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Non-Performing Debts in Chinese Enterprises Patterns, Causes, and Implications for Banking Reform*

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Abstract

Given the domination of bank financing, non-performing debts (NPDs) in large Chinese enterprises are a proxy for non-performing loans (NPLs) in China's major banks. Using the firm-level survey of more than 20,000 large and medium-sized industrial enterprises by the National Bureau of Statistics of China, this paper estimates both the level and ratio of NPDs across ownership, industry, and region during 1995-2002. The results show NPD ratios have been falling since 2000 due to rapid expansion of better performing non-state enterprises (NSE), improving performance of the state-owned enterprises (SOEs), as well as exit of poor-performing enterprises, which is facilitated by the Asset Management Companies and other Merger & Acquisition activities. However, SOEs are still much more likely to generate NPDs than NSEs. The paper provides useful tools and sector information for assessing enterprise debt risks and draws lessons for banking reform in China.

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1. Introduction

Since early 2004, the newly established China Banking Regulatory Commission (CBRC) started to announce quarterly statistics on the ratio of non-performing loans (NPLs) for China's major banking institutions. It reported sharp fall of NPL ratio from above 24% in 2002, to 19.6% in June 2003, 17.8% in December 2003, 13.32% in June and December 2004, and only 8.71% in June 2005. During the two-year period of June 2003 to June 2005, the outstanding amount of NPLs in China dropped from RMB2.538 trillion to RMB1.276 trillion, a decrease of RMB1.262 trillion. This is clearly a dramatic turn around in terms of banking sector performance. Is the official statistics reliable? What happened to the quality of bank loans and enterprise debts in China? These questions motivate this paper. Outside observers took the official reports cautiously since they don't understand how China's banks calculated their NPL ratios. Most analysts and commentators would still put China's NPL ratios at a much higher level than the official one, usually two to three times of the official NPL ratio. For example, the UBS (Jonathan Anderson 2005) estimates that China's NPLs have fell from about 50% to 55% around 1997-98 to about 25% to 30% by the end of 2004. These market estimations of NPL ratios are usually based on macro data since it is difficult to get reliable and representative micro data from the Chinese banks.

This paper attempts to develop an alternative approach to study the non-performing loans in China using firm-level micro data. Due to the limited development of stock markets and enterprises bond markets in China, banks are still the major holders of enterprises' long-term and short-term debts. In recent years, Chinese banks have expanded rapidly in the business of consumer loans, especially mortgage loans. The outstanding amounts of consumer loans have risen from below 1% in 1998 to above 10% by 2004. Since on the whole, the quality of consumer loans is much better than enterprise loans, the quality of bank loans depends largely on the quality of bank lending to enterprises. The quality of enterprise debts is directly linked to the profitability of the enterprises. The ability to pay the interest and principal of loans derives ultimately from profitability and cash income flows of the enterprises. This is especially true if we are examining a large group of enterprises, where the variation in the enterprise-specific timing of cash income flows and structures of financing within the group would be averaged out statistically through the law of large numbers, making the profitability of each enterprise the single most important contribution to the quality of the enterprise group's portfolio of debts.

This paper uses the profitability conditions of each enterprise to measure and characterize the quality of the enterprise group's portfolio of debts. It uses both the reported profitability and the imputed profitability (the later is derived from the components of value added) to give two alternative estimates on the quality of debt portfolios for enterprise groups classified by ownership, industry, and region. The method is applied to a comprehensive annual survey of all the large and medium-sized industrial enterprises in China conducted by the National Bureau of Statistics of China. The information about the survey data can be found in Table A.1 to A.6 of the Data Appendix. As shown in Table A.6, the survey sample includes more than 20,000 enterprises and covers the period from 1995 to 2002. In 2002, the sample enterprises have 26 million employees, which is about 16.7% of China's industrial employment. They also incur RMB 5.7 trillion debts, which is as large as 43.6% of the total loans in China's financial institutions. The sample enterprises contributed to about 19.2% of China's GDP. Clearly these enterprises are the most important leaders in the Chinese

industrial sector. The aggregate financial information about the sample enterprises have been regularly reported in the Statistical Yearbook of China.

The contribution of this paper is in using the disaggregated firm-level data to study the enterprise profitability and the quality of the enterprise debts. The paper derives both the level and ratio of non-performing debts across enterprise groups by ownership, industry, and region for the period of 1995-2002. The results show that non-performing debts have indeed been falling due to both rapid expansion of better performing non-state enterprises, improvement in the performance of state-owned enterprises (SOEs), as well as rapid exit of poor-performing state-owned enterprises, which has been facilitated by the newly established Asset Management Companies specializing in dealing with non-performing loans. The micro-level evidence uncovered here is largely consistent with the reports of the CBRC on falling NPLs and NPL ratios in China's banking sector. However, our study provides a more transparent, simpler, and more objective method in estimating NPDs and allows the outsiders to examine the detailed causes and dynamics of the changing patterns of non-performing debts in Chinese enterprises. In particular, it was found that the SOEs had consistently generated higher NPD ratios than the non-state enterprises (NSEs), providing a challenge as well as an opportunity for future banking reform.

Section 2 defines our concepts of NPDs; Section 3 shows the patterns of NPDs and NPD ratios across enterprise's ownership type, industry, and region; and Section 4 examines the trend of NPD ratios during the period 1995-2002 and provides scenarios on the future of NPD ratios in China. Section 5 uses panel data regressions to identify the impact of various factors on the profitability and debt quality of the enterprises. Section 6 addresses the sample-selection bias in the measure of NPD ratios due to the exit of the poor-performing enterprises from the sample. Section 7 concludes the paper by discussing the implications of the empirical results on banking reform in China.

2. Defining and Estimating Non-Performing Debts

In recent years, the CBRC has been trying hard to monitor and supervise the NPLs in China's banking institutions. It developed detailed rules on the reporting of the amount of NPLs and NPL ratios. The purpose is to manage and reduce the financial risks by monitoring both the changing distribution of NPLs and the changing NPL ratios of individual banks and bank branches. This is clearly necessary and useful. Poor governance at the banks is a sufficient condition for creating NPLs even when the enterprise sector is doing well.

However, the efforts by the CBRC and the individual banks in reducing NPLs are only necessary conditions. Ultimately, the quality of China's banking assets and enterprise debts depend directly on the profitability of China's enterprises. For example, in the short run it is easy for banks to reduce NPL ratios or even the amount of NPLs by simply expanding the total amount of loans. New loans are much less likely to have repayment problems in the short run but may create more bad loans in the future if they are extended to potentially loss-making enterprises. New loans can also help the existing loss-making enterprises to continue to pay their interest on old loans, also shifting the underlying risks to the future. The problem is especially serious when the economy is booming. These are the main reasons why the reliability of NPL statistics as reported by the banks can vary a lot depending on how they are calculated. No outsiders know well how the NPLs and NPL ratios in China's banks are actually calculated since the decisions on each individual case require judgments that are too complex for outsiders to assess. This is why the analysts and

commentators rely more on their study of China's macro economic conditions such as business cycles and sector performance to gauge the level of NPLs in China. Based on their personal impressions and understandings about the Chinese economy they report NPL ratios usually two to three times larger than the official ratio.

This paper attempts to develop an objective measure on the quality of enterprise debts in China. It uses the profitability as the only criteria in measuring the quality of debts. The concept and its implementation are straight forward. If the enterprises are making profits, the quality of their debts, more specifically their total liabilities, are regarded in this paper as performing. If making loss, their debts are non-performing. The amount of the NPDs is then the sum of the total liabilities in the loss-making enterprises for a specific enterprise group. The NPD ratio for that group is simply the ratio of the sum of total liabilities in the loss-making enterprises divided by the sum of total liabilities in both the loss-making and profit-making enterprises in that group. This simple definition of NPD and NPD ratio makes our NPD statistics objective, easy to measure, and easy to understand.

Our concept of NPD ratio however is not applicable to any individual enterprise since an enterprise cannot have part of their debts performing and the other part non-performing. All the debts in one enterprise have the same quality according to our definition. In another word, in our definition, one enterprise cannot have 70% of their debts performing and 30% non-performing. For an individual enterprise, it may be making losses in the first few years but will make profits in the future. Then, its debt quality should be good after close examination by its creditors. Our definition of NPD would not be fair to this particular enterprise. On the other hand, we could also have a currently profitable enterprise which will become a loss-maker soon. Then, its debt quality would be bad upon close examination. Our assessment based only on current profitability may not do justice to this particular enterprise. However, the difference between current profitability and longer term profitability could be seen as a random distribution for a large group of enterprises such as groups in our sample separated by time, ownership, industry, and region. With a sizable group, the variability in the timing of cash flows, profit-steams, payments to creditors, and others profitability-related variables for enterprises within the group would offset each others, leaving the average NPD ratio for the group a much more reliable and accurate measure on the quality of the group's portfolio of debts. This is why our concept of NPD ratio is useful only for measuring debt quality for groups of enterprises. The study here would be very useful as a complementary research to the traditional method of estimating NPLs.

For our method to be useful, it needs to be applied to a representative sample with sizable groups of enterprises. The annual survey of large and medium-sized industrial enterprises by the National Bureau of Statistics is a suitable data set for applying our method. The NBS data is in fact a census data, not really a sampling data, since it covers all large and medium-sized industrial enterprises in China. In 2002, China has more than 180,000 industrial enterprises that have sales above RMB 5 million. The NBS sample only includes about 21,000 to 23,000 large and medium-sized industrial enterprises out of the total of 180,000. Many small industrial enterprises are not included in our study but most of them have limited access to bank finance under the current financial system in China.

One major weakness of using our method for the NBS data is the sample selection bias. The enterprises included in the NBS survey each year are not the same group of enterprises. About 20% enterprises enter and exit the survey sample each year due to changes in their size classification or organizational changes such as

mergers and acquisition, privatization, reorganization, and bankruptcy etc. The profitability of exit firms are not necessarily the same as the new entries. This means that we are studying only the largest and most dynamic frontier industrial enterprises in China but leave out the poor-performing ones. We will address this issue in section 6 and show the impact of the sample selection bias on the estimated ratio of NPD.

Our sample covered not only SOEs but also other types of enterprises in all industries and regions, including rural and urban collectives, private enterprises, domestic mixed ownership corporations, foreign invested enterprises, and enterprises with investment form Hong Kong, Macau, and Taiwan. But our sample does not include non-industrial enterprises, such as China Telecom, which is a big service sector firm. It is entirely possible that the enterprises not included in our sample have worse performance than the enterprises in this NBS sample. If that is the case, the NPD ratios for the entire Chinese enterprise sector would be higher than reported in this study. Also, if the banking institutions in China are performing worse than the enterprises in this NBS sample due to their own weak governance, the overall NPLs situation for the Chinese economy as a whole would be worse than that for the sample enterprises revealed in this paper. Also, we cannot compare directly the NPL ratios reported by the CBRC and the NPD ratios estimated here since they are defined differently. The NPD ratios here are designed to examine the trend and the cross-section patterns on the quality of Chinese enterprise debts.

As shown in Table A.6, during the period from 1995 to 2002, the sample enterprises created about 16% to 25% of China's industrial employment and 33% to 43% of China's industrial value added. Most significantly, the sample enterprises contributed to about 14% to 19% of China's GDP. Their total liabilities, one of the key variables we examine in this paper, amount to about 45% to 65% of China's total banking loans during the period from 1995 to 2002. Of course, not all of the total liabilities in the sample enterprises correspond to loans from the banks. But even assuming that 60% of the total liabilities in the sample are related to various bank loans, the statistical analysis in the paper would provide in-depth study on the quality of about 27% to 29% of China's total loans. In summary, although the members of sample enterprises are changing each year but they as a whole forms a stable club of China's industrial elite enterprises. The performance of this elite group of enterprises are much more representative of the performance of the Chinese industrial economy than, for example, the performance of the listed companies in China or any small sample study of Chinese enterprises occasionally conducted by the researchers. Given the growing importance of China's industrial sector for both the domestic and global economy, our analysis in this paper fills a crucial vacuum in understanding the dynamics of China's industrial reform and development.

Table 1, 2, and 3 shows the distribution of the total liabilities for the sample enterprises by ownership, industry, and region respectively. The objective of this paper is to find out how much of these debts are located in profit-making and loss-making enterprises and then to calculate the amount and ratio of NPDs. There are two underlying forces affecting the NPD ratios: the shifting distribution of debts across enterprise groups with different profitability and the changing profitability of each group.

Table 1 shows the distribution of total liabilities (or total debts) across ownership types. The share of total debts by SOEs fell sharply from 76.4% in 1995 to 48.2% in 2002, to the benefits of domestic mixed ownership corporations and private enterprises. The total debts for SOEs increased from RMB 2.5 trillion in 1995 to RMB 3.2 trillion in 1998 just before the Asian financial crisis, and then fell to RMB

2.8 trillion in 2002. The total debts for collectives followed the same pattern of SOEs, rising from RMB 227 billion in 1995 to RMB 287 billion in 1998 and then falling to RMB 219 billion in 2002. The shifting of debts towards private, mixed, foreign, or overseas Chinese enterprises has been steady and rapid throughout the period from 1995 to 2002 without any interruption by the Asian financial crisis in 1998-1999. For the eight years from 1995 to 2002, the total debts in the sample enterprises increased RMB 2,436 billion. Among the net increase, only RMB 246 billion ended in the SOEs, RMB 1,411 billion went to mixed ownership enterprises, RMB 467 billion to foreign enterprises, RMB95 billion to private enterprises. The drastic changes in the distribution of total debts are strong evidence showing rapid but quiet privatization and opening up for the most dynamic part of China's industrial sector. In the next section, we will show that the redistribution of total debts from SOEs towards the better performing NSEs contributed to the larger part of the observed fall in average NPD ratios for the sample enterprises.

How financial resources are allocated among the Chinese industrial enterprises during the period 1995-2002, which can be characterized as a period of high growth and steady reform? Which industries and regions are getting more financial resources for their elite industrial enterprises? Table 2 and 3 provides the answer. The two tables give us detailed information about the credit allocation among China's large and medium-sized industrial enterprises and illustrate the changing landscape of the Chinese enterprise financing. In Table 2 and 3 the total debts for each industry or region are sorted by their amount in 2002 to make it easy to look for the winners and losers. The last two columns show the amount of change and growth rate for total debts during the period 1995-2002.

As shown in Table 2, the top 5 industries in 2002 ranked by the level of their total debts are:

1. Electric Power, Steam and Hot Water
2. Transport Equipment Manufacturing
3. Smelting & Pressing of Ferrous Metals
4. Electronic and Telecom Equipment
5. Raw Chemical Materials and Chemical

The top five industries together attracted RMB2.692 trillion of debts or 47% of the total for the whole sample. The net gains of debts for the top five industries during 1995-2002 amounted to RMB 1.465 trillion or 60% of the gains by the whole sample. China's financial risks would be heavily influenced by the performance of the above five sectors.

From the last column of Table 2, the top 5 industries ranked by the growth of their total debts during 1995-2002 can be identified as the following:

1. Tap Water Production and Supply
2. Electric Power, Steam and Hot Water
3. Electronic and Telecom Equipment
4. Papermaking and Paper Products
5. Gas Production and Supply

Clearly the above leading industries, which are attracting investment in the last decade, are largely related to industrial infrastructure, intermediate inputs, raw materials, production equipments and utilities. The rapid development of these industries, would lay a solid foundation for China's further industrialization. In this sense, China's enterprise finance looks increasing driven by the market forces. Of

course, a risk-based regulation strategy would require extra attentions to be paid to these sectors with heavy concentration of investment. As we will see in the next section, some of the above sectors with rapid growth in enterprise debts do have high NPD ratios, especially in the SOE dominated utilities sector.

From Table 3 we can see the top 5 regions ranked by the level of their total enterprise debts in 2002 are Guangdong, Jiangsu, Shandong, Shanghai, and Liaoning. These regions are clearly becoming China's new industrial centers. In section 5, we will examine the region-specific enterprise performance which is relevant for assessing debt risks across region. Xiao (2005) examines the enterprise performance in the north-east region of China in detail and Xiao and Tu (2005) looks at the China's industrial productivity growth using the same set of data.

In the next section, we will show how much of the total debts shown in Table 1 to 3 are located in loss-making enterprises. The profitability of the enterprises becomes the crucial variable for our study. The reported accounting profits however have a number of problems. First, it is hard to check the consistence of the reported profits with other financial variables of the enterprises due to the complicated accounting regulations. In another word, we do not know how the reported profits are calculated from other financial variables reported in the NBS survey. Second, it is widely reported that enterprises may manage their profit numbers for many purposes including legal or illegal tax evasion. For this paper, it seems useful to develop an alternative measure of profitability based on a consistent set of financial variables available from the NBS survey. Since the main purpose of the NBS survey is to calculate the value added of the industrial enterprises, it is possible to develop a measure of profitability or potential profitability based on the reconstructed components of enterprise's value added.

We use the following variables available from the NBS survey to define the imputed profitability of the sample enterprises:

VA: value added including value added taxes and financial changes;
W: wage and other employee compensation expenses;
FC: financial charges including mainly interest payments;
D: current depreciations;
T: all tax payments including value added taxes;
TA: total assets

We can classify enterprises into eight profitability groups:

[-4]: if VA <= 0;
[-3]: if VA–W <= 0 AND VA > 0;
[-2]: if VA-W-FC <= 0 AND VA-W > 0;
[-1]: if VA-W-FC-D <= 0 AND VA-W-FC > 0;
[+1]: if VA-W-FC-D-T <= 0 AND VA-W-FC-D > 0;
[+2]: if VA-W-FC-D-T > 0 AND (VA-W-FC-D-T)/TA <= 5%;
[+3]: if (VA-W-FC-D-T)/TA > 5% AND (VA-W-FC-D-T)/TA<= 15%;
[+4]: if (VA-W-FC-D-T)/TA > 15%.

Table 4 shows the number of enterprises in each of the eight profitability groups over the period from 1995 to 2002. This imputed profitability by eight groups would allow us to separate the non-performing debts into more disaggregated groups according to the qualitative and quantitative extent of loss-making. The Chinese banks are in the process of changing their loan classification from four categories (normal, overdue, doubtful, and bad) into the international standard of five categories (normal, special

mention, substandard, doubtful, and loss). Unlike the classification of bank loans, the profitability classification proposed here reveals the underlying economic conditions, for example:

- Enterprises in profitability group [-4] create negative value added. They should be closed right away according to economic principles. The quality of their debts is worst among the eight groups by profitability.
- Enterprises in group [-3] have positive value added but cannot pay all of their wage bills. In economics, they cannot even cover their variable costs. They should also be closed as soon as possible to avoid incurring new losses. The quality of their debts would get worse every day as the losses accumulate.
- Enterprises in group [-2] can pay their wage bills but cannot pay all of their financial charges. The quality of their debts is poor but since the investment is sunk it may have reasons to continue operation in the short run to maintain employment, while waiting for turnaround after reorganization.
- Enterprises in group [-1] can pay their wage bills and financial charges but cannot cover all of their depreciation charges. The quality of their debts will fall as capital is depleted.

Due to space limitation, we will leave the more detailed analysis on NPDs based on the above profitability classifications for a separate paper. For this paper, we will focus on the big picture first and classify enterprises in the first four groups as loss-making and the last four groups as profit-making based on the imputed profitability.

