OF SOEs AND OTHER ENTERPRISES IN URBAN EMPLOYMENT (PER CENT)**

	SOE	Collective	Self-employed	Others, including private	Total
1980	76.2	23.0	0.8	-	100.0
1985	70.2	26.0	3.5	0.3	100.0
1990	70.2	24.1	4.2	1.5	100.0
1995	59.0	16.5	8.2	16.4	100.0
2000	38.1	7.0	10.0	44.8	100.0

**Source:** Calculated from National Bureau of Statistics (NBS), 1994, 1999, 2000 and 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

**TABLE 3.3**                    **SHARES OF SOEs AND OTHER ENTERPRISES IN TOTAL INVESTMENT (PER CENT)**

	SOE	Collective	Self-employed	Others, including private	Total
1985	66.1	12.9	21.0	-	100.0
1990	65.6	11.9	22.5	-	100.0
1995	54.4	16.4	12.8	16.3	100.0
2000	50.1	14.6	14.3	21.0	100.0

**Source:** Calculated from National Bureau of Statistics (NBS), 1994, 1999, 2000 and 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

small and medium SOEs had been subject to fundamental change by the end of 1999, including ownership changes. Another survey indicates that, of the 520 large SOEs that the survey covered, 70 per cent had been transformed to corporations with a multi-owner system by the end of 1999 (Lu 2001). According to the statistics, by the end of 2000, pure SOEs only contributed 49.7 per cent of SOEs' gross industrial output. This implies that half of the current SOEs have already become share-holding companies or joint ventures with mixed shares of state and private owners (although the state still holds a controlling share). The state also tightened the monitoring system on large SOEs by appointing special auditors to these firms.

These measures were observed to have improved the resource allocation in SOEs. SOE employment, which has long included a high proportion of supernumeraries, decreased from 113 million to 81 million during the period 1995–2000. SOEs' share in urban employment fell from 59 per cent to 38 per cent over the same period. Their share in total investment fell, though less dramatically, from 54 per cent to 50 per cent (see Tables 3.2 and 3.3).

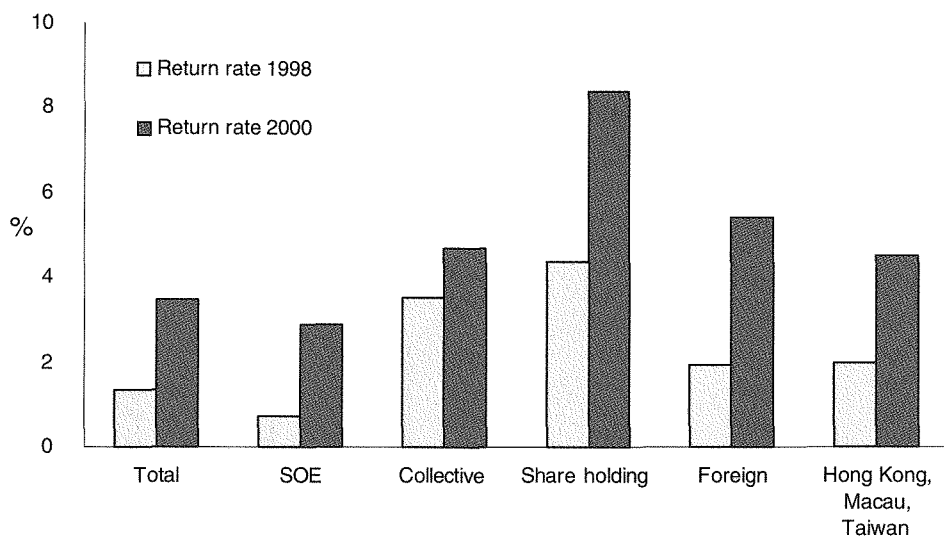
To date, NSEs have dominated or at least been very important in the labour-intensive industries such as light industry, construction, road transport, retail, catering, and daily services. Meanwhile, SOEs still play a dominant role in some heavy industries such as oil, power generation, metal smelting and chemical materials. They also dominate in some service sectors, such as finance, insurance, rail and air transport, telecommunications, and medical services. Thus, the performance of SOEs still has important impact on China's overall economic performance.