Table 5 shows the number of enterprises making or losing profits based on both reported and imputed profits over the period from 1995 to 2002. The number of loss-making enterprises by imputed profitability was quite stable at about 8000 or 34% to 35% during 1995-1998 and then fell rapidly afterward to 4952 or 22.3% in 2002. The number of loss-making enterprises by reported profitability was 6937 (or 30.8%) in 1995 and rose sharply to 8987 (or 40.3%) in 1998 and then dropped to 6295 (or 28.3%) in 2002. In the next section, we will use both the imputed and reported profitability to estimate the amount and ratio of NPDs. Although the two profitability measurements are quite different in concept and measurement, both are useful for assessing the quality of enterprises debts. The imputed profitability is more useful for comparing enterprise performance across groups since it is based on a consistent set of reported financial variables but it is different from the actually reported profitability. The imputed profits could be larger than the reported profits for a number of reasons: first, since some of the value added may not turn into actual profits when the output is not sold or is still in inventory. Second, it is likely that reported profits may be lower than the imputed profits due to legal or illegal tax evasions or profit hiding. In other related papers (Liu and Xiao 2004 and Cai, Liu and Xiao 2005) we examine the issue of profit-disguising in detail.

3. Estimated Level and Ratio of Non-Performing Debts

Using the method developed in the last section, this section reports the main results on NPD statistics for the whole sample as well as by ownership, industry and region. Table 6 shows the amount of NPD as well as NPD ratio for the whole sample during the period from 1995 to 2002. There are two sets of NPD statistics in the table: the upper part is derived from the imputed profits and the lower part from the reported profits. In Table 6 the amount and the ratio of NPD are calculated for three categories of debts separately: total liabilities, long-term liabilities, and short-term

liabilities. They are quite similar in size and trend with NPD ratio for short-term liabilities declining slightly faster than for long-term liabilities.

According to the imputed profitability, the NPD ratio for the whole sample was quite stable around 27% to 30% during 1995-1999 and then declined rapidly afterwards to only 18.4% in 2002 with the amount of NPDs at about RMB 1 trillion.

According to the reported profitability, the NPD ratio for the whole sample was at 24.1% in 1995 and rose to 34.3% in 1998 and then fell to 22.9% with the amount of NPDs at about RMB 1.3 trillion in 2002. According to the China Banking Regulatory Commission, China's NPL ratio fell sharply to 19.6% with the amount of NPLs at RMB 2.5 trillion by the middle of 2003. Given the different definitions between NPLs and NPDs, the results we have here for NPD statistics look quite consistent with the CBRC statistics for NPLs. In the next section, we will examine further the trend of NPD ratios for the whole sample.

Table 7 and 8 compares the NPD statistics for different types of enterprises by ownership derived from both the imputed and reported profitability. The two tables show the NPD ratios vary significantly across types of enterprises by ownership with the SOEs have much higher NPD ratios than NSEs.

In 2002, the NPD ratio for the SOEs was 25.4% by imputed profitability and 25.8% by reported profitability. The NPD ratio for the private enterprises was 7.4% by imputed profitability and 15.8% by reported profitability. The NPD ratio for the domestic mixed ownership enterprises was 10.8% by imputed profitability and 20.2% by reported profitability.

From these NPD statistics in Table 7 and 8, it is possible to decompose the fall of average NPD ratio for the whole sample into two parts: the one due to improvement of NPD ratios in each type of the enterprises and the other part due to the redistribution of debts from SOEs to the better performing NSEs.

Let's assuming R^t_i is NPD ratio in year t for group i of enterprises and S^t_i is the share of debts by group i in year t, then the NPD ratio for the whole sample in year t can be calculated from the following formula:

$R^t = \sum_i R^t_i * S^t_i$;

where i = private, collective, mixed, foreign, HK-M-Taiwan, SOE;

The change of NPD for the whole sample from 1995 to 2002 can be presented equivalently in the following formats:

$R^{2002} - R^{1995}$

$= \sum_i R^{2002}_i * S^{2002}_i - \sum_i R^{1995}_i * S^{1995}_i$

$= \sum_i 0.5*(R^{2002}_i + R^{1995}_i)*(S^{2002}_i - S^{1995}_i) + \sum_i 0.5*(R^{2002}_i - R^{1995}_i)*(S^{1995}_i + S^{2002}_i)$;

The first term in the above equation is the first component of the change in NPD ratio for the whole sample during 1995-2002 that can be attributed to the shift of the total liabilities across ownership groups while holding the individual ownership group's NPD ratio at their average level for 1995 and 2002. Using statistics from Table 1, 7 and 8, this first component is -3.86% for imputed profitability method and -2.33% for the reported profitability method.

The second term is the component of change in NPD ratio for the whole sample during 1995-2002 that can be attributed to the fall in individual ownership group's NPD ratio while holding constant the distribution of total liabilities across ownership groups at their average level for 1995 and 2002. This second component is -4.74% for the imputed profitability method and 1.13% for the reported profitability method.

Hence, according to the imputed profitability method, the NPD ratio for the whole sample fell from 27.8% in 1995 to 18.4% in 2002, a drop of 9.8 percentage

points. Out of this 9.8 percentage points, 3.86 percentage points can be attributed to the shift of financial resources from SOEs to the better performing NSEs, which have lower NPD ratios than SOEs.

According to the reported profitability method, the NPD ratio for the whole sample fell only slight from 24.1% in 1995 to 22.9% in 2002, a drop of only 1.21 percentage points. The decomposing of this 1.21 percentage point shows that the shift of financial resources from SOEs to the better performing NSEs led to 2.33 percentage points drop in the NPD ratio for the whole sample while the changes in the NPD ratios for individual ownership groups have led to an increase of 1.13 percentage points in the NPD ratio for the whole sample.

Clearly the fall of NPD ratio is more significant according to the imputed profitability than to the reported profitability. As pointed out before, we are not clear how the reported profits are calculated because of the large variations in accounting and profit-reporting practices across types of enterprises, but we know exactly how the imputed profits are calculated from the financial variables that are used for measuring GDP. We think both measures are useful. The NPD statistics derived from the imputed profitability can be used for comparing the underlying performance of different groups of enterprises while the NPD statistics from the reported profitability reflects better the actual outcomes the creditors are going to face when they deal with the enterprises.

Table 9 to 12 contains NPD statistics by industry during 1995-2002. Table 9 and 10 are derived from the imputed profitability while Table 11 and 12 from reported profitability. Table 13 to 16 contains NPD statistics by region during 1995-2002. Table 13 and 14 are derived from the imputed profitability while Table 15 and 16 from reported profitability. All the above eight tables are sorted by the last column for 2002 so that readers can see easily the best and worse performers in the quality of enterprise debts by region.

The information here gives the big picture on the quality of enterprise debts across industry and region and can be used by the policy-makers, the banks, the investors, and the enterprises as a benchmark to check the performance of their own debt portfolios. This information is a public good and contributes to the more scientific management of the debt risks in China. Bankers from Shanghai and Guangdong may want to know the NPD statistics in their regions. Officials in charge of utilities may also want to know how bad that sector's enterprise debts are compared to other industries. These patterns are useful for illustrating the overall quality and distribution of enterprise debts in China as well as for informed policy debates.

4. Patterns of Non-Performing Debts

Applying simple regression method to the disaggregated NPD ratios, we can summarize the variability in NPD ratios for two relevant dimensions: one is the declining trend of NPD ratio and the other is the gaps in NPD ratios across the ownership, industry and region. Table 17 to 19 shows the results of six regressions using group NPD ratios reported in the six tables respectively (Table 7, 8, 10, 12, 14, and 16). In each of the six regressions, the independent variables include a time trend (year) and a categorical variable (ownership, industry, or region). Each categorical variable has "the whole sample" dummy to match the NPD ratio for the whole sample. The regression equations can be written as the following:

NPD ratio = f(year, categorical variable);

We use weighted regressions to discount the impact of NPD ratios in the early years (see weights in the footnote of Table 17, 18 and 19). The regression coefficient for the

time trend variable (year) would indicate how fast the NPD ratio would fall every year based on the variability of the NPD ratios reported for each group in the relevant tables. In principle, the declining trend of NPD ratios for all the groups is related to the improvement of general market environment of the Chinese economy due to reform and opening. The regression coefficients for the categorical variable would indicate the average gap between the NPD ratio of that particular category and the NPD ratio of the base category (which is indicated by a zero value for the coefficient and a blank value for t statistics in the tables) after taking out the influence of the declining trend in NPD ratio. The negative sign means "lower than" the NPD ratio of the base category.

For example, Table 17 shows that based on NPD ratios estimated from the imputed profitability and reported in Table 7, on average, the NPD ratios for a particular group is likely to decline by 1.5 percentage points each year. For the private enterprises is likely to be 21.3 percentage points lower than that for SOEs in that year. The NPD ratio for the whole sample is likely to be 12.4% lower than that for SOEs.

Regressions in Table 17, 18, and 19 can be used to make rough predictions for NPD ratios of a particular group in the future. But these rough predictions are only based on the pattern of NPD ratios during 1995-2002. Figure 1 and 2 shows the actual and predicted value of NPD ratios using the regression coefficients in Table 17 to 19 when the categorical variable is set to the whole sample. Figure 1 is based on the imputed profitability and shows a much faster rate of decline in NPD ratios than Figure 2, which is based on reported profitability.

A more sophisticated method for assessing the likely NPD ratios in the future years for the whole sample is to build a few likely scenarios based on alternative assumptions on the possible NPD ratios for individual groups and the possible distribution of total liabilities. Table 20 outlines nine scenarios for the NPD ratios for the whole sample by the year 2007 by providing specific alternative assumptions about possible NPD ratios for each group of enterprises and about possible distribution of total liabilities across groups. These simulated scenarios could facilitate policy debates by showing the magnitude of reforms necessary to achieve the objectives. For example, Table 20 shows that to lower the overall NPD ratio to 14.7% by the year 2007, it is necessary for individual groups to achieve NPD ratios in the optimistic case (e.g. 2002 NPD ratios estimated from imputed profitability) and for the distribution of total liabilities also to achieve the optimistic case where the SOE sector share of total liabilities falls to 20.2%. The nine scenarios in Table 20 are built for illustration purpose. The alternative assumptions are subjective and debatable but are all based on the patterns of NPD statistics estimated in this paper.

5. Explaining Profitability and Quality of Debts

The NPD statistics for each group of enterprises reflect the total effects from all factors that may cause non-performing debts. For example, a major factor contributing to high NPD ratio for the SOEs may be the fact that a lot of enterprises in the utilities industry are SOEs and the whole utilities industry is not profitable because of heavy price regulation by the government. In this case, the high NPD for the group of SOEs actually reflected both the ownership and industry risks. The purpose of this section is to use regression analysis to isolate different sources of bad debt risks. Since we have classified enterprise debts by their profitability, what we need to do is to explain what factors are driving the enterprise profitability and their returns on assets.

Table 21 and 22 summarize the characteristics of the key variables used in the profitability regressions. Table 23 reports the results of four panel data regressions: two logistic regressions explaining the imputed and reported profitability and two linear regressions explaining the imputed and reported return on total assets. The explanatory variables for the four regressions are the same, including the log (capital-labor ratio); ratio of liability to total assets; log (employees); market share; industry concentration; and dummy variables for ownership, year, industry, and region. The coefficients and their standard error indicate the size and the statistical significance of the impact on the profitability by the explanatory variables.

Some common patterns emerge in all of the four regressions:

- The ratio of liability to total assets has significantly negative impact on profitability, implying that the more the enterprise borrows the less the profits or the lower the returns on asset;
- Market share has positive impact on profitability;
- State ownership has negative impact on profitability;
- Profitability improves significantly during 2000-2002;

It should be noted that the above are independent impacts by each explanatory variable after controlling for the impacts of other explanatory variables, including the impact of industry and region variables.

The impacts of ownership on profitability revealed by each of the four regressions are the following:

- The logistic regression on the imputed profitability implies that as compared to the private enterprises, the odds ratio for collective, mixed, foreign, HK-Macau-Taiwan, and SOEs to be profitable should be multiplied by 0.637, 0.586, 0.466, 0.469, and 0.291 respectively. In another words, the SOEs have the lowest probability of making profits compared to other groups.
- The logistic regression on the reported profitability show similar results but with less dramatic quantitative impacts. As compared to the private enterprises, the odds ratio for collective, mixed, foreign, HK-Macau-Taiwan, and SOEs to be profitable should be multiplied by 0.806, 0.910, 0.391, 0.518, and 0.557 respectively.
- The linear regression on the imputed profitability shows that the return on total assets by the private, collective, mixed, foreign, HK-Macau-Taiwan enterprises will be 10.6 percentage points, 7 percentage points, 4.7 percentage points, 6.5 percentage points, and 5.3 percentage points higher than the SOEs.
- The linear regression on the reported profitability show that the return on total assets by the private, collective, mixed, foreign, HK-Macau-Taiwan enterprises will be 2.9 percentage points, 2.2 percentage points, 1.7 percentage points, 1.7 percentage points, and 1.5 percentage points higher than the SOEs.

Table 24 and 25 use the industry and region dummies in the four profitability regressions to construct the industry and region-specific profitability index. These tables can be used as benchmarks for assessing the pure industry-specific or region-specific risks of enterprise debts in China. They summarize the independent impacts of industry and location on the quality of industrial enterprise debts averaged over 1995-2002.

ISPI1, ISPI2, ISPI5, RSPI1, RSPI2, and RSPI5 are derived from the industry or region dummies in the logistic regressions but normalized by the sample average. As compared to the sample average, the odds ratio for specific industry or region to be profitable should be multiplied by the index value. For example, the index value of ISPI5 in Table 24 is 5.607 for tobacco industry. The odds ratio for tobacco industry to

be profitable, as compared to the average profitability of all industries, should be multiplied by 5.607, when other factors influencing profitability are held constant.

ISPI3, ISPI4, ISPI6, RSPI3, RSPI4, and RSPI6 are derived from the industry or region dummies in the linear regressions but are also normalized by first subtracting the average return of all industries or regions and then adding 1. This makes index value equal to 1 for the average of all industries or regions. The index value minus 1 is the additional return a specific industry or region has over the average return on total assets. For example, the index value of ISPI6 in Table 24 is 1.166 for tobacco industry. This means that tobacco industry's return on total assets is likely to be 16.6% higher than the average return on total assets for all industries.

Hence, Table 24 and 25 helps us to find out which industry and region are more profitable for the large and medium-sized industrial enterprises when the influences of other factors such as types of ownership and capital intensity are taken way. The two tables are sorted by ISPI5 and RSPI5 from high to low profitability. The top five industries by industry-specific profitability are:

1. Tobacco Processing
2. Petroleum and Natural Gas Extraction
3. Electric Power, Steam and Hot Water
4. Beverage Production
5. Medical and Pharmaceutical Products

The top five regions by pure region profitability are:

1. Shandong
2. Jiangsu
3. Hebei
4. Zhejiang
5. Henan

The profitability regressions in Table 23 could also be used to assess the profitability or debt quality of a particular enterprise if we know the value of the explanatory variable for that enterprise. The predicted value from the logistic regressions is the probability of making profits. Of course, the prediction using the regressions equation only helps to assess non-enterprise-specific risks that are summarized by the explanatory variables in the regressions. In the real world and for a specific enterprise, the enterprise-specific risks are clearly most important and cannot be analyzed using the statistic results here. However, it is usually the case that the practitioners know very well about the firm-specific risks but is difficult to assess the non firm-specific risks. Our study helps to reveal the non firm-specific information which is a public good and can contribute to better policy and more effective business strategy.

6. Exit of Poor-Performing Enterprises and its Impact on NPD Ratio

The analysis in the previous sections is affected by a sample selection bias due to the way the National Bureau of Statistics in China defines the sample of large and medium-sized industrial enterprises. In particular, as pointed out earlier, about 20% of firms enter and exit the sample every year, making the sample enterprises a very dynamic group that is reflecting quite accurately the current state of China's large industrial enterprise sector. But this creates a problem for measuring NPD ratio. It is possible that the exiting enterprises may have higher NPD ratios than the new entries.

Table 26 shows the number of enterprises by profitability and entry-exit status for the period from 1995 to 2002. The entry-exit status of a sample enterprise for a particular period t is defined as one of the following four exclusive groups[1]:

- "Exit": the enterprise was in the sample at t-1 and t but will not present in t+1;
- "New": the enterprise was in the sample at t and t+1 but not in t-1;
- "Stay": the enterprise was in the sample at t-1, t, and t+1;
- "Once": the enterprise was in the sample at t, but not in t-1 and t+1.

As shown in Table 26, in 1996, among the profit-making enterprises, 1177 enterprises appeared in the sample of 1995 and 1996 but did not show up in the sample of 1997 and hence they belong to the "exit" group; 2802 enterprises did not appear in the sample of 1995 but appeared in the sample of 1996 and 1997 and hence they fall into the "new" group; 10540 enterprises appeared in the sample of 1995, 1996, and 1997 and hence they are in the "stay" group; 516 enterprises did not appear in 1995 and 1997 but showed up in 1996 and hence they are put into the "once" group.

Table 26 tells us that both profit-making and loss-making enterprises are actively entering and exiting the sample every year. The dynamics of this life-death processes reflect how lively China's enterprise reform and restructuring has been. But we would expect that the "exit" group may have more loss-making enterprises than the "new" or "stay" group. The bottom part of Table 26 presents this information. The share of loss-making enterprises in the "exit" group is much higher than in the other groups, particularly during 1998-99. In 1998, the share of loss-making firms is 51.1% for "exit" group, 25.8% for "new" group, 32.2% for "stay" group, and 38.5% for the group that appear only "once" in the sample. Clearly the group that is exiting the sample has much higher share of poor-performing firms than the group that is entering the sample. This is a good trend for the economy but creates biased estimates in NPD ratios as the NPD of the exiting enterprises are entirely ignored in the analysis of the previous sections.

Unlike Table 26, which shows the distribution by entry-exit status in the number of enterprises, Table 27 shows the distribution in the amount of performing and non-performing debts by entry-exit status. For example, Table 27 shows the amount of non-performing debts that exited the sample were rising from RMB157 billion in 1995 to RMB200 billion in 1998, then falling to RMB92 billion in 2001. On the other hand, the amount of performing debts that entered the sample with the entry of new enterprises were rising steadily from RMB311 billion in 1996 to between RMB400 to 800 billion after 1998. The exit of bad firms and entry of good firms are clearly a driving force in improving the debt quality of the Chinese enterprise sector.

From Table 27, it is clear that the NPD ratio for the "exit" group is much higher than "new", "stay" or "ocne" groups. For example, in 1998, the NPD ratio for the "exit" group is 42.4%, close to twice the NPD ratio for "new" entry group which is 22.4% and much higher than the "stay" group of 29.4%.

[1] As we don't have 1994 and 2003 data, the entry-exit status for the year 1995 and 2003 may differ slightly from the definition here. For 1995, we have information on firms that "exit" or "stay" in 1996 but don't have information on firms that are "new" in 1995 or appear "once" in 1995. For 2002, we have information on firms that are "new" or "stay" in 2002 but have no information on firms that "exit" or appear "once" in 2002. The unavailable information show as blank in the table.

The implication of the above evidences is that the dynamics of entry and exit is contributing significantly to the fall of the NPD ratio for the sample. Clearly, the analysis in the previous sections underestimated the level of NPD ratios. However, the number of bad firms exiting the sample is more than the number of bad firms entering the sample for every one of the eight years. This means that the trend of declining NPD as discovered in the previous sections is still valid although some bias and distortions in the level of estimated NPD ratios did exist. The rest of this section attempts to identify the size of the bias in the NPD ratio due to the entry-exit dynamics of the sample enterprises.

If the "exit" group of enterprises were to remain in the sample while maintaining the same level of NPD ratio and the same amount of total debts, they would certainly push the NPD ratio of the enlarged hypothetical sample higher. Table 28 attempts to estimate how much higher the NPD ratio of the enlarged hypothetical sample would be if the "exit" group was to stay in the sample for one, two or three years. The row variable in Table 28 is defined as the following:

R(t) = NPD ratio for the original sample for period t, from row 4 of Table 6;
L (t) = Total liabilities or debts of the original sample for period t, from row 7 of Table 1;
Rx(t) = NPD ratio for the "exit" group for period t, from row 16 of Table 26;
Lx(t) = Total liabilities/debts for the "exit" group for period t, from row 11 of Table 27 .
R(t, T) = NPD ratio for the hypothetically enlarged sample with the original "exit" group to remain in the sample for T periods:
$R(t, T) = [R(t)*L(t) + \sum_j Rx(t - j)*Lx(t - j)]/[L(t) + \sum_j Lx(t - j)]$; j = from 1 to T.
dR(t, T) = R(t, T) – R(t), the difference in percentage point of estimated NPD ratios between the enlarged hypothetic sample and the original sample.

In Table 28, row 1 to 4 simply replicate results we have from previous tables as noted above. Row 5 to 10 constructs the NPD ratio and the total debts of the "exit" group for the period t-1, t-2, and t-3. These 10 rows of data will be used to calculate the NPD ratio for the enlarged hypothetical sample that would keep the "exit" group of enterprises for one, two or three period. The results is shown in row 11-13. The longer the "exit" group kept in the enlarged sample, the higher the NPD ratio for the enlarged sample. Row 14-16 of Table 28 shows the difference in percentage point in the NPD ratio between the enlarged hypothetical sample including the "exit" group and the original sample. This is the estimated sample selection bias. As shown in Table 28, on average, over the period 1998-2002, the NPD ratio would increase about two percentage points if the "exit" group of enterprises is kept in the sample for three more years.

As shown in column 16 of Table 28, the increase in NPD ratio in this counter factual experiment is particularly significant for the year 1999 to 2001, largely due to more active restructuring of SOEs during this period. We know that during the period from 1999 to 2000 the Chinese authorities have carved out RMB1.4 trillion bad loans from the four big state-owned banks to four Asset Management Companies to facilitate the bankruptcies and restructuring of SOEs. The exit of poor-performing enterprises and their debts from our sample was also very significant around 1998. In fact, as shown in row 6 of Table 27, from 1995 to 2000, RMB0.994 trillion of NPD (based on imputed profits method of this paper) exited from our sample, which amounted to about 70% of the bad loans carve-outs by the four asset management companies. The declining trend of NPD ratios observed in the sample during 1995-

2002 is clearly helped by the exit of these poor-performing enterprises and their NPDs. But as shown in the row 13 of Table 28, even including the "exit" group of enterprises, the estimated NPD ratio for the hypothetically enlarged sample would decline very significantly from 30.7% in 1998 to 20.0% in 2002, consistent with the trend we discovered in the previously sections.

The non-performing debts of the exited enterprises will continue to burden the banks, unless the banks can transfer the NPLs to the Asset Management Companies (which are established to manage NPLs). So, it is important to examine the impact of the exiting poor-performing firms on the estimated NPD ratios. But it is also important to keep in mind that the past NPDs are sunk costs, what matters the most for economic growth in China is the future trend of NPD ratios. Our NPD estimation method is more meaningful for projecting future NPD trend as our sample consists of a truly dynamic group of the more active Chinese industrial enterprises and they represent better and more accurately the current state of the Chinese industrial sector.

7. Implications for Banking Reform

This paper investigates empirically the quality of debts in the most dynamic group of enterprises in China. It uncovered large amount of independent, consistent and statistically significant micro-level evidence which show that the quality of enterprise debts in China has improved during the period 1995-2002, especially after 1998. These evidence look much more convincing than the macro statistics announced by China's financial authorities due to the transparency and scientific methods used in the research.

The fall in NPD ratios for our sample enterprises is brought about by the shift of financial resources from SOEs to NSEs, the improvement in the profitability of SOEs and NSEs, and the exit of poor-performing enterprises from the sample of the large and medium-sized industrial enterprises. Both enterprise restructuring and the timing of business cycles have contributed to the recent improvement in enterprise profitability in China and the fall in NPD ratios. But the benefits of reform dividends and business cycles timing could be uncertain in the future.

China can however continue to benefit from the shift of financial resources from the SOEs to better performing NSEs since the gaps in performance between the two are still very big. The gaps in profitability across industry and region in China are also large, showing the need for better risk management and more efficient allocation of financial resources. The analysis in this paper could contribute to better assessment of various risks relating to ownership, industry, and region.

The rising share by NSEs of financial resources and the declining NPD ratio for all types of enterprises provide excellent opportunities for pushing banking reforms in China now. If the banks can establish good corporate governance and risk management, there seem enough good NSEs to lend to.

However, most of the major banks in China are still state-owned. Given the strong evidences that SOEs are performing much worse than NSEs, it seems that developing good private banks, privatizing the state-owned banks (SOBs), and allowing more foreign or joint-venture banks should be the priority for banking reform. If China fails in the development of non-state banks, there could be a high risk that China may continue to have high NPL ratio even when its NPD ratio is falling due to the privatization of enterprises. This is because SOBs could create NPLs in spite of good performance of China's enterprise sector.

Appendix 1: Data Cleaning

The NBS survey covers more than 20,000 large and medium-sized industrial enterprises in China. There are some unusable observations due to incomplete data reporting or small enterprises which were classified as large and medium-sized historically based on their design production capacity. The classification standard for the size of industrial enterprises was first issued in April 1988 by a number of government agencies including the State Planning Commission, National Bureau of Statistics, Ministry of Finance, Ministry of Labor, and State Economic Commission. It includes detailed specifications based on the measurement of the output quantity or capacity in technical quantity terms, instead of in value terms. The standard is clearly a legacy of the centrally planned economy and is phasing out recently. It now only applies to state-owned industrial enterprises. For the private enterprises, the National Bureau of Statistics is using the sales as the unique variable in determining size of the enterprises.

In this study, observations satisfying one of the flowing screening conditions are regarded as unusable and deleted from the usable sample.

1. Net value of fixed assets < RMB100,000;
2. Intermediate inputs < RMB100,000;
3. Number of employees < 30;
4. Gross value of industrial inputs at current price < RMB100,000;
5. Sales < RMB100,000;
6. Total assets < RMB100,000;
7. Total assets – liquid assets < 0;
8. Total assets – gross fixed assets < 0;
9. Total assets - net value of fixed assets < 0;
10. Accumulated depreciation – current depreciation < 0;
11. MISSING data for total assets, number of employees, gross value of industrial output at current price, net value of fixed assets, or sales;

After deleting the unusable observations, only about 5% or less of the sample enterprises have sales values less than RMB 5 million. Table A.1, A.2, and A.3 show the distribution of usable and unusable observations in the sample by ownership, industry and region. Since the unusable observations are evenly distributed across ownership, industry, and region, we believe excluding them from the usable sample would not create much bias in our analysis.

Table A.4 shows the summary statistics for key size variables for the sample, including sales, output, assets, liabilities, labor, and value added. Table A.5 shows the same set of size variables at their selected percentiles. Table A.6 examines the weight of sample within the context of the Chinese economy. Clearly the sample represents an important part of the Chinese economy and this makes statistical analysis on the sample important and valuable for both policy makers and practitioners.

Appendix 2: List of industry code and the full industry name:

06 Coal Mining and Dressing
07 Petroleum and Natural Gas Extraction
08 Ferrous Metals Mining and Dressing
09 Nonferrous Metals Mining and Dressing
10 Nonmetal Minerals Mining and Dressing
12 Logging and Transport of Timber & Bamboo
13 Food Processing
14 Food Production
15 Beverage Production
16 Tobacco Processing
17 Textile Industry
18 Garments and Other Fiber Products
19 Leather, Furs, Down and Related Products
20 Timber, Bamboo, Cane, Palm Fiber & Straw
21 Furniture Manufacturing
22 Papermaking and Paper Products
23 Printing and Record Medium Reproduction
24 Cultural, Educational and Sports Goods
25 Petroleum Processing and Coking
26 Raw Chemical Materials and Chemical
27 Medical and Pharmaceutical Products
28 Chemical Fiber
29 Rubber Products
30 Plastic Products
31 Nonmetal Mineral Products
32 Smelting & Pressing of Ferrous Metals
33 Smelting & Pressing of Nonferrous Metals
34 Metal Products
35 Ordinary Machinery Manufacturing
36 Special Purposes Equipment Manufacturing
37 Transport Equipment Manufacturing
40 Electric Equipment and Machinery
41 Electronic and Telecom Equipment
42 Instruments, Cultural & Office Machinery
43 Other Manufacturing
44 Electric Power, Steam and Hot Water
45 Gas Production and Supply
46 Tap Water Production and Supply

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Table 1 Distribution of Total Liabilities by Ownership: 1995-2002 (RMB billion)

	1995	1996	1997	1998	1999	2000	2001	2002	Change of TL during 1995-2002	Change of TL during 1995-2002 as % of TL in 1996
private	0	1	2	11	18	31	61	95	95	9500.0%
collective	227	268	285	287	284	254	221	219	-8	-3.0%
mixed	231	279	380	514	690	1,033	1,424	1,642	1,411	505.7%
foreign	152	232	285	329	371	400	561	619	467	201.3%
HK-M-Taiwan	164	190	214	276	297	305	359	389	225	118.4%
state-owned	2,512	2,737	3,035	3,193	3,145	2,940	2,703	2,758	246	9.0%
Total	3,286	3,707	4,201	4,610	4,805	4,963	5,329	5,722	2,436	65.7%
private	0.0%	0.0%	0.0%	0.2%	0.4%	0.6%	1.1%	1.7%	1.7%	
collective	6.9%	7.2%	6.8%	6.2%	5.9%	5.1%	4.1%	3.8%	-3.1%	
mixed	7.0%	7.5%	9.0%	11.1%	14.4%	20.8%	26.7%	28.7%	21.7%	
foreign	4.6%	6.3%	6.8%	7.1%	7.7%	8.1%	10.5%	10.8%	6.2%	
HK-M-Taiwan	5.0%	5.1%	5.1%	6.0%	6.2%	6.1%	6.7%	6.8%	1.8%	
state-owned	76.4%	73.8%	72.2%	69.3%	65.5%	59.2%	50.7%	48.2%	-28.2%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 2 Distribution of Total Liabilities by Industry: 1995-2002 (RMB billion, sorted by TL in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002	Change of TL during 1995-2002	Change of TL during 1995-2002 as % of TL in 1996
[44]Electric power	296	317	361	521	614	719	802	934	638	215.5%
[37]Transport equipment	229	276	324	360	385	400	440	491	262	114.4%
[32]Pressing ferrous	331	356	396	416	440	407	417	443	112	33.8%
[41]Electronic & telecom	145	167	198	229	251	286	366	424	279	192.4%
[26]Raw chemicals	226	264	326	365	369	388	380	400	174	77.0%
[17]Textile	258	274	287	275	244	234	230	234	-24	-9.3%
[40]Electric equipment	136	164	185	195	194	195	218	226	90	66.2%
[35]Ordinary machinery	157	180	194	207	202	205	209	222	65	41.4%
[06]Coal mining	129	147	168	182	206	209	217	215	86	66.7%
[31]Nonmetal products	138	166	186	195	201	195	209	215	77	55.8%
[36]Special equipment	148	161	176	187	186	191	184	192	44	29.7%
[25]Petroleum processing	101	113	163	180	180	184	178	173	72	71.3%
[33]Pressing nonferrous	95	101	116	132	140	140	153	162	67	70.5%
[07]Petroleum extract	151	157	164	170	160	158	149	153	2	1.3%
[27]Medical	59	73	81	91	97	105	121	133	74	125.4%
[22]Papermaking	53	65	72	73	80	88	121	125	72	135.8%
[15]Beverage	73	83	99	103	108	111	111	114	41	56.2%
[13]Food processing	87	107	112	114	106	101	103	111	24	27.6%
[16]Tobacco	70	76	82	72	71	74	109	108	38	54.3%
[28]Chemical fiber	62	71	76	83	91	83	75	73	11	17.7%
[34]Metal products	46	53	59	62	63	59	65	68	22	47.8%
[14]Food Production	37	41	42	46	48	48	56	65	28	75.7%
[30]Plastic	31	38	43	46	48	49	55	61	30	96.8%
[29]Rubber	36	43	48	50	51	49	52	51	15	41.7%
[46]Tap water	14	15	23	27	30	34	39	46	32	228.6%
[42]Instruments	29	32	37	34	35	34	40	40	11	37.9%
[18]Garments	18	23	24	26	29	33	38	39	21	116.7%
[10]Nonmetal mining	16	16	18	19	23	28	23	29	13	81.3%
[23]Printing	14	17	19	20	22	23	27	27	13	92.9%
[19]Leather	16	19	21	21	21	21	23	24	8	50.0%
[45]Gas production	10	13	13	16	18	20	19	23	13	130.0%
[12]Timber logging	19	20	22	23	22	22	22	22	3	15.8%
[20]Timber	10	12	16	16	18	19	21	22	12	120.0%
[09]Nonferrous mining	18	18	19	19	19	19	20	21	3	16.7%
[43]Other manufacturing	9	11	11	10	12	11	13	13	4	44.4%
[08]Ferrous mining	6	7	8	11	9	8	8	10	4	66.7%
[24]Cultural	5	8	8	9	9	9	8	10	5	100.0%
[21]Furniture	4	4	5	5	5	5	6	6	2	50.0%
	3,282	3,708	4,202	4,610	4,807	4,964	5,327	5,725	2,443	74.4%

Table 3 Distribution of Total Liabilities by Region: 1995-2002 (RMB billion, sorted by TL in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002	Change of TL during 1995-2002	Change of TL during 1995-2002 as % of TL in 1996
[44]Guangdong	299	348	414	436	434	468	509	559	260	87.0%
[32]Jiangsu	226	269	300	320	328	369	456	503	277	122.6%
[37]Shandong	262	295	336	354	416	436	455	490	228	87.0%
[31]Shanghai	231	273	323	337	347	334	349	376	145	62.8%
[21]Liaoning	293	310	346	362	320	323	335	354	61	20.8%
[50]Sichuan+Chongqing	183	199	233	240	319	295	303	325	142	77.6%
[13]Hebei	143	166	184	199	213	224	249	257	114	79.7%
[41]Henan	133	156	165	204	210	219	234	254	121	91.0%
[42]Hubei	135	164	182	217	219	233	229	253	118	87.4%
[23]Heilongjiang	149	149	167	190	183	191	189	195	46	30.9%
[33]Zhejiang	121	143	153	157	159	166	170	187	66	54.5%
[12]Tianjin	108	110	119	156	155	144	153	175	67	62.0%
[22]Jilin	115	136	153	155	159	170	163	173	58	50.4%
[11]Beijing	98	113	132	166	154	157	187	169	71	72.4%
[61]Shaanxi	78	89	99	101	134	133	142	156	78	100.0%
[35]Fujian	47	55	54	55	62	66	135	149	102	217.0%
[43]Hunan	78	86	99	112	119	124	140	149	71	91.0%
[34]Anhui	81	92	108	108	113	131	129	145	64	79.0%
[14]Shanxi	78	89	100	129	129	135	126	133	55	70.5%
[53]Yunnan	58	64	68	75	76	75	103	114	56	96.6%
[62]Gansu	54	59	79	93	83	84	88	94	40	74.1%
[45]Guangxi	60	62	71	80	85	90	89	90	30	50.0%
[36]Jiangxi	58	68	72	78	87	88	90	88	30	51.7%
[15]Inner Mongolia	51	55	63	71	78	72	83	87	36	70.6%
[54]Tibet+Qinghai+Ningxia	34	34	43	56	57	63	55	79	45	132.4%
[52]Guizhou	44	40	47	59	63	74	72	78	34	77.3%
[65]Xinjiang	58	68	75	79	79	80	80	78	20	34.5%
[46]Hainan	12	15	19	20	23	20	15	16	4	33.3%
Total	3,287	3,707	4,204	4,609	4,804	4,964	5,328	5,726	2,439	74.2%

Table 4 Number of Enterprises by Profitability: 1995-2002

Profitability	1995	1996	1997	1998	1999	2000	2001	2002	Average 95-02
[-4]: if VA <= 0;	867	1,006	969	901	569	458	450	602	728
[-3]: if VA–W <= 0 AND VA > 0;	2,995	2,977	3,102	3,085	2,503	2,260	1,963	1,928	2,602
[-2]: if VA-W-FC <= 0 AND VA-W > 0;	2,152	2,199	1,988	1,749	1,307	955	811	698	1,482
[-1]: if VA-W-FC-D <= 0 AND VA-W-FC > 0;	1,815	1,757	1,839	1,943	1,841	1,684	1,740	1,724	1,793
[+1]: if VA-W-FC-D-T <= 0 AND VA-W-FC-D > 0;	3,059	2,644	2,705	2,579	2,399	2,396	2,396	2,138	2,540
[+2]: if VA-W-FC-D-T > 0 AND (VA-W-FC-D-T)/TA <= 5%;	5,095	5,106	5,336	5,284	5,292	5,129	5,225	4,985	5,182
[+3]: if (VA-W-FC-D-T)/TA > 5% AND (VA-W-FC-D-T)/TA<= 15%;	4,371	4,327	4,297	4,253	4,490	4,579	5,208	5,365	4,611
[+4]: if (VA-W-FC-D-T)/TA > 15%;	2,189	2,958	2,721	2,499	3,062	3,277	4,105	4,780	3,199
Total	22,543	22,974	22,957	22,293	21,463	20,738	21,898	22,220	22,136
[-4]: if VA <= 0;	3.8%	4.4%	4.2%	4.0%	2.7%	2.2%	2.1%	2.7%	3.3%
[-3]: if VA–W <= 0 AND VA > 0;	13.3%	13.0%	13.5%	13.8%	11.7%	10.9%	9.0%	8.7%	11.8%
[-2]: if VA-W-FC <= 0 AND VA-W > 0;	9.5%	9.6%	8.7%	7.8%	6.1%	4.6%	3.7%	3.1%	6.7%
[-1]: if VA-W-FC-D <= 0 AND VA-W-FC > 0;	8.1%	7.6%	8.0%	8.7%	8.6%	8.1%	7.9%	7.8%	8.1%
[+1]: if VA-W-FC-D-T <= 0 AND VA-W-FC-D > 0;	13.6%	11.5%	11.8%	11.6%	11.2%	11.6%	10.9%	9.6%	11.5%
[+2]: if VA-W-FC-D-T > 0 AND (VA-W-FC-D-T)/TA <= 5%;	22.6%	22.2%	23.2%	23.7%	24.7%	24.7%	23.9%	22.4%	23.4%
[+3]: if (VA-W-FC-D-T)/TA > 5% AND (VA-W-FC-D-T)/TA<= 15%;	19.4%	18.8%	18.7%	19.1%	20.9%	22.1%	23.8%	24.1%	20.8%
[+4]: if (VA-W-FC-D-T)/TA > 15%;	9.7%	12.9%	11.9%	11.2%	14.3%	15.8%	18.7%	21.5%	14.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5 Number and Share of Enterprises Making or Losing Profits: 1995-2002