## THE EFFECT OF RECENT SOE REFORMS

SOEs' profits fell continuously between 1993 and 1997–98.<sup>4</sup> But the trend changed during the period 1998–2000, when SOEs profits in the industrial sector increased from 53 billion yuan to 241 billion.<sup>5</sup> Total profits in non-state industrial enterprises also increased dramatically, from 93 to 199 billion,<sup>6</sup> although the improvement was less impressive than for the SOEs. Figures 3.1–3.3 compare three indicators of SOE performance with different groups of NSEs for the period 1998–2000. They are the rate of return on assets (defined as the ratio of total profit to the value of total assets), price margin (defined as the ratio of total profit to total sales) and liability rate (defined as total liability as a proportion of total assets). A higher rate of return indicates higher productivity of capital; a higher price margin shows generally higher profitability; a higher liability rate indicates, all other things being equal, higher

**FIGURE 3.1**

**RETURN RATE IN THE INDUSTRIAL SECTOR, 1998–2000**



**Note:** Data of the NSEs are 'non state-owned above designed size industrial enterprises', defined by NBS.

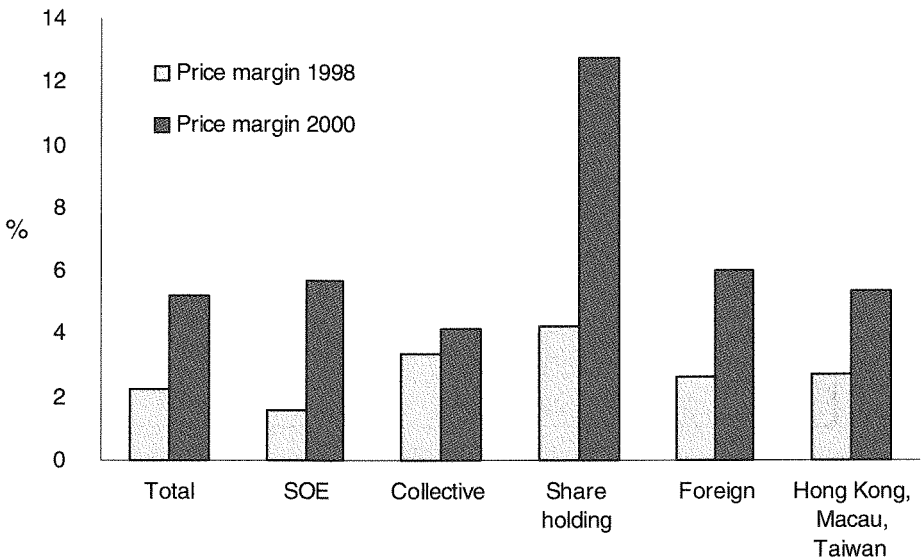
**Source:** Calculated from National Bureau of Statistics (NBS), 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

operating risk of enterprises.

There were substantial increases in the return rate and price margin of SOEs as well as NSEs, except collective enterprises which only showed a minor improvement (Figures 3.1 and 3.2). There was also a slight reduction in the liability rate of SOEs and other NSEs (Figure 3.3). All three indicators show improvement in the efficiency of SOEs, although they still have the lowest return rate and a relatively high liability rate compared with NSEs.

Furthermore, using the year 2000 data for 37 industrial branches for an efficiency analysis, negative relations are found between the return rates and the share of SOEs in the value-added of branches, and between price margin and the SOE shares (Figure 3.4). There is a clear trend of decreasing return rate when the percentage share of SOEs in the value-added of the corresponding branches is increasing. A similar trend is apparent in the price margin, although it is less obvious (Figure 3.5). This indicates that, in spite of their improved efficiencies, SOEs are generally less efficient than NSEs.