			1995	1996	1997	1998	1999	2000	2001	2002	Average 95-02
Based on imputed profits	**Number of Enterprises**	Making profits	14,714	15,035	15,059	14,615	15,243	15,381	16,934	17,268	15,531
		Losing profits	7,829	7,939	7,898	7,678	6,220	5,357	4,964	4,952	6,605
		Total	22,543	22,974	22,957	22,293	21,463	20,738	21,898	22,220	22,136
	Share	Making profits	65.3%	65.4%	65.6%	65.6%	71.0%	74.2%	77.3%	77.7%	70.2%
		Losing profits	34.7%	34.6%	34.4%	34.4%	29.0%	25.8%	22.7%	22.3%	29.8%
		Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Based on reported profits	**Number of Enterprises**	Making profits	15,606	15,088	14,476	13,306	14,328	15,144	15,510	15,925	14,923
		Losing profits	6,937	7,886	8,481	8,987	7,135	5,594	6,388	6,295	7,213
		Total	22,543	22,974	22,957	22,293	21,463	20,738	21,898	22,220	22,136
	Share	Making profits	69.2%	65.7%	63.1%	59.7%	66.8%	73.0%	70.8%	71.7%	67.4%
		Losing profits	30.8%	34.3%	36.9%	40.3%	33.2%	27.0%	29.2%	28.3%	32.6%
		Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 6 Amount of Non-Performing Debts and NPD Ratio for the Whole Sample: 1995-2002

			1995	1996	1997	1998	1999	2000	2001	2002	Change in 95-02	Change in 98-02
Based on Imputed Profits	Amount of NPD (RMB Billion)	Within Total Liabilities	914	1,095	1,204	1,371	1,315	1,128	1,091	1,051	137	-320
		Within Long Term Liabilities	308	370	389	470	472	395	365	343	35	-127
		Within Short Term Liabilities	605	724	812	895	836	727	716	709	104	-186
	NPD Ratio (%)	Within Total Liabilities	27.8%	29.5%	28.7%	29.7%	27.4%	22.7%	20.5%	18.4%	-9.5%	-11.4%
		Within Long Term Liabilities	26.6%	29.5%	28.2%	30.3%	29.2%	24.2%	21.9%	19.9%	-6.7%	-10.4%
		Within Short Term Liabilities	28.5%	29.6%	29.1%	29.5%	26.5%	22.2%	19.8%	17.9%	-10.6%	-11.6%
Based on Reported Profits	Amount of NPD (RMB Billion)	Within Total Liabilities	792	1,002	1,167	1,580	1,427	1,185	1,392	1,311	519	-269
		Within Long Term Liabilities	282	327	368	556	504	411	441	408	126	-148
		Within Short Term Liabilities	509	674	793	1,014	916	759	930	891	382	-123
	NPD Ratio (%)	Within Total Liabilities	24.1%	27.0%	27.8%	34.3%	29.7%	23.9%	26.1%	22.9%	-1.2%	-11.4%
		Within Long Term Liabilities	24.4%	26.1%	26.7%	35.9%	31.1%	25.1%	26.5%	23.7%	-0.7%	-12.3%
		Within Short Term Liabilities	24.0%	27.5%	28.4%	33.4%	29.0%	23.2%	25.8%	22.5%	-1.5%	-11.0%

Table 7 Amount of NPD and NPD Ratio Estimated from Imputed Profitability by Ownership: 1995-2002

		1995	1996	1997	1998	1999	2000	2001	2002
Amount of NPD Estimated from Imputed Profitability (RMB Billion)	private	0	0	0	2	2	4	5	7
	collective	53	55	60	50	47	32	25	22
	mixed	39	63	90	107	165	191	207	178
	foreign	36	69	77	94	74	63	98	94
	HK-M-Taiwan	26	32	37	68	54	53	53	49
	state-owned	761	876	938	1,049	972	786	702	701
	Total	915	1,095	1,202	1,370	1,314	1,129	1,090	1,051
NPD Ratio Estimated from Imputed Profitability (%)	private	0.0%	0.0%	0.0%	18.2%	11.8%	12.9%	8.2%	7.4%
	collective	23.3%	20.6%	21.1%	17.4%	16.5%	12.6%	11.3%	10.0%
	mixed	16.9%	22.5%	23.7%	20.8%	23.9%	18.5%	14.5%	10.8%
	foreign	23.7%	29.7%	27.0%	28.7%	20.0%	15.8%	17.5%	15.2%
	HK-M-Taiwan	15.9%	16.8%	17.3%	24.6%	18.2%	17.4%	14.8%	12.6%
	state-owned	30.3%	32.0%	30.9%	32.9%	30.9%	26.7%	26.0%	25.4%
	Total	27.8%	29.5%	28.6%	29.7%	27.4%	22.7%	20.5%	18.4%
Share of NPD Estimated from Imputed Profitability (%)	private	0.0%	0.0%	0.0%	0.1%	0.2%	0.4%	0.5%	0.7%
	collective	5.8%	5.0%	5.0%	3.6%	3.6%	2.8%	2.3%	2.1%
	mixed	4.3%	5.8%	7.5%	7.8%	12.6%	16.9%	19.0%	16.9%
	foreign	3.9%	6.3%	6.4%	6.9%	5.6%	5.6%	9.0%	8.9%
	HK-M-Taiwan	2.8%	2.9%	3.1%	5.0%	4.1%	4.7%	4.9%	4.7%
	state-owned	83.2%	80.0%	78.0%	76.6%	74.0%	69.6%	64.4%	66.7%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 8 Amount of NPD and NPD Ratio Estimated from Reported Profitability by Ownership: 1995-2002

		1995	1996	1997	1998	1999	2000	2001	2002
Amount of NPD Estimated from Reported Profitability (RMB Billion)	private	0	0	0	4	4	7	12	15
	collective	53	67	74	84	69	52	48	42
	mixed	28	37	69	136	172	214	296	332
	foreign	44	82	102	136	107	98	177	139
	HK-M-Taiwan	29	45	52	89	74	63	77	71
	state-owned	638	770	869	1,131	999	752	782	712
	Total	792	1,001	1,166	1,580	1,425	1,186	1,392	1,311
NPD Ratio Estimated from Reported Profitability (%)	private	0.0%	0.0%	0.0%	36.4%	23.5%	22.6%	19.4%	15.8%
	collective	23.3%	25.0%	26.1%	29.3%	24.3%	20.5%	21.7%	19.2%
	mixed	12.2%	13.3%	18.2%	26.5%	24.9%	20.7%	20.8%	20.2%
	foreign	28.9%	35.3%	35.8%	41.3%	28.9%	24.5%	31.6%	22.4%
	HK-M-Taiwan	17.7%	23.7%	24.3%	32.4%	24.9%	20.7%	21.4%	18.2%
	state-owned	25.4%	28.1%	28.6%	35.4%	31.8%	25.6%	28.9%	25.8%
	Total	24.1%	27.0%	27.8%	34.3%	29.7%	23.9%	26.1%	22.9%
Share of NPD Estimated from Reported Profitability (%)	private	0.0%	0.0%	0.0%	0.3%	0.3%	0.6%	0.9%	1.1%
	collective	6.7%	6.7%	6.3%	5.3%	4.8%	4.4%	3.4%	3.2%
	mixed	3.5%	3.7%	5.9%	8.6%	12.1%	18.0%	21.3%	25.3%
	foreign	5.6%	8.2%	8.7%	8.6%	7.5%	8.3%	12.7%	10.6%
	HK-M-Taiwan	3.7%	4.5%	4.5%	5.6%	5.2%	5.3%	5.5%	5.4%
	state-owned	80.6%	76.9%	74.5%	71.6%	70.1%	63.4%	56.2%	54.3%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9 Amount of NPD Estimated from Imputed Profitability by Industry: 1995-2002 (RMB billion, sorted by NPD in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002
[44]Electric power	52	86	80	143	188	169	174	177
[26]Raw chemicals	52	65	92	127	108	88	97	89
[06]Coal mining	63	76	77	81	112	102	67	77
[36]Special equipment	69	74	86	103	98	93	83	76
[37]Transport equipment	63	81	90	101	96	93	103	72
[41]Electronic & telecom	47	52	60	64	54	56	52	60
[31]Nonmetal products	42	56	72	65	59	49	48	51
[35]Ordinary machinery	52	71	74	81	74	65	62	51
[17]Textile	113	124	106	105	72	47	44	44
[40]Electric equipment	39	51	58	53	52	45	48	40
[22]Papermaking	13	13	22	28	21	19	25	27
[28]Chemical fiber	17	22	21	33	26	22	24	24
[32]Pressing ferrous	75	70	85	81	85	62	35	23
[27]Medical	13	20	19	20	15	11	13	19
[46]Tap water	7	7	12	9	10	12	13	19
[13]Food processing	32	42	41	42	32	21	17	18
[33]Pressing nonferrous	28	35	36	47	28	22	22	16
[42]Instruments	15	17	19	17	14	13	14	16
[14]Food Production	13	13	16	14	11	8	12	14
[34]Metal products	16	19	23	27	22	18	13	14
[45]Gas production	9	12	11	10	10	13	13	14
[15]Beverage	11	12	13	14	12	13	9	13
[07]Petroleum extract	3	4	13	0	13	11	18	12
[25]Petroleum processing	3	9	7	15	18	8	17	10
[10]Nonmetal mining	7	5	7	7	6	6	7	9
[29]Rubber	9	9	9	11	18	9	9	9
[30]Plastic	12	12	14	16	14	10	7	9
[09]Nonferrous mining	5	6	6	9	6	5	6	7
[12]Timber logging	4	4	6	7	9	8	7	7
[20]Timber	5	4	6	8	7	6	5	6
[18]Garments	4	5	4	7	5	4	6	5
[23]Printing	4	4	6	5	6	6	6	5
[08]Ferrous mining	5	4	1	5	2	2	1	3
[19]Leather	6	5	5	7	4	5	3	3
[43]Other manufacturing	3	2	3	3	3	3	3	3
[24]Cultural	1	2	1	3	2	3	2	2
[16]Tobacco	1	1	1	3	1	2	3	1
[21]Furniture	2	1	1	1	2	2	2	1
Total	915	1,095	1,203	1,372	1,315	1,131	1,090	1,046

Table 10 NPD Ratios Estimated from Imputed Profitability by Industry: 1995-2002 (%, sorted by NPD ratio in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002
[45]Gas production	90.0%	92.3%	84.6%	58.8%	58.8%	68.4%	72.2%	60.9%
[46]Tap water	50.0%	43.8%	50.0%	34.6%	32.3%	34.3%	33.3%	41.3%
[36]Special equipment	46.3%	46.0%	48.9%	55.1%	52.7%	48.9%	45.1%	39.6%
[42]Instruments	51.7%	53.1%	51.4%	50.0%	40.0%	38.2%	35.0%	39.0%
[06]Coal mining	49.2%	51.7%	45.8%	44.5%	54.6%	48.8%	30.9%	35.8%
[09]Nonferrous mining	27.8%	35.3%	31.6%	47.4%	33.3%	26.3%	30.0%	35.0%
[28]Chemical fiber	27.4%	31.0%	28.0%	39.8%	28.9%	26.5%	32.0%	32.9%
[12]Timber logging	21.1%	20.0%	27.3%	30.4%	40.9%	34.8%	33.3%	31.8%
[10]Nonmetal mining	41.2%	33.3%	38.9%	36.8%	27.3%	21.4%	30.4%	31.0%
[08]Ferrous mining	83.3%	57.1%	12.5%	45.5%	25.0%	22.2%	12.5%	30.0%
[20]Timber	55.6%	33.3%	37.5%	50.0%	38.9%	31.6%	23.8%	28.6%
[31]Nonmetal products	30.4%	33.7%	38.7%	33.3%	29.5%	25.1%	23.0%	23.8%
[43]Other manufacturing	30.0%	20.0%	27.3%	30.0%	25.0%	27.3%	25.0%	23.1%
[35]Ordinary machinery	33.1%	39.7%	38.1%	39.1%	36.6%	31.7%	29.5%	23.0%
[26]Raw chemicals	23.0%	24.6%	28.3%	34.8%	29.3%	22.7%	25.5%	22.3%
[22]Papermaking	24.5%	20.3%	30.6%	38.4%	26.3%	21.6%	20.7%	21.6%
[14]Food Production	35.1%	31.7%	38.1%	29.8%	22.9%	16.7%	21.1%	21.5%
[34]Metal products	34.8%	35.8%	39.0%	43.5%	34.9%	30.5%	20.0%	20.6%
[24]Cultural	20.0%	25.0%	12.5%	33.3%	22.2%	33.3%	25.0%	20.0%
[44]Electric power	17.6%	27.1%	22.2%	27.4%	30.6%	23.5%	21.7%	19.0%
[17]Textile	44.0%	45.3%	36.9%	38.2%	29.5%	20.0%	19.1%	18.8%
[23]Printing	28.6%	25.0%	31.6%	25.0%	26.1%	26.1%	22.2%	18.5%
[29]Rubber	25.0%	21.4%	18.8%	22.0%	35.3%	18.4%	17.3%	18.0%
[40]Electric equipment	28.5%	31.1%	31.4%	27.2%	26.8%	23.1%	22.0%	17.7%
[21]Furniture	50.0%	25.0%	20.0%	20.0%	40.0%	40.0%	33.3%	16.7%
[13]Food processing	36.4%	39.3%	36.6%	36.5%	30.2%	20.8%	16.5%	16.2%
[30]Plastic	38.7%	31.6%	32.6%	34.8%	29.2%	20.4%	12.7%	15.0%
[37]Transport equipment	27.5%	29.3%	27.7%	28.1%	24.9%	23.3%	23.4%	14.7%
[27]Medical	22.0%	27.4%	23.5%	22.2%	15.5%	10.5%	10.7%	14.3%
[41]Electronic & telecom	32.2%	31.1%	30.3%	27.9%	21.5%	19.6%	14.2%	14.2%
[18]Garments	23.5%	21.7%	16.7%	25.9%	16.7%	12.5%	16.2%	13.2%
[19]Leather	37.5%	26.3%	23.8%	33.3%	19.0%	23.8%	13.0%	12.5%
[15]Beverage	15.1%	14.5%	13.1%	13.7%	11.1%	11.7%	8.1%	11.4%
[33]Pressing nonferrous	29.5%	34.7%	30.8%	35.6%	20.0%	15.7%	14.4%	9.9%
[07]Petroleum extract	2.0%	2.5%	7.9%	0.0%	8.1%	7.0%	12.1%	7.8%
[25]Petroleum processing	3.0%	7.9%	4.3%	8.3%	10.0%	4.3%	9.6%	5.8%
[32]Pressing ferrous	22.7%	19.7%	21.5%	19.5%	19.3%	15.2%	8.4%	5.2%
[16]Tobacco	1.4%	1.3%	1.2%	4.2%	1.4%	2.7%	2.8%	0.9%
Total	27.9%	29.6%	28.6%	29.8%	27.4%	22.8%	20.5%	18.3%

Table 11 Amount of NPD Estimated from Reported Profitability by Industry: 1995-2002 (RMB billion, sorted by NPD in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002
[44]Electric power	83	39	76	119	161	147	173	183
[26]Raw chemicals	39	51	103	174	158	123	134	140
[37]Transport equipment	57	68	89	106	114	117	108	117
[25]Petroleum processing	4	22	16	76	39	86	98	76
[41]Electronic & telecom	31	41	53	60	54	35	59	73
[31]Nonmetal products	43	64	83	88	74	54	70	72
[17]Textile	104	135	128	135	88	51	74	69
[35]Ordinary machinery	36	52	58	72	64	59	68	65
[36]Special equipment	50	57	68	88	81	76	86	65
[40]Electric equipment	30	41	52	61	52	42	62	45
[28]Chemical fiber	11	20	16	34	27	17	32	32
[33]Pressing nonferrous	18	35	35	68	46	21	33	32
[13]Food processing	29	52	53	68	51	28	29	31
[22]Papermaking	13	17	26	32	27	23	40	30
[15]Beverage	18	21	22	29	27	25	27	29
[32]Pressing ferrous	45	61	69	68	81	41	43	25
[06]Coal mining	29	33	31	79	99	78	67	23
[27]Medical	12	17	24	23	15	14	17	20
[34]Metal products	15	21	26	30	27	21	19	19
[14]Food Production	12	15	17	18	13	12	17	18
[30]Plastic	11	12	14	17	14	13	13	15
[46]Tap water	4	5	10	12	9	9	11	15
[16]Tobacco	5	6	7	6	5	8	25	14
[42]Instruments	10	12	15	17	14	9	11	13
[10]Nonmetal mining	7	6	6	7	6	7	5	11
[29]Rubber	11	11	10	13	19	18	15	11
[45]Gas production	4	10	9	8	8	10	8	10
[07]Petroleum extract	28	40	6	22	7	2	3	9
[18]Garments	3	5	7	8	6	5	9	8
[20]Timber	4	5	7	8	7	6	8	8
[19]Leather	5	6	6	6	5	5	5	7
[09]Nonferrous mining	7	8	6	9	6	3	5	6
[12]Timber logging	3	5	8	7	7	8	7	6
[23]Printing	3	3	5	5	4	3	4	4
[08]Ferrous mining	5	3	2	2	3	3	2	3
[43]Other manufacturing	2	3	3	3	4	3	3	3
[21]Furniture	1	1	2	1	1	1	2	1
[24]Cultural	1	1	1	2	1	1	1	1
Total	793	1,004	1,169	1,581	1,424	1,184	1,393	1,309

Table 12 NPD Ratios Estimated from Reported Profitability by Industry: 1995-2002 (%, sorted by NPD ratio in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002
[25]Petroleum processing	4.0%	19.3%	9.8%	42.2%	21.7%	46.7%	54.7%	43.9%
[28]Chemical fiber	17.7%	28.2%	21.1%	41.0%	29.7%	20.5%	42.1%	43.8%
[45]Gas production	40.0%	76.9%	69.2%	50.0%	44.4%	50.0%	44.4%	41.7%
[10]Nonmetal mining	43.8%	37.5%	33.3%	35.0%	27.3%	25.9%	21.7%	37.9%
[20]Timber	40.0%	41.7%	43.8%	50.0%	41.2%	31.6%	38.1%	36.4%
[26]Raw chemicals	17.3%	19.3%	31.6%	47.7%	42.8%	31.7%	35.3%	34.9%
[36]Special equipment	33.8%	35.6%	38.6%	47.1%	43.5%	39.8%	46.7%	33.9%
[31]Nonmetal products	31.2%	38.3%	44.9%	45.4%	37.0%	27.7%	33.5%	33.6%
[46]Tap water	26.7%	31.3%	43.5%	44.4%	29.0%	26.5%	28.2%	32.6%
[42]Instruments	34.5%	37.5%	40.5%	51.5%	40.0%	26.5%	27.5%	31.7%
[08]Ferrous mining	71.4%	37.5%	25.0%	18.2%	33.3%	37.5%	25.0%	30.0%
[17]Textile	40.3%	49.3%	44.6%	49.1%	35.9%	21.8%	32.0%	29.5%
[35]Ordinary machinery	22.8%	28.9%	29.9%	34.8%	31.7%	28.8%	32.5%	29.4%
[19]Leather	31.3%	31.6%	28.6%	28.6%	23.8%	22.7%	21.7%	29.2%
[09]Nonferrous mining	38.9%	47.1%	31.6%	47.4%	33.3%	15.8%	25.0%	28.6%
[34]Metal products	31.9%	38.9%	44.1%	48.4%	42.9%	35.6%	29.2%	28.4%
[13]Food processing	33.3%	48.6%	47.7%	59.1%	48.1%	28.0%	28.2%	27.9%
[14]Food Production	32.4%	36.6%	40.5%	39.1%	27.1%	24.5%	30.4%	27.7%
[12]Timber logging	15.8%	25.0%	36.4%	30.4%	31.8%	34.8%	31.8%	26.1%
[15]Beverage	24.7%	25.3%	22.2%	28.4%	25.2%	22.5%	24.5%	25.4%
[30]Plastic	35.5%	31.6%	32.6%	37.0%	29.2%	26.5%	23.6%	24.6%
[22]Papermaking	24.5%	26.2%	36.1%	43.8%	33.8%	26.4%	33.1%	24.0%
[37]Transport equipment	24.9%	24.6%	27.4%	29.4%	29.6%	29.2%	24.5%	23.8%
[29]Rubber	30.6%	25.6%	20.8%	25.5%	37.3%	36.7%	28.8%	21.6%
[43]Other manufacturing	22.2%	27.3%	27.3%	33.3%	33.3%	27.3%	23.1%	21.4%
[18]Garments	17.6%	21.7%	29.2%	29.6%	20.7%	15.2%	23.7%	20.5%
[40]Electric equipment	22.1%	25.0%	28.1%	31.3%	26.8%	21.5%	28.4%	19.9%
[33]Pressing nonferrous	18.9%	34.7%	30.2%	51.5%	32.9%	15.1%	21.4%	19.8%
[44]Electric power	28.0%	12.3%	21.1%	22.8%	26.2%	20.5%	21.6%	19.6%
[41]Electronic & telecom	21.4%	24.6%	26.6%	26.2%	21.5%	12.2%	16.1%	17.2%
[21]Furniture	25.0%	33.3%	40.0%	20.0%	20.0%	20.0%	33.3%	16.7%
[27]Medical	20.3%	23.6%	29.3%	25.3%	15.5%	13.3%	14.0%	15.0%
[23]Printing	21.4%	17.6%	25.0%	23.8%	18.2%	13.0%	14.8%	14.8%
[16]Tobacco	7.0%	7.9%	8.5%	8.3%	7.0%	10.8%	22.9%	13.0%
[24]Cultural	16.7%	12.5%	12.5%	22.2%	11.1%	11.1%	12.5%	11.1%
[06]Coal mining	22.5%	22.3%	18.5%	43.4%	48.1%	37.3%	30.9%	10.7%
[07]Petroleum extract	18.5%	25.5%	3.7%	12.9%	4.4%	1.3%	2.0%	5.9%
[32]Pressing ferrous	13.6%	17.1%	17.5%	16.3%	18.4%	10.1%	10.3%	5.6%
Total	24.1%	27.1%	27.8%	34.3%	29.6%	23.9%	26.1%	22.9%

Table 13 Amount of NPD Estimated from Imputed Profitability by Region: 1995-2002 (RMB billion, sorted by NPD in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002
[31]Shanghai	70	94	95	98	92	78	69	81
[44]Guangdong	64	90	113	131	106	90	86	80
[41]Henan	23	39	37	63	61	64	69	72
[23]Heilongjiang	60	58	56	69	71	62	56	58
[21]Liaoning	105	117	115	110	87	63	75	57
[50]Sichuan+Chongqing	71	71	109	88	127	124	104	57
[12]Tianjin	52	32	38	61	53	24	39	56
[42]Hubei	27	53	39	36	34	36	35	46
[13]Hebei	33	45	41	42	47	45	49	45
[37]Shandong	47	48	50	64	69	58	44	45
[11]Beijing	27	45	67	99	68	64	55	42
[22]Jilin	36	35	38	39	35	32	39	41
[32]Jiangsu	39	49	57	57	59	51	49	40
[61]Shaanxi	37	49	49	46	48	38	46	38
[14]Shanxi	24	33	29	50	44	33	24	35
[54]Tibet+Qinghai+Ningxia	12	18	23	18	14	11	11	34
[43]Hunan	29	28	33	37	35	34	30	32
[52]Guizhou	16	15	15	28	25	28	26	31
[34]Anhui	26	27	26	35	31	44	14	23
[45]Guangxi	18	18	23	20	21	17	16	22
[15]Inner Mongolia	17	16	14	27	46	25	34	21
[53]Yunnan	9	11	20	24	23	17	20	21
[35]Fujian	7	10	11	11	6	8	34	20
[62]Gansu	12	22	29	30	28	26	15	15
[36]Jiangxi	20	26	29	30	32	19	18	12
[33]Zhejiang	19	25	24	37	25	18	17	11
[65]Xinjiang	9	13	14	16	21	17	15	11
[46]Hainan	4	7	9	5	8	2	4	3
Total	913	1,094	1,203	1,371	1,316	1,128	1,093	1,049

Table 14 NPD Ratios Estimated from Imputed Profitability by Region: 1995-2002 (%, sorted by NPD ratio in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002
[54]Tibet+Qinghai+Ningxia	35.3%	52.9%	53.5%	31.6%	24.6%	17.7%	20.0%	42.5%
[52]Guizhou	36.4%	37.5%	31.9%	47.5%	39.7%	37.8%	36.1%	40.3%
[12]Tianjin	48.1%	29.4%	32.2%	39.1%	34.2%	16.6%	25.5%	32.0%
[23]Heilongjiang	40.0%	38.9%	33.7%	36.3%	38.8%	32.6%	29.5%	29.7%
[41]Henan	17.3%	25.0%	22.3%	30.9%	29.0%	29.2%	29.5%	28.3%
[14]Shanxi	30.4%	37.1%	29.0%	38.5%	34.1%	24.4%	19.0%	26.5%
[11]Beijing	27.6%	39.8%	51.1%	59.6%	44.2%	40.8%	29.6%	24.9%
[45]Guangxi	30.5%	29.5%	32.9%	24.7%	24.7%	18.9%	18.0%	24.4%
[61]Shaanxi	47.4%	55.7%	50.0%	45.1%	35.8%	28.6%	32.4%	24.2%
[15]Inner Mongolia	33.3%	28.6%	22.2%	38.6%	59.0%	34.7%	41.0%	24.1%
[22]Jilin	31.3%	25.5%	24.8%	25.2%	22.0%	18.8%	23.9%	23.7%
[31]Shanghai	30.3%	34.3%	29.4%	29.1%	26.5%	23.4%	19.8%	21.6%
[43]Hunan	36.7%	32.6%	33.3%	33.0%	29.4%	27.4%	21.3%	21.5%
[46]Hainan	33.3%	43.8%	50.0%	25.0%	34.8%	10.5%	25.0%	18.8%
[53]Yunnan	15.5%	17.5%	29.4%	32.4%	30.3%	22.7%	19.2%	18.4%
[42]Hubei	20.0%	32.3%	21.4%	16.7%	15.5%	15.5%	15.3%	18.2%
[13]Hebei	23.1%	27.1%	22.2%	21.1%	22.1%	20.0%	19.7%	17.6%
[50]Sichuan+Chongqing	38.8%	35.7%	46.8%	36.7%	39.8%	42.0%	34.3%	17.5%
[21]Liaoning	35.8%	37.7%	33.3%	30.5%	27.2%	19.5%	22.3%	16.1%
[34]Anhui	32.1%	29.7%	24.1%	32.4%	27.4%	33.8%	10.9%	16.0%
[62]Gansu	22.2%	37.3%	37.2%	32.6%	33.3%	31.0%	16.9%	16.0%
[44]Guangdong	21.4%	25.9%	27.3%	30.0%	24.4%	19.3%	16.9%	14.3%
[65]Xinjiang	15.8%	19.1%	18.9%	20.3%	26.3%	21.3%	18.5%	13.9%
[36]Jiangxi	34.5%	38.2%	40.3%	38.5%	36.8%	21.3%	20.0%	13.6%
[35]Fujian	14.9%	18.2%	20.0%	20.0%	9.7%	12.1%	25.2%	13.3%
[37]Shandong	17.9%	16.3%	14.8%	18.1%	16.6%	13.3%	9.7%	9.2%
[32]Jiangsu	17.3%	18.2%	19.1%	17.8%	18.0%	13.8%	10.7%	8.0%
[33]Zhejiang	15.8%	17.5%	15.7%	23.6%	15.6%	10.8%	10.0%	5.9%
Total	27.8%	29.5%	28.7%	29.8%	27.4%	22.7%	20.5%	18.3%

Table 15 Amount of NPD Estimated from Reported Profitability by Region: 1995-2002 (RMB billion, sorted by NPD in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002
[21]Liaoning	89	87	95	117	77	46	94	114
[44]Guangdong	68	121	137	170	151	118	131	111
[50]Sichuan+Chongqing	61	60	71	94	129	101	91	88
[32]Jiangsu	41	54	63	83	74	64	96	73
[31]Shanghai	34	50	63	82	72	47	63	69
[12]Tianjin	28	33	41	66	55	57	55	67
[37]Shandong	46	45	51	68	67	56	72	63
[22]Jilin	35	42	64	78	57	46	52	62
[42]Hubei	33	54	60	77	73	79	65	62
[23]Heilongjiang	47	59	58	104	69	74	74	56
[43]Hunan	24	31	45	54	37	48	41	55
[13]Hebei	28	30	40	54	47	48	64	53
[61]Shaanxi	31	34	38	49	53	46	48	45
[41]Henan	34	44	45	51	51	55	69	43
[62]Gansu	16	16	17	41	36	11	31	40
[35]Fujian	9	10	8	11	9	10	38	36
[36]Jiangxi	19	24	26	35	36	32	32	31
[54]Tibet+Qinghai+Ningxia	14	17	21	26	21	25	10	30
[45]Guangxi	14	27	31	35	30	23	25	29
[14]Shanxi	15	20	24	54	53	38	35	28
[15]Inner Mongolia	18	16	16	30	36	24	30	28
[34]Anhui	21	22	25	52	49	25	33	26
[53]Yunnan	8	9	15	21	25	19	24	26
[65]Xinjiang	10	36	16	21	25	22	28	26
[11]Beijing	11	18	37	40	39	37	51	22
[33]Zhejiang	19	22	28	38	26	20	23	14
[52]Guizhou	15	13	20	18	16	11	11	11
[46]Hainan	4	8	11	8	12	4	6	4
Total	792	1,002	1,166	1,577	1,425	1,186	1,392	1,312

Table 16 NPD Ratios Estimated from Reported Profitability by Region: 1995-2002 (%, sorted by NPD ratio in 2002)

	1995	1996	1997	1998	1999	2000	2001	2002
[62]Gansu	29.1%	27.1%	21.5%	44.6%	42.9%	13.1%	35.2%	43.0%
[12]Tianjin	25.9%	30.0%	34.5%	42.6%	35.5%	39.6%	35.9%	38.5%
[54]Tibet+Qinghai+Ningxia	41.2%	50.0%	48.8%	45.6%	36.8%	39.7%	18.2%	38.0%
[43]Hunan	30.8%	36.0%	45.5%	48.6%	31.1%	38.7%	29.1%	37.2%
[22]Jilin	30.2%	30.7%	41.8%	50.3%	35.8%	27.1%	31.9%	35.8%
[36]Jiangxi	32.8%	35.3%	36.1%	44.3%	41.4%	36.0%	35.6%	35.2%
[65]Xinjiang	17.5%	52.2%	21.3%	26.9%	31.6%	27.5%	35.0%	32.9%
[45]Guangxi	23.7%	43.5%	44.3%	43.2%	35.3%	25.3%	27.8%	32.2%
[21]Liaoning	30.4%	28.0%	27.5%	32.3%	24.1%	14.3%	28.1%	32.2%
[15]Inner Mongolia	34.6%	28.6%	25.4%	42.9%	45.6%	32.9%	36.1%	31.8%
[61]Shaanxi	39.7%	38.6%	38.4%	48.5%	39.6%	34.6%	33.8%	28.8%
[23]Heilongjiang	31.3%	39.6%	34.9%	54.7%	37.7%	38.7%	38.9%	28.6%
[50]Sichuan+Chongqing	33.3%	30.2%	30.5%	39.0%	40.4%	34.2%	30.0%	27.1%
[46]Hainan	36.4%	53.3%	61.1%	40.0%	50.0%	20.0%	37.5%	25.0%
[42]Hubei	24.4%	32.9%	33.0%	35.5%	33.5%	34.1%	28.5%	24.5%
[35]Fujian	19.1%	18.2%	14.8%	20.4%	14.5%	15.2%	28.1%	24.0%
[53]Yunnan	13.8%	14.1%	22.1%	28.0%	33.3%	25.3%	23.3%	22.8%
[14]Shanxi	19.0%	22.7%	24.0%	41.9%	41.4%	27.9%	27.8%	21.2%
[13]Hebei	19.6%	18.1%	21.7%	27.1%	22.1%	21.4%	25.8%	20.6%
[44]Guangdong	22.8%	34.8%	33.1%	39.0%	34.8%	25.2%	25.7%	19.9%
[31]Shanghai	14.7%	18.2%	19.5%	24.4%	20.7%	14.1%	18.1%	18.4%
[34]Anhui	25.9%	24.2%	23.1%	48.1%	43.0%	19.2%	25.8%	17.9%
[41]Henan	25.6%	28.0%	27.3%	25.1%	24.3%	25.1%	29.5%	16.9%
[32]Jiangsu	18.1%	20.1%	21.1%	25.9%	22.6%	17.3%	21.1%	14.5%
[52]Guizhou	34.1%	32.5%	41.7%	30.5%	25.0%	14.9%	15.3%	14.3%
[11]Beijing	11.2%	16.1%	28.2%	24.1%	25.3%	23.4%	27.3%	13.0%
[37]Shandong	17.6%	15.3%	15.2%	19.2%	16.1%	12.8%	15.8%	12.9%
[33]Zhejiang	15.7%	15.4%	18.3%	24.2%	16.4%	12.0%	13.5%	7.5%
Total	24.1%	27.0%	27.8%	34.2%	29.7%	23.9%	26.1%	22.9%

Table 17 Regression Summarizing Trend and Cross-Ownership Patterns of NPD Raito

Dependent Variable: NPD Ratio	NPD Ratios estimated from Imputed Profitability as shown in Table 7		NPD Ratio Estimated from Reported Profitability as shown in Table 8	
Independent Variables:	**Co-efficient**	t-statistics	**Co-efficient**	t-statistics
Intercept	**2,996.8**	10.9	**1,092.6**	2.0
Year	-1.5	-10.7	-0.5	-1.9
Ownership = private enterprises	**-21.3**	-18.2	**-13.9**	-5.9
Ownership = Collective Enterprises	**-18.2**	-15.5	**-10.7**	-4.6
Ownership = mixed ownership domestic enterprises	**-18.3**	-15.7	**-16.3**	-7.0
Ownership = foreign invested enterprises	**-13.3**	-11.4	**-5.1**	-2.2
Ownership = enterprises with investment from Hong Kong, Macau, and Taiwan	**-13.6**	-11.7	**-6.9**	-3.0
Ownership = the Whole Sample	-12.4	-10.6	-11.0	-4.7
Ownership = state-owned enterprises	**0** .		**0** .	
Number of observations	**56**		**56**	
Adjusted R Square	**0.906**		**0.538**	

a. Regression equation: NPD Ratio = f(year, ownership).

b. Weighted Least Squares Regression with 100 weight to 2002, 95 to 2001, 90 to 2000, 85 to 1999, 80 to 1998, 75 to 1997, 70 to 1996 and 65 to 1995.

Table 18 Regression Summarizing Trend and Cross-Industry Patterns of NPD Ratios

Dependent Variable: NPD Ratio	NPD Ratio Based on Imputed Profitability as Shown in Table 9		NPD Ratio Based on Reported Profitability as Shown in Table 10	
Independent Variables:	**Co-efficient**	t-statistics	**Co-efficient**	t-statistics
Intercept	**3,571.4**	15.7	**1,754.7**	6.4
Year	**-1.8**	**-15.6**	**-0.9**	**-6.3**
[07]Petroleum extract	**-25.3**	-11.1	**-17.3**	-6.3
[44]Electric power	**-13.9**	-6.1	**-13.1**	-4.8
[16]Tobacco	**-26.6**	-11.7	**-13.0**	-4.7
[24]Cultural	**-7.1**	-3.1	**-8.5**	-3.1
[27]Medical	**-15.6**	-6.9	**-7.8**	-2.9
[23]Printing	**-1.2**	-0.5	**-7.5**	-2.7
[18]Garments	**-9.5**	-4.2	**-5.3**	-1.9
[21]Furniture	**-7.3**	-3.2	**-4.6**	-1.7
[43]Other manufacturing	**-8.2**	-3.6	**-4.0**	-1.5
Industry = the Whole Sample	**-8.4**	-3.7	**-4.0**	-1.5
[26]Raw chemicals	**-8.4**	-3.7	**-3.0**	-1.1
[10]Nonmetal mining	**-3.2**	-1.4	**-2.1**	-0.8
[15]Beverage	**-18.0**	-7.9	**-1.4**	-0.5
[40]Electric equipment	**-5.4**	-2.4	**-1.0**	-0.4
[41]Electronic & telecom	**1.0**	0.4	**-0.6**	-0.2
[25]Petroleum processing	**-15.5**	-6.8	**-0.5**	-0.2
[22]Papermaking	**-11.3**	-5.0	**-0.1**	0.0
[46]Tap water	**0.0**		**0.0**	
[19]Leather	**-5.9**	-2.6	**0.0**	0.0
[06]Coal mining	**8.6**	3.8	**0.2**	0.1
[33]Pressing nonferrous	**-6.9**	-3.0	**0.6**	0.2
[09]Nonferrous mining	**7.3**	3.2	**0.7**	0.3
[08]Ferrous mining	**-1.3**	-0.6	**1.4**	0.5
[29]Rubber	**-7.2**	-3.2	**1.8**	0.6
[37]Transport equipment	**-0.3**	-0.1	**2.1**	0.8
[35]Ordinary machinery	**1.0**	0.4	**3.3**	1.2
[30]Plastic	**-4.9**	-2.1	**3.8**	1.4
[34]Metal products	**-1.2**	-0.5	**4.2**	1.5
[32]Pressing ferrous	**-4.9**	-2.1	**4.4**	1.6
[31]Nonmetal products	**-6.8**	-3.0	**4.6**	1.7
[28]Chemical fiber	**-3.5**	-1.5	**4.6**	1.7
[12]Timber logging	**4.7**	2.1	**4.6**	1.7
[14]Food Production	**-4.8**	-2.1	**5.1**	1.8
[17]Textile	**-5.0**	-2.2	**5.4**	2.0
[42]Instruments	**9.5**	4.2	**5.5**	2.0
[36]Special equipment	**6.9**	3.0	**6.9**	2.5
[13]Food processing	**-4.9**	-2.2	**8.7**	3.1
[20]Timber	**2.6**	1.1	**8.7**	3.2
[45]Gas production	**35.0**	15.4	**22.1**	8.0
Number of observations	**312**		**312**	
Adjusted R Square	**0.850**		**0.610**	

a. Regression equation: NPD Ratio = f(year, industry).

b. Weighted Least Squares Regression with 100 weight to 2002, 95 to 2001, 90 to 2000, 85 to 1999, 80 to 1998, 75 to 1997, 70 to 1996 and 65 to 1995.