FIGURE 3.2

**PRICE MARGIN IN THE INDUSTRIAL SECTOR, 1998–2000**

**Note:** Data of the NSEs are 'non state-owned above designed size industrial enterprises', defined by NBS.

**Source:** Calculated from National Bureau of Statistics (NBS), 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

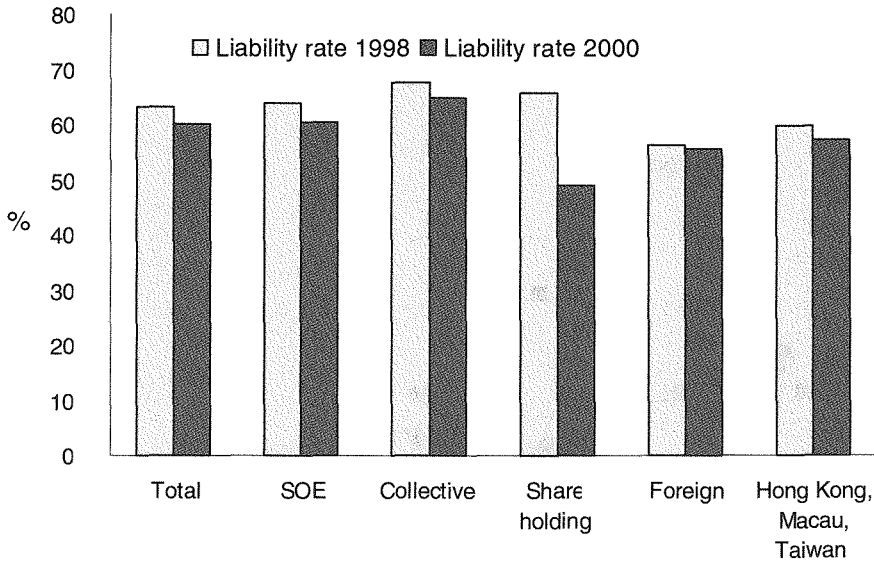
In addition to the above, an earlier survey covering 100 large and medium enterprises has suggested that, in terms of output growth rate and profitability of firms, those shareholding corporations with controlling shares owned by non-state owners (private, collective or foreign) achieve better results than those controlled by the state (see Wang 1996).

It should also be noted that there were external factors contributing to the improvement in firms' efficiency during the 1998–2000 period. They included

- substantially lower interest rates, which reduced costs for all enterprises with bank loans
- increases in oil prices, which made the state petroleum industry more profitable
- the conversion of a large amount of bank loans into state equity, and the write-off of bad loans. This reduced firms' interest costs.

Is it possible that the improvement in SOEs' efficiency was entirely the result of changing external factors? Lower interest rates also had a positive effect on NSEs.

FIGURE 3.3

**LIABILITY RATE**

**Note:** Data of the NSEs are 'non state-owned above designed size industrial enterprises', defined by NBS.

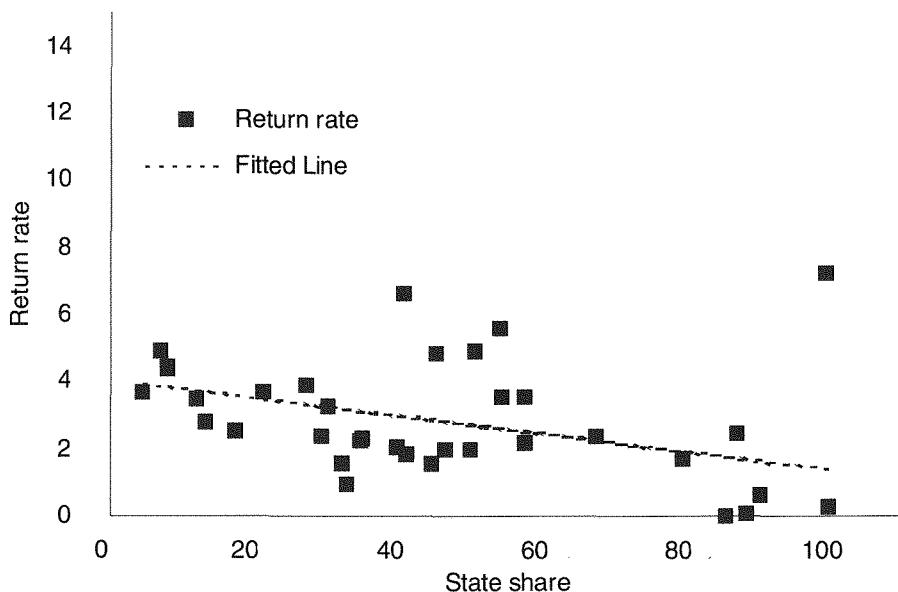
**Source:** Calculated from National Bureau of Statistics (NBS), 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

A calculation in Table 3.5 indicates that the interest rate reduction between 1998 and 2000 led to profit increases of approximately 52 billion yuan for SOEs; this explains 28 per cent of their profit increased. During the same period, the same interest rate reduction led to a total increase of 82 billion yuan in all industrial enterprises; therefore there was a 30 billion increase in NSEs. The latter explains 29 per cent of the total increase in NSEs' profit.

Next, profit in the oil extraction industry (nearly all state-owned) in 1998 and 2000 was 14 and 115 billion yuan, respectively. A rough estimate attributes 3.7 billion to interest rate cuts. We may assume that the remaining 97 billion yuan was entirely induced by the oil price change. At the same time, the increase in the oil price also increased production cost for SOEs, and therefore also had a negative effect on the profit of SOEs except for oil companies. This effect is calculated as 18 billion.<sup>7</sup> Thus, the increase in the oil price actually increased SOEs' profits by 79 billion yuan, which explains 42 per cent of the profit increases in industrial SOEs.

FIGURE 3.4

### **RATE OF RETURN AND STATE SHARES IN INDUSTRIAL BRANCHES, 2000**



**Source:** Calculated from National Bureau of Statistics (NBS), 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

TABLE 3.4

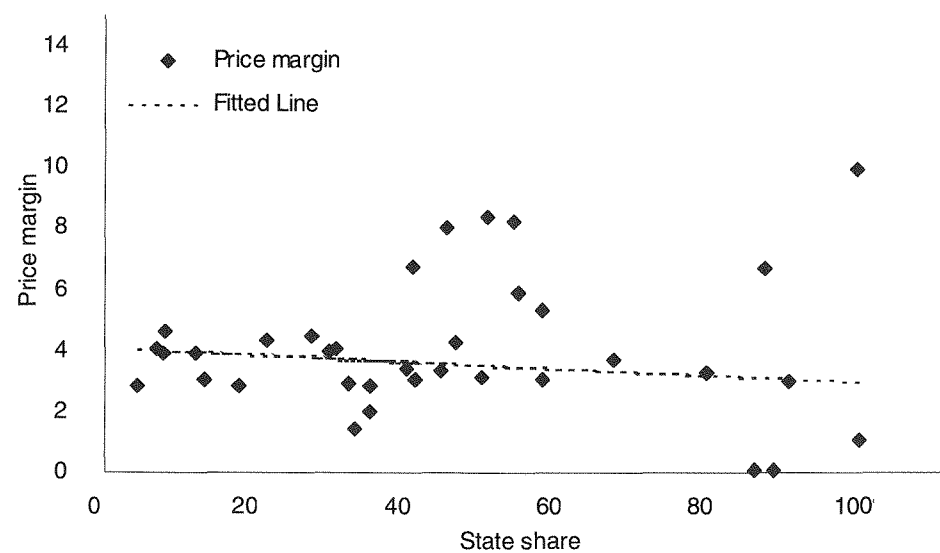
### **PERFORMANCE MEASURES OF STATE AND NON-STATE ENTERPRISES, 2000 (PER CENT)**

	Return rate	Price margin	Liability rate
SOE	2.9	5.7	60.3
Collective-owned	4.7	4.2	64.7
Share-holding	8.4	12.7	48.8
Foreign funded	5.4	6.0	55.5
Hong Kong, Macau, Taiwan-funded	4.5	5.3	57.2
Others (estimate)	1.3	0.9	70.4
Total	3.5	5.2	60.1