Table 19 Regression Summarizing Trend and Cross-Region Patterns of NPD Ratios

Dependent Variable: NPD Ratio	NPD Ratio Based on Imputed Profitability and Shown in Table 11		NPD Ratio Based on Reported Profitability and shown in Table 12	
Independent Variables:	**Co-efficient**	t-statistics	**Co-efficient**	t-statistics
Intercept	**4,537.3**	16.1	**2,022.1**	5.5
Year	**-2.2**	**-16.0**	**-1.0**	**-5.4**
[37]Shandong	**-24.9**	-10.2	**-28.2**	-8.9
[33]Zhejiang	**-24.1**	-9.9	**-25.1**	-8.0
[35]Fujian	**-18.5**	-7.6	**-22.3**	-7.0
[32]Jiangsu	**-24.0**	-9.9	**-21.1**	-6.7
[11]Beijing	**5.4**	2.2	**-20.6**	-6.5
[31]Shanghai	**-10.8**	-4.4	**-19.3**	-6.1
Region = the Whole Sample	**-17.6**	-7.2	**-19.3**	-6.1
[13]Hebei	**-15.7**	-6.5	**-18.8**	-5.9
[15]Inner Mongolia	**-16.5**	-6.8	**-14.4**	-4.6
[41]Henan	**-17.6**	-7.2	**-14.0**	-4.4
[14]Shanxi	**-7.8**	-3.2	**-12.5**	-3.9
[53]Yunnan	**-6.0**	-2.5	**-10.4**	-3.3
[34]Anhui	**-19.1**	-7.8	**-9.5**	-3.0
[44]Guangdong	**-13.2**	-5.4	**-9.3**	-2.9
[50]Sichuan+Chongqing	**-7.3**	-3.0	**-9.1**	-2.9
[42]Hubei	**-14.8**	-6.1	**-7.2**	-2.3
[21]Liaoning	**-4.3**	-1.8	**-6.1**	-1.9
[12]Tianjin	**-4.0**	-1.7	**-5.0**	-1.6
[54]Tibet+Qinghai+Ningxia	**-4.5**	-1.9	**-4.9**	-1.6
[22]Jilin	**-4.3**	-1.8	**-4.0**	-1.3
[23]Heilongjiang	**-4.9**	-2.0	**-3.5**	-1.1
[45]Guangxi	**-14.0**	-5.8	**-3.3**	-1.0
[36]Jiangxi	**-8.1**	-3.3	**-2.7**	-0.8
[46]Hainan	**-7.7**	-3.2	**-2.1**	-0.7
[62]Gansu	**-3.4**	-1.4	**-2.1**	-0.7
[52]Guizhou	**2.4**	1.0	**-1.5**	-0.5
[43]Hunan	**-3.7**	-1.5	**-1.0**	-0.3
[61]Shaanxi	**1.4**	0.6	**-0.6**	-0.2
[65]Xinjiang	**0.0**	.	**0.0**	.
Number of observations	**232**		**232**	
Adjusted R Square	**0.790**		**0.629**	

a. Regression equation: NPD Ratio = f(year, region).

b. Weighted Least Squares Regression with 100 weight to 2002, 95 to 2001, 90 to 2000, 85 to 1999, 80 to 1998, 75 to 1997, 70 to 1996 and 65 to 1995.

Figure 1. Predicting NPD Ratios: Imputed Profitability and Weighted Regression

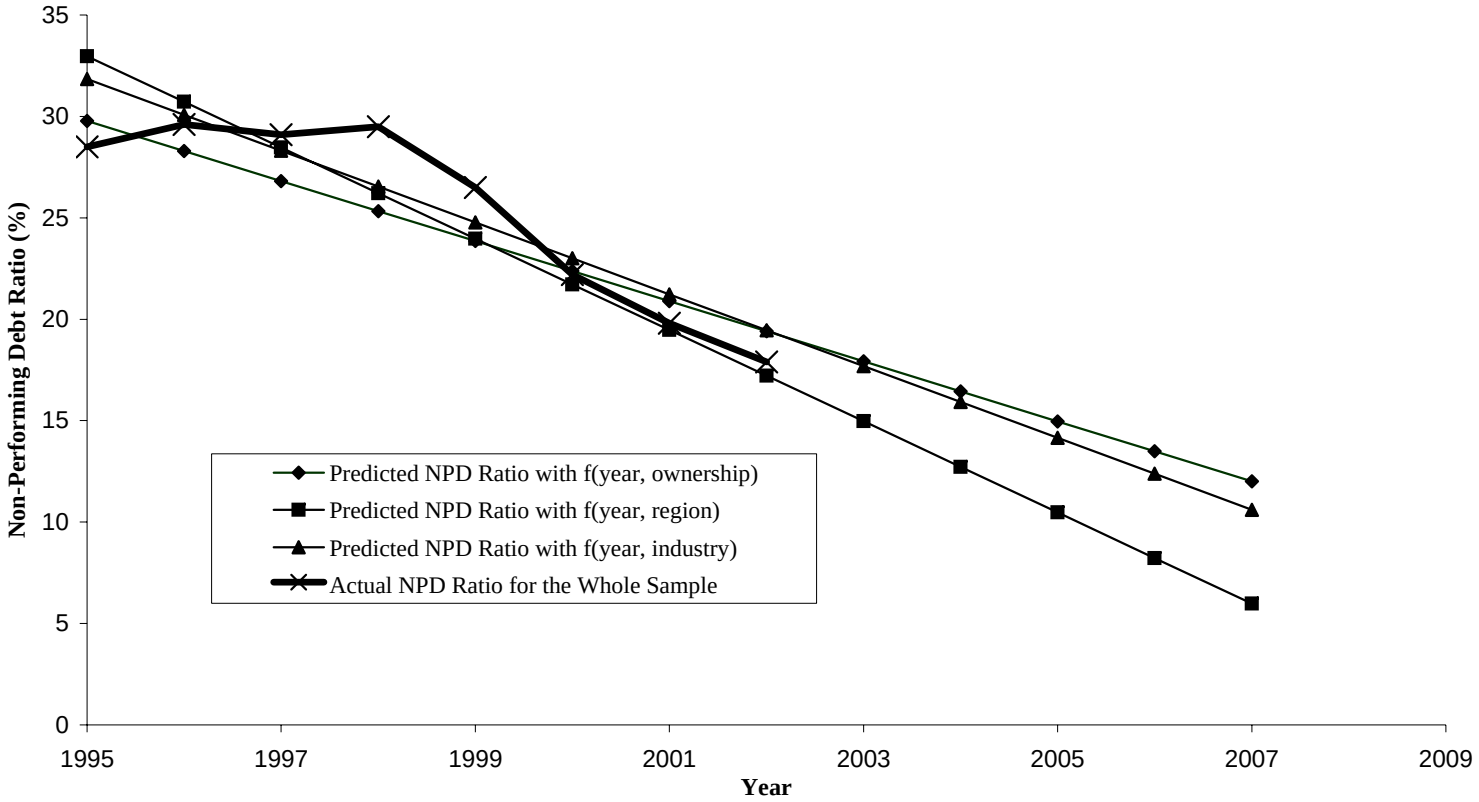

Figure 2. Predicting NPD Ratios: Reported Profitability and Weighted Regression

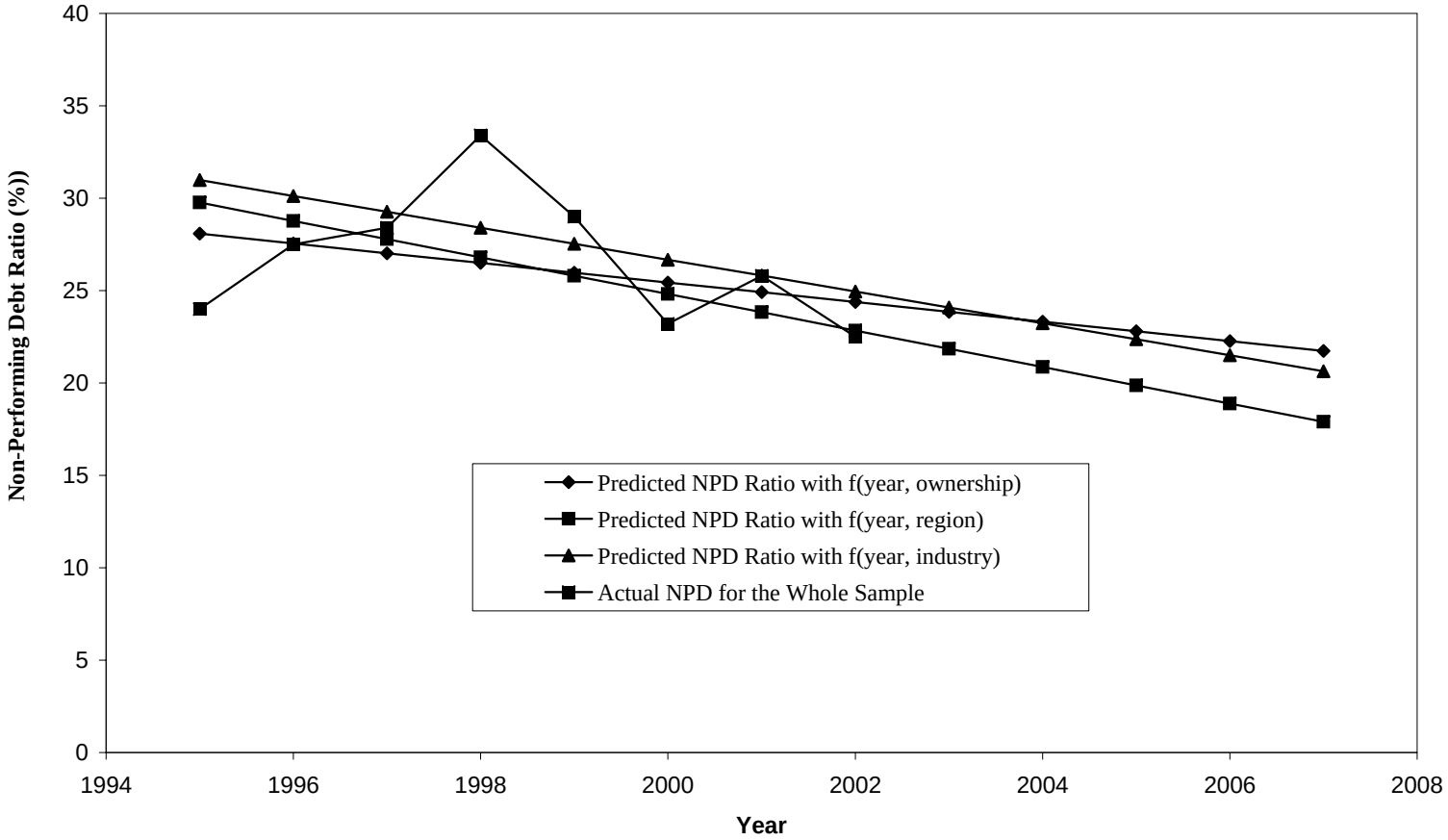

Table 20 Scenarios for NPD Ratio of the Whole Sample by the Year 2007

	Alternative Assumptions about Distribution of Total Liabilities		Pessimistic Case: Two Year Slower than Predicted by the Trend	Likely Case: As Predicted by the Trend	Optimistic Case: Two Year Faster than Predicted by the Trend
Alternative Assumptions about the Value of NPD Ratios	private		2.9%	3.7%	4.5%
	collective		2.6%	1.8%	1.0%
	mixed		38.0%	44.2%	50.4%
	foreign		13.5%	15.3%	17.1%
	HK-M-Taiwan		7.7%	8.3%	8.9%
	state-owned		36.2%	28.2%	20.2%
Optimistic Case: 2002 NPD Ratios Estimated from Imputed Profitability (%)	private	7.4%	**16.8%**	**15.8%**	**14.7%**
	collective	10.0%			
	mixed	10.8%			
	foreign	15.2%			
	HK-M-Taiwan	12.6%			
	state-owned	25.4%			
	weighted average for all	18.4%			
Likely Case: 2002 Average NPD Ratio (average over NPD statistics from both imputed and reported profitability)	private	11.6%	**19.6%**	**18.9%**	**18.3%**
	collective	14.6%			
	mixed	15.5%			
	foreign	18.8%			
	HK-M-Taiwan	15.4%			
	state-owned	25.6%			
	weighted average for all	20.6%			
Pesimistic Case: 2002 NPD Ratio Estimated from Reported Profitability (%)	private	15.8%	**22.4%**	**22.1%**	**21.8%**
	collective	19.2%			
	mixed	20.2%			
	foreign	22.4%			
	HK-M-Taiwan	18.2%			
	state-owned	25.8%			
	weighted average for all	22.9%			

Table 21 Summary Statistics for Key Variables in Profitability Regressions: 1995-2002

		1995	1996	1997	1998	1999	2000	2001	2002	Total
Number of Observations	Return on TA with Reported Profit	22,543	22,974	22,957	22,293	21,463	20,738	21,898	22,220	177,086
	Return on TA with Imputed Profit	22,393	22,815	22,813	22,129	21,296	20,555	21,730	21,999	175,730
	Capital-Labor Ratio (RMB Thousand per Person)	22,295	22,724	22,708	22,046	21,240	20,505	21,641	21,972	175,131
	Asset-Liability Ratio	22,479	22,904	22,848	22,187	21,354	20,633	21,792	22,069	176,266
	Employment	22,543	22,974	22,957	22,293	21,463	20,738	21,898	22,220	177,086
	Market Share (% of 3-digit industry sales total)	22,543	22,974	22,957	22,293	21,463	20,738	21,898	22,220	177,086
	Industry Concentration (% by top 4 enterprises in 2-digit industry sales total)	22,543	22,974	22,957	22,293	21,463	20,738	21,898	22,220	177,086
Median	Return on TA with Reported Profit	0.27%	0.14%	0.09%	0.04%	0.18%	0.38%	0.53%	0.82%	0.23%
	Return on TA with Imputed Profit	3.42%	3.56%	3.40%	3.22%	4.51%	5.38%	6.59%	7.31%	0.0458
	Capital-Labor Ratio (RMB Thousand per Person)	27.4	36.5	41.6	49.4	57.9	63.6	70.0	75.5	49.2
	Asset-Liability Ratio	0.713	0.711	0.711	0.711	0.690	0.682	0.651	0.635	0.690
	Employment	877	823	793	715	654	620	560	520	701
	Market Share (% of 3-digit industry sales total)	0.207	0.192	0.182	0.185	0.199	0.201	0.192	0.185	0.193
	Industry Concentration (% by top 4 enterprises in 2-digit industry sales total)	10.4	11.1	11.6	12.1	12.4	13.1	11.7	12.3	11.6
Mean	Return on TA with Reported Profit	0.16%	-0.54%	-0.64%	-0.89%	0.34%	1.29%	1.69%	2.03%	0.41%
	Return on TA with Imputed Profit	5.04%	6.07%	5.74%	5.58%	7.72%	8.91%	10.65%	11.61%	7.63%
	Capital-Labor Ratio (RMB Thousand per Person)	51.4	65.9	74.1	95.0	118.3	130.0	152.4	165.6	105.8
	Asset-Liability Ratio	0.706	0.709	0.711	0.714	0.694	0.687	0.657	0.642	0.690
	Employment	1,696	1,633	1,593	1,502	1,428	1,361	1,237	1,189	1,458
	Market Share (% of 3-digit industry sales total)	0.838	0.831	0.823	0.839	0.867	0.907	0.881	0.869	0.856
	Industry Concentration (% by top 4 enterprises in 2-digit industry sales total)	11.4	12.0	13.0	13.4	13.5	13.8	13.9	14.1	13.1
Std. Deviation	Return on TA with Reported Profit	8.30%	9.24%	8.36%	8.53%	8.42%	8.46%	9.99%	8.97%	8.86%
	Return on TA with Imputed Profit	13.73%	16.25%	15.16%	14.27%	15.27%	16.06%	17.99%	19.51%	16.29%
	Capital-Labor Ratio (RMB Thousand per Person)	123.6	162.6	154.9	242.8	358.3	346.6	430.6	447.8	308.4
	Asset-Liability Ratio	0.23828	0.25137	0.26388	0.28025	0.27605	0.28080	0.28693	0.28883	0.27218
	Employment	5,215	4,908	4,719	4,482	4,401	3,947	3,599	3,560	4,404
	Market Share (% of 3-digit industry sales total)	3.2	3.2	3.2	3.1	3.1	3.4	3.4	3.4	3.3
	Industry Concentration (% by top 4 enterprises in 2-digit industry sales total)	7.5	7.5	7.6	7.1	6.9	7.1	6.2	6.1	7.1

Table 22 Median of Key Variables for Profitability Regressions by Owership: 1995-2002

		1995	1996	1997	1998	1999	2000	2001	2002	Total
Return on TA with Reported Profit	private	1.78%	4.84%	0.36%	0.03%	1.00%	1.03%	1.38%	1.72%	1.34%
	collective	0.69%	0.50%	0.34%	0.28%	0.51%	0.67%	0.72%	0.91%	0.52%
	mixed	2.07%	1.46%	0.89%	0.52%	0.88%	1.10%	1.24%	1.33%	1.11%
	foreign	1.70%	0.83%	0.77%	0.54%	1.65%	2.93%	2.99%	3.61%	2.08%
	HK-M-Taiwan	1.31%	1.01%	0.89%	0.43%	0.87%	1.35%	1.55%	1.95%	1.26%
	state-owned	0.14%	0.05%	0.02%	0.00%	0.03%	0.09%	0.06%	0.09%	0.05%
	Total	0.27%	0.14%	0.09%	0.04%	0.18%	0.38%	0.53%	0.82%	0.23%
Return on TA with Imputed Profit	private	11.25%	17.44%	9.65%	7.39%	12.01%	11.34%	12.93%	13.98%	12.67%
	collective	7.44%	8.24%	7.17%	7.52%	8.60%	9.46%	10.57%	10.97%	8.41%
	mixed	7.13%	6.78%	6.36%	6.06%	7.11%	7.83%	8.83%	9.43%	7.85%
	foreign	5.80%	6.31%	6.09%	5.49%	8.15%	9.93%	11.01%	11.24%	8.66%
	HK-M-Taiwan	6.57%	6.75%	6.23%	5.41%	6.99%	8.19%	8.86%	9.69%	7.61%
	state-owned	2.14%	2.01%	1.86%	1.34%	2.18%	2.53%	2.80%	2.87%	2.14%
	Total	3.42%	3.56%	3.40%	3.22%	4.51%	5.38%	6.59%	7.31%	4.58%
Capital-Labor Ratio (RMB Thousand per Person)	private	26	54	49	48	52	51	52	56	52
	collective	25	30	33	40	44	45	49	52	37
	mixed	33	39	42	46	52	57	62	67	54
	foreign	71	91	114	134	144	145	149	145	129
	HK-M-Taiwan	63	79	82	98	109	108	107	103	96
	state-owned	26	35	40	47	55	62	68	74	44
	Total	27	36	42	49	58	64	70	75	49
Liability to Total Assets Ratio	private	0.531	0.653	0.722	0.724	0.686	0.693	0.667	0.654	0.671
	collective	0.708	0.718	0.723	0.717	0.707	0.712	0.690	0.686	0.711
	mixed	0.646	0.636	0.650	0.672	0.664	0.660	0.653	0.644	0.654
	foreign	0.574	0.553	0.554	0.538	0.534	0.516	0.479	0.472	0.517
	HK-M-Taiwan	0.638	0.622	0.625	0.614	0.603	0.589	0.544	0.520	0.583
	state-owned	0.731	0.733	0.737	0.747	0.732	0.732	0.718	0.704	0.732
	Total	0.713	0.711	0.711	0.711	0.690	0.682	0.651	0.635	0.690
Employment	private	500	453	718	429	391	394	383	367	384
	collective	643	599	565	511	490	461	437	408	528
	mixed	1,010	972	897	820	748	711	645	606	725
	foreign	408	387	376	350	321	332	320	320	341
	HK-M-Taiwan	446	390	387	360	364	360	343	340	363
	state-owned	1,014	975	946	873	829	793	753	729	894
	Total	877	823	793	715	654	620	560	520	701
Market Share (% of 3-digit industry sales total)	private	0.159	0.285	0.283	0.118	0.147	0.148	0.148	0.141	0.146
	collective	0.206	0.190	0.175	0.193	0.192	0.185	0.161	0.146	0.185
	mixed	0.361	0.310	0.253	0.212	0.221	0.213	0.198	0.183	0.214
	foreign	0.450	0.402	0.399	0.419	0.406	0.396	0.355	0.318	0.381
	HK-M-Taiwan	0.339	0.331	0.341	0.341	0.329	0.343	0.312	0.277	0.318
	state-owned	0.185	0.169	0.156	0.149	0.158	0.155	0.145	0.143	0.160
	Total	0.207	0.192	0.182	0.185	0.199	0.201	0.192	0.185	0.193
Industry Concentration (% by top 4 enterprises in 2-digit industry sales total)	private	12.6	9.5	8.6	10.8	11.7	11.0	11.6	11.1	11.6
	collective	9.9	8.5	9.7	10.8	10.6	11.3	11.6	11.1	10.5
	mixed	10.5	11.3	11.6	11.7	12.4	12.9	11.7	12.3	11.8
	foreign	10.5	11.3	13.3	12.5	13.8	13.1	14.0	12.3	12.4
	HK-M-Taiwan	9.9	10.6	11.6	12.1	12.4	12.1	13.1	12.3	11.7
	state-owned	10.4	11.1	11.6	12.1	12.4	13.4	13.1	12.5	11.7
	Total	10.4	11.1	11.6	12.1	12.4	13.1	11.7	12.3	11.6

Table 23 Profitability Regressions

Dependent Variable	Imputed profitability (1=profit; 0=loss)			Reported profitability (1=profit; 0=loss)			Return on total assets by imputed profitability		Return on total assets by reported profitability	
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	SE	B	SE
Constant	2.174 ***	0.120	8.797	2.430 ***	0.118	11.353	0.142 ***	0.008	0.014 ***	0.004
Log(capital-labor ratio)	0.005	0.007	1.005	-0.063 ***	0.007	0.939	-0.012 ***	0.000	0.001 ***	0.000
Liability-Assets ratio	-1.730 ***	0.023	0.177	-3.156 ***	0.026	0.043	-0.116 ***	0.001	-0.115 ***	0.001
Log(employees)	0.029 ***	0.007	1.029	0.080 ***	0.007	1.084	-0.003 ***	0.000	0.003 ***	0.000
Market share	0.109 ***	0.005	1.115	0.175 ***	0.006	1.191	0.004 ***	0.000	0.002 ***	0.000
Industry concentration	-0.001	0.003	0.999	0.005	0.003	1.005	-0.001 ***	0.000	0.000 ***	0.000
private							0.106 ***	0.003	0.029 ***	0.001
collective	-0.450 ***	0.059	0.637	-0.215 ***	0.049	0.806	0.070 ***	0.001	0.022 ***	0.001
mixed	-0.534 ***	0.059	0.586	-0.094 ***	0.048	0.910	0.047 ***	0.001	0.017 ***	0.001
foreign	-0.763 ***	0.061	0.466	-0.940 ***	0.051	0.391	0.065 ***	0.002	0.017 ***	0.001
HK-Macau-Taiwan	-0.757 ***	0.061	0.469	-0.658 ***	0.051	0.518	0.053 ***	0.002	0.015 ***	0.001
state-owned	-1.235 ***	0.057	0.291	-0.585 ***	0.047	0.557	0	.	0	.
1995	-0.390 ***	0.025	0.677	0.061 ***	0.025	1.062	-0.049 ***	0.002	-0.005 ***	0.001
1996	-0.397 ***	0.024	0.673	-0.118 ***	0.024	0.889	-0.038 ***	0.001	-0.012 ***	0.001
1997	-0.394 ***	0.024	0.674	-0.236 ***	0.024	0.790	-0.040 ***	0.001	-0.014 ***	0.001
1998	-0.412 ***	0.024	0.662	-0.393 ***	0.023	0.675	-0.041 ***	0.001	-0.016 ***	0.001
1999	-0.231 ***	0.024	0.794	-0.111 ***	0.024	0.895	-0.027 ***	0.001	-0.008 ***	0.001
2000	-0.093 ***	0.025	0.911	0.225 ***	0.025	1.252	-0.018 ***	0.001	-0.001 ***	0.001
2001	0.016	0.025	1.016	-0.005	0.024	0.995	-0.007 ***	0.001	-0.001 ***	0.001
2002							0	.	0	.
Regression method	Logistic			Logistic			General Linear Model		General Linear Model	
Nagelkerke R SQUARE	0.189			0.251						
Ajusted R SQUARE							0.181		0.218	
Number of observations	177,086			177,086			172,985		174,317	

a. The sign *** after the coefficient indicate the estimated coefficient is singificant at the level of 1%. Coefficients for Industry and region dummies are omitted in this table but will be used to caculate the pure industry and region profitability index in the next table.

Table 24 Industry-Specific Profitabilty Index for Large and Medium Industrial Enterprises during 1995-2002

	ISPI1	ISPI2	ISPI3	ISPI4	ISPI5	ISPI6
Industry	**Industry-Specific Profitability Index (estimated from reported profitability)**	**Industry-Specific Profitability Index (estimated from imputed profitability)**	**Industry-Specific Profitability Index (estimated from reported return on total assets)**	**Industry-Specific Profitability Index (estimated from imputed return on total assets)**	**(ISPI1 + ISPI2)/2**	**(ISPI3 + ISPI4)/2**
[16]Tobacco	3.196	8.018	1.030	1.301	5.607	1.166
[07]Petroleum extract	1.314	3.714	1.060	1.142	2.514	1.101
[44]Electric power	2.451	1.764	1.019	1.021	2.107	1.020
[15]Beverage	1.548	2.654	1.006	1.065	2.101	1.036
[27]Medical	1.903	2.064	1.021	1.039	1.984	1.030
[22]Papermaking	1.353	1.508	1.007	1.008	1.431	1.008
[26]Raw chemicals	1.510	1.333	1.007	1.001	1.422	1.004
[25]Petroleum processing	0.833	1.783	0.999	1.052	1.308	1.026
[23]Printing	1.628	0.942	1.003	0.974	1.285	0.989
[33]Pressing nonferrous	1.230	1.174	1.002	1.001	1.202	1.002
[13]Food processing	1.095	1.277	0.999	1.039	1.186	1.019
[40]Electric equipment	1.283	1.021	1.004	0.996	1.152	1.000
[41]Electronic & telecom	1.396	0.851	1.008	0.986	1.124	0.997
[18]Garments	1.173	0.960	0.999	1.006	1.066	1.003
[31]Nonmetal products	1.007	1.122	0.993	0.971	1.065	0.982
[12]Timber logging	1.034	1.048	1.005	0.974	1.041	0.990
[37]Transport equipment	1.119	0.943	1.001	0.985	1.031	0.993
[17]Textile	1.044	1.016	0.992	0.978	1.030	0.985
[19]Leather	1.061	0.897	0.995	1.004	0.979	0.999
[14]Food Production	0.935	1.007	0.995	1.005	0.971	1.000
[32]Pressing ferrous	0.858	1.061	0.994	0.998	0.960	0.996
[35]Ordinary machinery	1.088	0.832	0.997	0.961	0.960	0.979
[29]Rubber	0.780	0.984	0.992	0.990	0.882	0.991
[43]Other manufacturing	0.927	0.838	0.996	0.999	0.882	0.998
[30]Plastic	0.913	0.812	0.995	0.967	0.862	0.981
[24]Cultural	0.937	0.777	0.998	0.974	0.857	0.986
[10]Nonmetal mining	0.882	0.829	0.995	0.968	0.856	0.982
[28]Chemical fiber	0.856	0.852	0.996	0.996	0.854	0.996
[34]Metal products	0.883	0.748	0.993	0.972	0.816	0.982
[20]Timber	0.827	0.793	0.992	0.990	0.810	0.991
[36]Special equipment	0.853	0.651	0.995	0.960	0.752	0.978
[09]Nonferrous mining	0.898	0.602	1.010	0.964	0.750	0.987
[21]Furniture	0.768	0.688	0.990	0.977	0.728	0.984
[06]Coal mining	0.797	0.551	0.996	0.953	0.674	0.974
[42]Instruments	0.748	0.554	0.997	0.957	0.651	0.977
[08]Ferrous mining	0.430	0.676	0.991	0.973	0.553	0.982
[46]Tap water	0.454	0.571	0.966	0.942	0.513	0.954
[45]Gas production	0.159	0.132	0.962	0.907	0.146	0.935

a. The indices in this table are derived from the coefficients of industry dummies in the profitability regressions reported in Table 7.3. For easy comparison, each profitability index is normalized by the sample average. Index that is greater than 1 would indicate profitability better than the sample average. The 6 index values are sorted by ISPI5.

Table 25 Region-Specific Profitabilty Index for Large and Medium Industrial Enterprises during 1996-2002

	RSPI1	RSPI2	RSPI3	RSPI4	RSPI5	RSPI6
Region	**Region-Specific Profitability Index (estimated from reported profits)**	**Region-Specific Profitability Index (estimated from imputed profits)**	**Region-Specific Profitability Index (estimated from reported return on total assets)**	**Region-Specific Profitability Index (estimated from imputed return on total assets)**	**(RSPI1 + RSPI2)/2**	**(RSPI3 + RSPI4)/2**
[37]Shandong	2.829	2.105	1.023	1.047	2.467	1.035
[32]Jiangsu	1.532	1.799	1.009	1.040	1.666	1.024
[13]Hebei	1.746	1.445	1.014	1.030	1.595	1.022
[33]Zhejiang	1.622	1.496	1.014	1.005	1.559	1.010
[41]Henan	1.346	1.700	1.009	1.032	1.523	1.021
[34]Anhui	1.035	1.623	1.001	1.030	1.329	1.016
[15]Inner Mongolia	1.103	1.316	1.002	1.014	1.210	1.008
[31]Shanghai	1.432	0.858	1.007	0.989	1.145	0.998
[35]Fujian	1.253	1.011	1.007	1.015	1.132	1.011
[14]Shanxi	1.082	1.028	1.002	1.001	1.055	1.002
[42]Hubei	0.827	1.279	1.004	1.032	1.053	1.018
[45]Guangxi	0.764	1.327	0.996	1.009	1.045	1.003
[36]Jiangxi	0.901	1.140	1.000	1.003	1.021	1.001
[44]Guangdong	0.913	0.969	0.998	1.006	0.941	1.002
[23]Heilongjiang	0.905	0.939	0.998	0.997	0.922	0.997
[50]Sichuan+Chongqing	0.908	0.886	0.993	0.994	0.897	0.993
[11]Beijing	1.341	0.445	0.996	0.961	0.893	0.979
[54]Tibet+Qinghai+Ningxia	0.825	0.833	0.990	0.983	0.829	0.987
[53]Yunnan	0.885	0.764	0.997	0.978	0.824	0.988
[22]Jilin	0.809	0.816	0.994	0.994	0.812	0.994
[12]Tianjin	0.815	0.738	1.004	0.970	0.776	0.987
[46]Hainan	0.721	0.812	0.996	0.975	0.766	0.985
[61]Shaanxi	0.766	0.760	0.992	0.990	0.763	0.991
[43]Hunan	0.660	0.857	0.989	0.989	0.758	0.989
[62]Gansu	0.686	0.794	0.984	0.982	0.740	0.983
[52]Guizhou	0.727	0.735	0.994	0.986	0.731	0.990
[21]Liaoning	0.774	0.662	0.993	0.974	0.718	0.983
[65]Xinjiang	0.705	0.695	0.992	0.973	0.700	0.983

a. The indices in this table are derived from the coefficients of region dummies in the profitability regressions reported in Table 7.3. For easy comparison, each profitability index is normalized by the sample average. Index that is greater than 1 would indicate profitability better than the sample average. The 6 index values are sorted by RSPI5.

Table 26 Number of Enterprises by Profitability and Entry-Exit Status: 1995-2002

		1995	1996	1997	1998	1999	2000	2001	2002
Number of profit-making enterprises	exit	2,485	1,177	2,434	1,648	1,335	2,608	1,258	
	new		2,802	1,533	2,408	2,523	1,160	3,890	2,300
	stay	12,229	10,540	10,493	9,849	11,017	11,235	11,221	14,968
	once		516	599	710	368	378	565	
	whole sample	14,714	15,035	15,059	14,615	15,243	15,381	16,934	17,268
Number of loss-making enterprises	exit	1,651	1,048	1,745	1,722	943	1,182	649	
	new		981	574	838	642	360	864	687
	stay	6,178	5,642	5,293	4,674	4,474	3,631	3,258	4,265
	once		268	286	444	161	184	193	
	whole sample	7,829	7,939	7,898	7,678	6,220	5,357	4,964	4,952
Number of enterprises	exit	4,136	2,225	4,179	3,370	2,278	3,790	1,907	
	new		3,783	2,107	3,246	3,165	1,520	4,754	2,987
	stay	18,407	16,182	15,786	14,523	15,491	14,866	14,479	19,233
	once		784	885	1,154	529	562	758	
	whole sample	22,543	22,974	22,957	22,293	21,463	20,738	21,898	22,220
Share of loss-making enterprises	exit	39.9%	47.1%	41.8%	51.1%	41.4%	31.2%	34.0%	
	new		25.9%	27.2%	25.8%	20.3%	23.7%	18.2%	23.0%
	stay	33.6%	34.9%	33.5%	32.2%	28.9%	24.4%	22.5%	22.2%
	once		34.2%	32.3%	38.5%	30.4%	32.7%	25.5%	
	whole sample	34.7%	34.6%	34.4%	34.4%	29.0%	25.8%	22.7%	22.3%

Table 27 Liabilities/Debts by Profitability and Entry-Exit Status: 1995-2002

		1995	1996	1997	1998	1999	2000	2001	2002
Amount of Performing Debts Based on Imputed Profits (RMB Billion)	exit	327	204	384	272	396	512	298	
	new		311	248	503	429	418	780	483
	stay	2,043	2,044	2,295	2,335	2,587	2,812	3,088	4,190
	once		52	70	129	78	92	71	
	all	2,370	2,611	2,997	3,239	3,490	3,834	4,237	4,673
Amount of Non-Performing Debts Based on Imputed Profits (RMB Billion)	exit	157	116	193	200	154	174	92	
	new		130	96	145	151	81	168	115
	stay	757	826	881	971	990	848	803	936
	once		23	34	54	20	25	27	
	whole sample	914	1,095	1,204	1,370	1,315	1,128	1,090	1,051
Total Liabilities (RMB Billion)	exit	484	320	577	472	550	686	390	
	new		441	344	648	580	499	948	598
	stay	2,800	2,870	3,176	3,306	3,577	3,660	3,891	5,126
	once		75	104	183	98	117	98	
	whole sample	3,284	3,706	4,201	4,609	4,805	4,962	5,327	5,724
NPD Ratio Based on Imputed Profits (%)	exit	32.4%	36.3%	33.4%	42.4%	28.0%	25.4%	23.6%	
	new		29.5%	27.9%	22.4%	26.0%	16.2%	17.7%	19.2%
	stay	27.0%	28.8%	27.7%	29.4%	27.7%	23.2%	20.6%	18.3%
	once		30.7%	32.7%	29.5%	20.4%	21.4%	27.6%	
	whole sample	27.8%	29.5%	28.7%	29.7%	27.4%	22.7%	20.5%	18.4%

Table 28 Reduction of NPD Ratio due to Exit of Poor-Performing Enterprises: 1995-2002

Row	Variable	Definition of variabe	1995	1996	1997	1998	1999	2000	2001	2002	Average during 1998-2002
1	R(t)	NPD ratio for the original sample in t	27.8%	29.5%	28.7%	29.7%	27.4%	22.7%	20.5%	18.4%	23.7%
2	L(t)	Total debts for the original sample	3,286	3,707	4,201	4,610	4,805	4,963	5,329	5,722	
3	Rx(t)	NPD ratio for the "exit" group in t	32.4%	36.3%	33.4%	42.4%	28.0%	25.4%	23.6%		
4	Lx(t)	Total debts for the "exit" group in t	484	320	577	472	550	686	390		
5	Rx(t-1)	NPD ratio for the "exit" group in t-1		32.4%	36.3%	33.4%	42.4%	28.0%	25.4%	23.6%	30.6%
6	Lx(t-1)	Total debts for the "exit" group in t-1		484	320	577	472	550	686	390	
7	Rx(t-2)	NPD ratio for the "exit" group in t-2			32.4%	36.3%	33.4%	42.4%	28.0%	25.4%	33.1%
8	Lx(t-2)	Total debts for the "exit" group in t-2			484	320	577	472	550	686	
9	Rx(t-3)	NPD ratio for the "exit" group in t-3				32.4%	36.3%	33.4%	42.4%	28.0%	34.5%
10	Lx(t-3)	Total debts for the "exit" group in t-3				484	320	577	472	550	
11	R(t,1)	NPD ratio of enlarged sample with "exit" group staying hypothetically for one period		29.9%	29.2%	30.1%	28.7%	23.3%	21.0%	18.7%	24.4%
12	R(t,2)	NPD ratio of enlarged sample with "exit" group staying hypothetically for two periods			29.5%	30.5%	29.2%	24.8%	21.6%	19.4%	25.1%
13	R(t,3)	NPD ratio of enlarged sample with "exit" group staying hypothetically for three periods				30.7%	29.5%	25.5%	23.0%	20.0%	25.7%
						(figures below are in percentage points)					
14	dR(t,1)	=dR(t,1) - R(t)		0.33	0.54	0.41	1.34	0.53	0.56	0.33	0.63
15	dR(t,2)	=dR(t,2) - R(t)			0.85	0.77	1.81	2.03	1.14	1.01	1.35
16	dR(t,3)	=dR(t,3) - R(t)				0.93	2.18	2.80	2.54	1.65	2.02

Table A.1 Distribution of Usable and Unusable Obervations by Ownership: 1995-2002