**Source:** Calculated from National Bureau of Statistics (NBS), 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.



**FIGURE 3.5      PRICE MARGIN AND STATE SHARES IN INDUSTRIAL BRANCHES, 2000**



**Source:** Calculated from National Bureau of Statistics (NBS), 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

During the period 1998–2000, 148.7 billion yuan of non-performing loans in SOEs were written-off (Li 2001). An estimated 30 billion was converted to the share-holdings of four state agencies.<sup>8</sup> This should reduce SOEs’ interest payments by 10 billion yuan, which explains 5.4 per cent of the profit growth of SOEs.

Thus, 75 per cent of the dramatic increases in SOEs’ profits can be explained by changing external factors. The remaining 25 per cent—or 47 billion yuan—can be attributed to the higher profitability caused by internal factors in SOEs; this resulted in an 89 per cent real increase in profit from 53 to 99 billion yuan between 1998 and 2000. During the same period, NSEs’ real profit increased by 117 per cent, from 93 to 203 billion yuan (after deduction of the positive and negative effects of the external factors; that is, lower interest rates and higher oil prices). If we calculate the return rates in 2000 using the profit and deducting the effects of these external factors, they increased from 0.7 per cent to 1.2 per cent for SOEs during the 1998–2000 period, and from 2.8 per cent to 4.8 per cent for NSEs during the same period (Table 3.6). The above calculation suggests an improvement in the performance of

TABLE 3.5

**HOW MUCH PROFIT GROWTH CAN BE EXPLAINED BY  
THE INTEREST RATE REDUCTION? (PER CENT, 100  
MILLION YUAN)**

	Industry total			Industry SOE		
	Short term	Long term	Total	Short term	Long term	Total
Bank loans 2000 (%)	34423.0	27931.0		3224.0	1846.0	
Interest 1998 (%)	6.9	8.1		6.9	8.1	
Interest 2000 (%)	5.6	5.7		5.6	5.7	
Interest rate reduction (%)	1.4	2.4		1.4	2.4	
Benefit	472.0	351.0	823	300.0	223.0	523.0
Total profit increase per cent			2935			1883.0
Per cent explained			28			27.8

**Notes:** Bank loans to industrial enterprises are estimated, derived from the following procedure:

1) Assuming the following categories of short-term loans are lent to industrial enterprises: short-term loans to industry, town and village enterprises, private enterprises and self-employed persons, and to foreign-invested enterprises.

2) The ratio of the above loans to total classified short-term loans is derived as 52.4 per cent (Total classified short-term loans accounted for 78 per cent of the total short-term loans and 51 per cent of total loans lent by all financial institutions).

3) Apply this ratio to unclassified short-term loans and medium and long-term loans to derive total loans to industrial enterprises.

Loans to industrial SOEs is calculated as short-term loans to industry (SOE share = 100 per cent) + unclassified short-term loans x (SOE share) + medium and long-term loans x (SOE share). The SOE share is derived from the share of SOE loans in total classified short-term loans. Interest rates are based on the regulated rates of short-term loans and medium and long-term loans. The interest rate differences are calculated as the differences of the average rates in 1998 and 2000, respectively, for the two categories of loans

**Source:** Calculated from National Bureau of Statistics (NBS), 1999 and 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

SOEs (though not as dramatic as it first appears) implying that SOE reforms since 1998 have been effective.

To further investigate the performance of SOEs, return rates are calculated for the 37 industrial branches from 1998–2000. The relationships between the changes in return rate (2000 return rate minus 1998 return rate) and the shares of SOEs in all branches are plotted in Figure 3.6.<sup>9</sup> It illustrates an inverse U-shape relation between changing return rate and the share of SOEs, with predominantly a downward slope. The fitted curve indicates that industrial branches with both a low and medium level of state shares had a greater improvement in efficiency. The branches with a medium level of state shares are even better. However, those branches dominated by SOEs had only a minor improvement, implying that the improvement in

SOEs' efficiency was not mainly an effect of policies that favoured SOEs.

Thus we can conclude that the significant increase in returns to SOEs from 1998 to 2000 have resulted mainly from external factors—falling interest rates, increases in oil prices and the write-off of bad loans. However, SOEs' profitability has also increased, most likely as a result of recent reforms relating to changes in their ownership structure. In many industries, SOEs compete with NSEs, thus inducing greater efficiency in the SOE sector.

## LESSONS FROM PAST SOE REFORMS

The early reform measures (mainly decentralisation) were necessary for SOEs while the economy was moving from a central planing to a market system. However, experience has shown that establishing a competitive market environment via deregulation has not been enough to revive SOEs, as a major residual problem within SOEs is a lack of incentive to win market share. In addition, the government, as the owner of SOEs, has failed in its role as a monitor of enterprise management. However recent reforms, which have relieved SOEs of the burden of redundant employment, and more importantly, allowed changes in the ownership structure of SOEs by accepting private ownership, appear to have been more effective. To further understand this issue, a review of the major problems faced by SOEs in the past is necessary.

### Government intervention

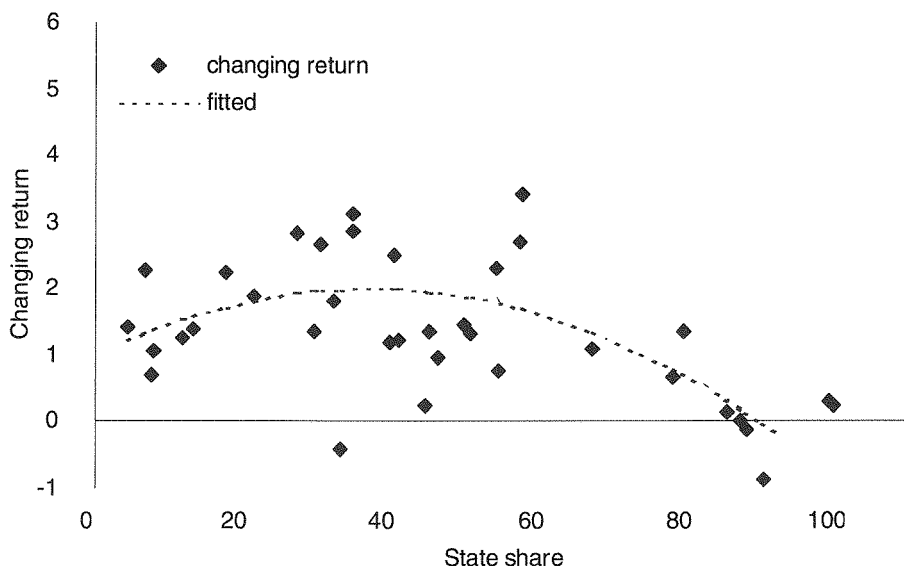
Excessive government controls and interventions in SOEs caused low efficiency. However, this was addressed via deregulation during the reform period. Most SOE managers now have substantial freedom in decision making and operate in the market.

### Incentives

Payment to both managers and workers in SOEs was regulated and usually unrelated to work performance. Wage determination in SOEs has become more flexible following reform, although many SOE managers are either still underpaid compared with those who work for private or foreign companies, or well paid but not in a way that relates to their contribution to the firm. The situation differs from region to region. According to a survey by NBS in 1999, the highest CEO salary of SOEs was 200 times the average workers' wage rate in Sichuan province, whereas it was