			1995	1996	1997	1998	1999	2000	2001	2002
Data Quality	bad	private	2	1	2	3	9	14	26	54
		collective	60	72	93	66	58	77	86	89
		mixed	23	24	39	73	82	145	178	158
		foreign	41	67	64	43	42	65	65	98
		HK-M-Taiwan	31	36	34	28	43	59	60	89
		state-owned	307	525	583	901	538	626	674	615
		total	464	725	815	1,114	772	986	1,089	1,103
		private	28.6%	6.7%	5.6%	1.7%	2.8%	2.7%	2.6%	4.0%
		collective	1.5%	1.7%	2.2%	1.8%	1.7%	2.6%	3.5%	4.0%
		mixed	1.8%	1.7%	1.9%	2.4%	2.2%	3.2%	3.1%	2.5%
		foreign	3.9%	4.9%	4.0%	2.7%	2.1%	3.1%	2.4%	3.2%
		HK-M-Taiwan	3.2%	3.1%	2.7%	1.9%	2.7%	3.7%	2.6%	3.4%
		state-owned	2.0%	3.4%	3.9%	6.7%	4.8%	6.3%	7.7%	7.9%
		total	2.0%	3.1%	3.4%	4.8%	3.5%	4.5%	4.7%	4.7%
	fine	private	5	14	34	176	307	498	958	1,302
		collective	4,008	4,199	4,116	3,577	3,350	2,899	2,394	2,138
		mixed	1,233	1,406	2,064	2,934	3,592	4,381	5,619	6,135
		foreign	1,000	1,305	1,525	1,579	1,924	2,048	2,610	2,935
		HK-M-Taiwan	936	1,115	1,222	1,454	1,524	1,552	2,211	2,495
		state-owned	15,361	14,935	14,350	12,573	10,766	9,360	8,106	7,215
		total	22,543	22,974	23,311	22,293	21,463	20,738	21,898	22,220
Total		private	7	15	36	179	316	512	984	1,356
		collective	4,068	4,271	4,209	3,643	3,408	2,976	2,480	2,227
		mixed	1,256	1,430	2,103	3,007	3,674	4,526	5,797	6,293
		foreign	1,041	1,372	1,589	1,622	1,966	2,113	2,675	3,033
		HK-M-Taiwan	967	1,151	1,256	1,482	1,567	1,611	2,271	2,584
		state-owned	15,668	15,460	14,933	13,474	11,304	9,986	8,780	7,830
		total	23,007	23,699	24,126	23,407	22,235	21,724	22,987	23,323

Table A.2 Distribution of Unusable Obervations by Industry: 1995-2002

	1995	1996	1997	1998	1999	2000	2001	2002
[06]Coal mining	0.4%	0.3%	1.0%	1.0%	0.7%	3.2%	1.8%	3.7%
[07]Petroleum extract	0.0%	0.0%	4.0%	7.1%	3.0%	2.6%	2.6%	0.0%
[08]Ferrous mining	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	7.1%	0.0%
[09]Nonferrous mining	3.0%	2.5%	2.5%	3.7%	2.3%	2.9%	3.7%	3.3%
[10]Nonmetal mining	1.4%	0.9%	2.8%	3.4%	0.0%	2.8%	5.1%	5.4%
[12]Timber logging	0.0%	0.0%	0.0%	0.0%	1.0%	4.0%	4.3%	5.4%
[13]Food processing	2.3%	2.7%	3.7%	5.0%	3.6%	5.4%	6.9%	6.5%
[14]Food Production	3.6%	6.6%	7.3%	5.9%	3.9%	5.8%	5.4%	5.7%
[15]Beverage	1.6%	3.1%	3.2%	3.6%	2.5%	3.6%	3.4%	4.5%
[16]Tobacco	0.7%	4.2%	0.0%	0.0%	0.0%	1.4%	1.4%	1.4%
[17]Textile	2.5%	3.0%	3.8%	6.0%	3.8%	3.8%	4.4%	4.8%
[18]Garments	2.8%	1.5%	1.8%	1.6%	1.3%	2.0%	2.0%	3.1%
[19]Leather	2.6%	4.5%	2.8%	6.3%	5.0%	6.5%	4.9%	4.3%
[20]Timber	7.4%	1.5%	1.3%	5.2%	5.3%	4.9%	4.1%	5.4%
[21]Furniture	3.1%	5.6%	1.3%	3.1%	2.7%	1.4%	2.3%	2.3%
[22]Papermaking	2.6%	3.3%	3.0%	6.7%	4.4%	6.1%	5.1%	4.6%
[23]Printing	1.1%	1.3%	2.5%	1.3%	2.3%	1.6%	2.3%	1.6%
[24]Cultural	9.4%	8.9%	0.9%	2.7%	2.7%	7.1%	3.7%	3.2%
[25]Petroleum processing	0.0%	2.6%	2.6%	0.8%	0.0%	2.5%	3.8%	5.6%
[26]Raw chemicals	2.4%	2.7%	2.2%	4.2%	2.5%	4.3%	4.9%	5.1%
[27]Medical	1.6%	2.4%	1.8%	3.9%	3.4%	3.8%	4.1%	2.9%
[28]Chemical fiber	2.4%	1.1%	4.7%	3.7%	2.4%	4.6%	3.4%	5.3%
[29]Rubber	4.7%	3.4%	3.4%	4.4%	3.2%	3.1%	4.2%	6.1%
[30]Plastic	2.6%	3.6%	2.9%	2.1%	2.8%	4.4%	4.6%	5.1%
[31]Nonmetal products	2.0%	3.2%	3.2%	5.2%	3.0%	4.0%	4.7%	4.2%
[32]Pressing ferrous	0.4%	3.5%	3.2%	8.5%	2.6%	5.4%	6.8%	5.7%
[33]Pressing nonferrous	1.1%	2.3%	1.4%	2.2%	3.2%	1.9%	3.0%	2.8%
[34]Metal products	0.9%	1.9%	3.1%	4.2%	2.0%	4.4%	3.8%	4.4%
[35]Ordinary machinery	0.5%	1.0%	1.9%	2.2%	1.8%	2.6%	2.4%	2.6%
[36]Special equipment	0.9%	1.7%	1.3%	1.9%	2.1%	2.8%	3.2%	3.8%
[37]Transport equipment	1.6%	2.5%	2.2%	3.6%	2.9%	3.3%	3.3%	2.6%
[40]Electric equipment	1.8%	2.6%	1.9%	3.1%	1.7%	3.4%	2.5%	3.8%
[41]Electronic & telecom	1.8%	2.4%	3.0%	3.0%	2.1%	2.9%	4.3%	2.8%
[42]Instruments	0.6%	1.6%	1.3%	4.4%	2.1%	2.8%	3.9%	5.1%
[43]Other manufacturing	3.0%	4.2%	3.8%	2.8%	2.1%	3.7%	3.8%	5.9%
[44]Electric power	4.7%	14.2%	18.6%	22.8%	19.5%	20.3%	18.4%	16.8%
[45]Gas production	2.9%	2.9%	7.6%	4.7%	7.1%	6.2%	9.8%	4.8%
[46]Tap water	1.1%	1.5%	1.0%	1.9%	1.9%	1.4%	2.6%	1.7%
Total	2.0%	3.1%	3.4%	4.8%	3.5%	4.5%	4.7%	4.7%

Table A.3 Distribution of Unusable Obervations by Region: 1995-2002

	1995	1996	1997	1998	1999	2000	2001	2002
[11]Beijing	4.6%	3.0%	2.6%	4.4%	5.9%	9.5%	3.9%	4.1%
[12]Tianjin	4.4%	5.9%	13.9%	13.1%	9.3%	18.2%	18.5%	22.3%
[13]Hebei	1.5%	2.1%	2.1%	4.2%	3.4%	4.7%	7.9%	8.9%
[14]Shanxi	1.6%	1.9%	3.1%	5.1%	2.5%	4.4%	8.1%	8.6%
[15]Inner Mongolia	1.1%	5.1%	7.1%	7.6%	7.7%	9.1%	9.1%	9.6%
[21]Liaoning	2.3%	3.2%	2.9%	8.1%	2.0%	2.6%	4.4%	4.3%
[22]Jilin	2.2%	6.1%	7.8%	11.2%	12.5%	10.6%	11.3%	10.2%
[23]Heilongjiang	2.7%	4.3%	5.5%	10.2%	7.9%	8.2%	11.4%	9.0%
[31]Shanghai	5.4%	5.5%	5.4%	3.6%	1.1%	1.2%	0.4%	1.2%
[32]Jiangsu	0.6%	0.6%	1.3%	0.9%	0.8%	1.0%	0.8%	1.0%
[33]Zhejiang	0.5%	1.7%	1.5%	1.9%	4.3%	4.7%	4.5%	3.1%
[34]Anhui	0.8%	1.2%	0.4%	3.7%	1.8%	2.7%	3.5%	3.6%
[35]Fujian	2.1%	1.7%	2.5%	4.2%	1.9%	3.3%	2.5%	2.5%
[36]Jiangxi	1.6%	1.9%	1.7%	5.6%	4.8%	8.2%	4.4%	5.3%
[37]Shandong	1.5%	2.3%	2.7%	2.6%	2.1%	2.4%	2.6%	2.6%
[41]Henan	1.1%	7.5%	7.7%	8.2%	5.3%	8.1%	10.4%	12.2%
[42]Hubei	2.6%	3.3%	3.6%	5.7%	3.2%	4.0%	6.1%	5.0%
[43]Hunan	2.2%	4.2%	2.3%	5.1%	1.3%	2.0%	2.0%	2.4%
[44]Guangdong	2.8%	2.5%	2.2%	2.7%	2.7%	2.9%	2.5%	3.2%
[45]Guangxi	0.7%	5.6%	1.6%	2.8%	0.7%	2.2%	1.5%	2.8%
[46]Hainan	18.1%	10.7%	3.5%	8.1%	5.8%	7.6%	10.9%	7.8%
[50]Sichuan+Chongqing	1.7%	2.7%	1.8%	5.1%	4.9%	6.4%	5.8%	3.6%
[52]Guizhou	0.8%	6.9%	11.0%	10.0%	14.2%	15.3%	16.0%	8.9%
[53]Yunnan	0.9%	0.0%	1.2%	2.9%	1.1%	2.6%	1.5%	2.3%
[54]Tibet+Qinghai+Ningxia	0.0%	0.6%	2.7%	6.2%	2.4%	0.6%	4.4%	2.8%
[61]Shaanxi	1.5%	1.3%	0.6%	4.7%	2.1%	2.5%	2.3%	1.4%
[62]Gansu	1.4%	1.0%	6.9%	7.4%	8.7%	9.2%	8.8%	10.3%
[65]Xinjiang	1.5%	1.6%	1.4%	3.7%	0.6%	4.0%	2.2%	1.8%
Total	2.0%	3.1%	3.4%	4.8%	3.5%	4.5%	4.7%	4.7%

Table A.4 Summary Statistics for Sales, Output, Asset, Liability, Labor and Value Added for the Cleaned Sample (Value Unit: RMB Million)

	YEAR	Number of Enterprises	Mean	Std. Deviation	Median	Minimum	Maximum	Sum
Sales	1995	22,543	136	630	45	0.109	39,930	3,071,530
	1996	22,974	144	681	44	0.100	43,738	3,308,847
	1997	22,957	155	761	44	0.103	50,760	3,560,393
	1998	22,293	163	772	44	0.101	50,611	3,629,511
	1999	21,463	188	871	50	0.107	61,211	4,032,923
	2000	20,738	234	1,219	57	0.112	92,279	4,843,396
	2001	21,898	257	1,213	63	0.109	78,984	5,624,020
	2002	22,220	292	1,329	69	0.101	72,843	6,495,292
	Total	177,086	195	966	51	0.100	92,279	34,565,913
Gross Value of Industrial Output	1995	22,543	136	616	46	0.101	40,214	3,073,253
	1996	22,974	147	685	48	0.130	44,349	3,378,619
	1997	22,957	157	762	48	0.113	51,693	3,607,608
	1998	22,293	165	767	48	0.100	51,646	3,681,858
	1999	21,463	190	874	54	0.106	63,918	4,068,673
	2000	20,738	230	1,171	61	0.150	92,617	4,775,290
	2001	21,898	255	1,177	67	0.140	79,422	5,573,291
	2002	22,220	288	1,275	71	0.100	73,633	6,388,539
	Total	177,086	195	943	54	0.100	92,617	34,547,132
Total Assets	1995	22,543	229	1,047	79	0.829	65,931	5,161,722
	1996	22,974	256	1,199	85	0.831	75,366	5,872,942
	1997	22,957	291	1,388	92	0.701	83,704	6,690,180
	1998	22,293	329	1,522	99	0.701	90,322	7,323,630
	1999	21,463	369	1,684	105	1.350	91,485	7,918,937
	2000	20,738	397	1,763	111	1.770	85,791	8,239,931
	2001	21,898	420	1,846	113	0.741	86,018	9,196,855
	2002	22,220	446	1,882	115	0.835	85,809	9,909,926
	Total	177,086	341	1,564	98	0.701	91,485	60,314,123
Total Liabilities	1995	22,543	146	595	56	0.028	29,785	3,285,112
	1996	22,974	161	658	60	0.016	27,652	3,706,920
	1997	22,957	183	788	64	0.016	31,269	4,201,084
	1998	22,293	207	859	69	0.098	33,133	4,609,115
	1999	21,463	224	895	71	0.022	32,958	4,804,740
	2000	20,738	239	957	74	0.010	46,409	4,962,981
	2001	21,898	243	908	72	0.001	33,647	5,328,350
	2002	22,220	258	990	71	0.016	43,050	5,723,794
	Total	177,086	207	840	66	0.001	46,409	36,622,096
Number of Employees	1995	22,543	1,696	5,215	877	30	254,078	38,223,099
	1996	22,974	1,633	4,908	823	30	197,048	37,513,117
	1997	22,957	1,593	4,719	793	30	193,076	36,581,069
	1998	22,293	1,502	4,482	715	30	193,110	33,490,764
	1999	21,463	1,428	4,401	654	30	194,410	30,656,548
	2000	20,738	1,361	3,947	620	30	161,654	28,225,561
	2001	21,898	1,237	3,599	560	30	147,722	27,079,491
	2002	22,220	1,189	3,560	520	30	137,962	26,426,284
	Total	177,086	1,458	4,404	701	30	254,078	258,195,933
Reported Value Added	1995	22,543	43	332	11	-424	32,912	958,256
	1996	22,974	44	348	11	-3,241	34,809	1,016,728
	1997	22,957	47	382	12	-6,738	39,565	1,080,121
	1998	22,293	51	398	12	-5,939	41,525	1,131,106
	1999	21,463	60	479	14	-1,954	53,645	1,288,589
	2000	20,738	73	690	16	-12,140	79,063	1,520,978
	2001	21,898	80	660	18	-1,796	78,355	1,741,547
	2002	22,220	91	652	20	-2,339	72,057	2,012,908
	Total	177,086	61	510	14	-12,140	79,063	10,750,232

Table A.5 Size of Sales, Output, Asset, Liability, Labor and Value Added at Selected Percentiles for the Cleaned Sample (Value Unit: RMB Million)

		Percentiles						
	YEAR	5	10	25	50	75	90	95
Sales	1995	6	10	20	45	101	233	418
	1996	5	9	19	44	102	245	438
	1997	4	8	19	44	105	264	488
	1998	4	7	18	44	107	286	530
	1999	6	9	21	50	125	325	614
	2000	6	10	23	57	146	387	739
	2001	6	11	25	63	162	444	838
	2002	6	11	27	69	181	505	983
Gross Value of Industrial Output	1995	7	10	22	46	104	236	403
	1996	6	10	21	48	110	250	440
	1997	5	9	21	48	112	266	489
	1998	5	9	20	48	115	288	536
	1999	7	11	24	54	131	333	606
	2000	6	11	25	61	151	388	730
	2001	7	12	27	67	169	444	836
	2002	7	12	29	71	186	505	956
Total Assets	1995	22	28	44	79	167	378	676
	1996	23	29	46	85	180	414	745
	1997	22	29	48	92	198	474	888
	1998	23	30	50	99	218	538	1,007
	1999	24	32	54	105	239	603	1,144
	2000	23	31	54	111	259	672	1,304
	2001	22	31	54	113	271	725	1,445
	2002	21	30	54	115	282	775	1,589
Total Liabilities	1995	12	17	29	56	115	245	424
	1996	12	18	31	60	125	268	471
	1997	12	18	33	64	137	301	542
	1998	12	19	34	69	151	345	641
	1999	12	18	35	71	160	381	709
	2000	11	18	35	74	169	412	784
	2001	9	16	32	72	170	429	848
	2002	9	15	31	71	176	459	910
Number of Employees	1995	211	306	520	877	1,515	2,858	4,631
	1996	186	271	475	823	1,457	2,806	4,584
	1997	168	248	445	793	1,429	2,767	4,595
	1998	141	208	388	715	1,340	2,656	4,429
	1999	126	187	348	654	1,257	2,566	4,258
	2000	116	173	323	620	1,208	2,497	4,143
	2001	103	150	288	560	1,129	2,332	3,815
	2002	92	134	260	520	1,079	2,257	3,778
Reported Value Added	1995	-2	1	4	11	26	64	121
	1996	-2	0	4	11	29	69	131
	1997	-2	0	4	12	30	74	141
	1998	-2	1	4	12	31	80	159
	1999	0	2	5	14	37	95	183
	2000	0	2	6	16	43	115	215
	2001	1	2	7	18	49	131	247
	2002	0	2	7	20	54	147	289

Table A6 The Weight of the Sample Enterprises in the Chinese Economy

	1995	1996	1997	1998	1999	2000	2001	2002
(1) Number of enterprises in the sample	22,543	22,974	23,311	22,293	21,463	20,738	21,898	22,220
(2) Number of all industrial SOEs plus the non-state industrial enterprises with annual sales above RMB 5 million				165,080	162,033	162,885	171,256	181,557
(3) Reported value added for all enterprises in the sample (RMB Billion)	958	1,017	1,080	1,131	1,289	1,521	1,742	2,013
(4) Total industrial value added in China (RMB Billion)	2,472	2,908	3,241	3,339	3,509	3,905	4,238	4,654
(3)/(4) = Sample Value added / China's Industrial Value Added	38.8%	35.0%	33.3%	33.9%	36.7%	39.0%	41.1%	43.3%
(5) China's GDP (RMB Billion)	5,848	6,789	7,446	7,835	8,207	8,947	9,731	10,479
(3)/(5) = Sample Value Added / China's GDP	16.4%	15.0%	14.5%	14.4%	15.7%	17.0%	17.9%	19.2%
(6) Number of employees for all enterprises in the sample (million)	38	38	37	34	31	28	27	26
(7) Number of employees in all industrial enterprises (million)	157	162	166	166	164	162	163	158
(6)/(7) = Sample Employment / China Industrial Employment	24.4%	23.1%	22.1%	20.2%	18.7%	17.4%	16.6%	16.7%
(8) Urban employees in China (million)	191	198	202	216	224	232	239	248
(6)/(8) = Sample Employment / China Urban Employment	20.0%	18.9%	18.1%	15.5%	13.7%	12.2%	11.3%	10.7%
(9) Total employment in China (million)	679	689	696	706	714	721	730	737
(6)/(9) = Sample Employment / China Employment	5.6%	5.4%	5.3%	4.7%	4.3%	3.9%	3.7%	3.6%
(7)/(9) = China Industrial Employment / China Employment	23.0%	23.5%	23.8%	23.5%	23.0%	22.5%	22.3%	21.4%
(10) Total Liabilities for all enterprises in the sample (RMB Billion)	3,286	3,707	4,201	4,610	4,805	4,963	5,329	5,722
(11) Total loans in China (RMB Billion)	5,054	6,116	7,491	8,652	9,373	9,937	11,231	13,129
(10)/(11) = Sample Total Liabilities / Total Loans in China	65.0%	60.6%	56.1%	53.3%	51.3%	49.9%	47.4%	43.6%