FIGURE 3.6

### CHANGING RETURN RATE RELATING TO THE STATE SHARE, 1998–2000



**Note:** Changing return rate means the percentage point changes in return rate from 1998–2000.

**Source:** Calculated from National Bureau of Statistics (NBS), 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

TABLE 3.6

### ANALYSING SOURCES OF PROFIT GROWTH IN SOES AND NSES, 1998–2000 (100 MILLION YUAN)

	SOE				NSE			
	1998	2000	Change	Exp	1998	2000	Change	Exp
Total profit per cent	525	2408	1883	(100.0)	933	1985	1052	(100.0)
From								
Interest rate reduction			523	(27.8)			300	(28.5)
Changing oil price			791	(42.0)			-341	(-32.4)
Written-off bad loans			101	(5.4)				
Own profitability growth			468	(24.8)			1093	(103.9)
Real return rate	0.7	1.2	0.5		2.8	4.8	2.0	

**Notes:** Data in parentheses under 'Exp' are share of contribution by different factors to total profit changes. 'Real return rate' for 2000 is calculated as the ratio of total profit, excluding that resulting from the three external factors, to total assets.

**Source:** Calculated from National Bureau of Statistics (NBS), 1999 and 2001. *China Statistical Yearbook*, China Statistics Press, Beijing.

only five times that in Henan province. As another example, a company listed in the stockmarket made 553 million yuan net profit in 1998, of which its CEO's annual salary was only 33,000 yuan. In comparison, another stock company incurred 97 million yuan of losses in the same year, but its CEO salary was 430,000 yuan, far higher than the average. A correlation analysis shows that the salaries of directors and CEOs of the 919 companies listed in the stockmarket in 1999 that there is no statistically significant correlation to the performance of these companies (Zhang 2001).

### Punishment

Jobs were guaranteed for SOE workers and managers in the past. This made them unconcerned with their work performance or the future of their firms. This has changed in recent years following the layoff of large numbers of SOE workers. However, there is still little real risk of poor management leading to loss of a manager's job, and this encourages irresponsible behaviour. Due to the lack of a punishment mechanism, the performance of SOEs relies mainly on the managers' personal characteristics.

### Monitoring problem

Along with the process of deregulation during the reform period, monitoring of SOE management was also relaxed and this has encouraged corruption and dereliction of duty amongst managers. There are several reasons for this. First, there is a lack of standard and effective procedures and regulations of auditing and monitoring. Second, there is insufficient information on SOE management for the government as owner (Lin and Cai 1997). This also relates to whether the number of SOEs was beyond the government capacity for effective supervision. Third, unlike private owners, government officials in charge of SOEs do not have any personal interests relating to the performance of the SOEs under their supervision. Fourth, rent-seeking behaviour of government officials is undermining SOEs' competitiveness. This raises the question of how the government should conduct itself as a conscientious owner of SOEs, and how best to monitor government officials.

### Investment behaviour of governments

The poor performance of SOEs has been largely due to excessive government investment in many areas of manufacturing. Local governments, from provincial to county level, were fond of investment in manufactures and tended to compete with each other with little care for investment risks. This resulted in a serious surplus of production capacity. According to the third national industrial census in 1995, for

over half of the 900 industrial products, the producers' capacity-utilisation rate (total output to total production capacity) was below 60 per cent. In 1998, there were 120 automobile manufacturers in China—mostly SOEs—with total annual output of 1.6 million automobiles. Of these manufacturers, only one achieved a minimum economically efficient scale of 150,000 cars per year. In the same year, there were 3,500 steel and iron smelters in China, also mostly SOEs, and only five achieved the economically efficient scale of 4 million tonnes of output capacity (Liu 2001). The serious over-capacity and sub-economic scale in production of manufactures indicates that, compared with private investors, government investors are likely to be more adventurous in investment and less concerned about risks and efficiency.<sup>10</sup> It also indicates the lack of mechanisms for bankruptcy of SOEs, and for mergers of SOEs under the administration of different provincial, municipal and county governments, or between SOEs and NSEs.

These problems can be summarised as two major issues: the need to establish a better supervision system for correctly assessing the performance of SOE management and implementing incentive and punishment accordingly; and the need for correcting the behaviour of the owners of SOEs. Within an environment of market competition, SOEs can be revitalised if these needs are met. However, past experience has shown little achievement in these areas within the existing ownership framework. In this case, a third need becomes crucial: to replace the sole state ownership of SOEs by either a mixed multiple ownership structure, or full privatisation. This will convert more SOEs to shareholding companies, joint ventures, cooperatives and private firms. The improvement in SOE efficiency that has been identified in this paper indicates that these reform measures appear to be successful.

Privatisation also has difficulties and costs. In particular, in privatising large SOEs, a common problem is the lack of domestic buyers; alongside the political unacceptability of foreign control of many large enterprises. A dispersed shareholding system by all small owners may help to overcome this difficulty, but may not solve the monitoring problem. In practice, state assets were often sold to SOE managers or others at very low prices. This may be one of the solutions to the efficiency problems, although is not a fair redistribution of public assets, and therefore could easily cause social conflicts and government corruption. In addition, privatisation is not an option for those SOEs that produce public goods or have substantial externalities. To avoid the problems, a mixed ownership structure may be still a better option in reforming some large SOEs.

So long as public ownership exists—even if private ownership is introduced to the SOE ownership structure—a better supervision system from the government side and well-disciplined government representatives for public ownership are still necessary. The ‘state–assets–authorisation–operation system’ (see Chen 2001) that was introduced in recent years could be helpful if the role of the organisations being authorised is clearly defined, and the assessment system is transparent.

While ownership structure reform in SOEs appears to have had some initial success, there is no simple solution for SOE reform. A ‘big bang’ measure cannot solve the problem overnight. ‘To cross the river by groping the stones’, an analogy to past reform experience in China, with careful consideration of all the economic and social impacts, is still the best strategy for SOE reform in the future.

## Notes

- <sup>1</sup> This included shareholding corporations and joint ventures with controlling shares owned by the state. This definition holds throughout unless otherwise specified. However, this figure might be understated to some extent because the gross industrial output of the non-state sector, especially of rural collective and small private enterprises, was over-reported in the 1990s. See Meng and Wang (2000).
- <sup>2</sup> Data used in this paper are from the National Bureau of Statistics (NBS), various years, unless otherwise specified.
- <sup>3</sup> Surveys reveal that small private enterprises suffer more from the financial restrictions, whereas larger private enterprises, share-holding companies, foreign enterprises, and previously, collective enterprises, are relatively more able to obtain bank loans.
- <sup>4</sup> The figures are not comparable between 1997 and 1998 due to inconsistencies in the statistical definition. Profit was likely lower in 1998.
- <sup>5</sup> Profits were 43 billion yuan in 1997.
- <sup>6</sup> This excludes small NSEs, with 5 million yuan in sales, or less.
- <sup>7</sup> According to the 2000 data, final oil consumption by industry accounts for 53.7 per cent of total oil production. This can be partially attributed to industrial SOEs according to their share in industrial value-added (34.8 per cent); thus the final oil consumption by industrial SOEs accounted for 18.7 per cent of total oil production. This proportion is used to calculate the increases in oil cost to SOEs as a proportion of the increases in oil profit. Meanwhile, the oil effect on NSEs should be a negative 35 per cent of the oil profit growth, or -34.1 billion yuan.
- <sup>8</sup> To mid 2001, 483 SOEs were allowed to conduct the loan–share conversion, and a

total of 294 billion bank loans were involved. Of these SOEs, 60 have completed the conversion (Department of Industry, the State Economic and Trade Committee 2001). The converted loans were therefore roughly estimated by the author as 36.5 billion, on the basis of the ratio between the number of SOEs that completed conversion and the number of permitted SOEs, and further reduced to 30 billion for the period to the end of 2000.

- <sup>9</sup> Due to unavailability of information, the effects of external factors on profit change for the industrial branches could not be deducted from their profits. However, since one can assume that the distribution of these effects is not systematically biased among the other 36 industrial branches except the oil industry, analysing the relationship between changes in the 'gross' return rate and the SOE shares is still useful.
- <sup>10</sup> In recent years the government has substantially reduced its investment in manufactures and redirected its investment to infrastructure construction. This has been a good step towards reducing the problems mentioned above.