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Sector in Transition Countries:
How Does China Compare?*

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Working Paper Number 124
February 1998

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**Financial Discipline in the Enterprise Sector in Transition Countries:
How Does China Compare?***

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Abstract

This paper makes some selective comparisons of the empirical evidence relating to financial discipline and soft budget constraints in the enterprise sector in China and the transition countries of Central and Eastern Europe and the former Soviet Union (CEEFSU). The paper finds that: (1) in both CEEFSU countries and China, budgetary subsidies have fallen as prices have been liberalized, and the budgetary subsidies which remain are not clear evidence of soft budget constraints; (2) firms in both CEEFSU countries and China typically impose hard budget constraints on each other; levels of trade credit in China were roughly constant in 1994-96, implying inflows have approximately equaled outflows, i.e. inter-enterprise debts are being paid; the level of total trade credit observed in China, at about 20-25% of GDP, is similar to that observed not only in CEEFSU countries but also in developed Western economies; (3) in a comparison of bank financing of Chinese and Hungarian firms, Chinese banks were providing poorly-performing firms with new financing, whereas in Hungary, banks were reducing their exposure to bad firms; and (4) tax arrears in CEEFSU economies have emerged as a major source of soft budget constraints in recent years, but enterprise-level data for China show that as of the early 1990s, tax arrears were not an important source of financing for loss-making Chinese firms.

JEL classification: P31, P34, G21, G30

Keywords: soft budget constraint, transition economies, China, trade credit, bad debt, tax arrears

* We would like to thank Juzhong Zhuang for his helpful comments on an earlier version of this paper and for assisting us with the Chinese enterprise data, and Dic Lo, Duo Qin and Wen-Zhong Ding for their help in obtaining data. An early version of this paper was presented at the 1996 meeting of the Chinese Economic Association (UK). Portions of this paper derive from Schaffer (1998). The usual disclaimer applies.

1. INTRODUCTION

The aim of this paper is to make some selective comparisons of the empirical evidence relating to financial discipline and soft budget constraints¹ in the enterprise sector in China and the transition countries of Central and Eastern Europe and the former Soviet Union (CEEFSU). We divide the evidence into four categories: budgetary subsidies, trade credit, the banking system, and tax arrears. The reasons for this division include the following.

First, government budgetary subsidies to enterprises are the most frequently cited as evidence of traditional soft budget constraints in centrally-planned economies, and are therefore a natural starting point for our analysis. We find that in both CEEFSU countries and China, budgetary subsidies have fallen as prices have been liberalized, and the budgetary subsidies which remain are not clear evidence of soft budget constraints. Secondly, the appearance of overdue trade credit or “inter-enterprise arrears” is a relatively new phenomenon in transition economies and has often been considered as a particularly important and typical source of soft budget constraints. Our analysis suggests, however, this is usually not the case: firms in both CEEFSU countries and China typically impose hard budget constraints on each other. We estimate that the level of total trade credit in China was roughly constant in 1994-96 at about 20-25% of GDP. A constant stock implies inflows approximately equal outflows, i.e. inter-enterprise debts are being paid. Moreover, the volume of trade credit in China is comparable to that observed not only in CEEFSU countries but also in developed Western economies. We suggest that when overdue trade credit does appear to be a cause of soft budget constraints, it is because it leads the government, in response to lobbying by firms, to bail them out. Thirdly, we investigate whether soft budget constraints in the enterprise sector occur via the banking sector by using enterprise-level data from China and Hungary to see if poorly-performing firms were receiving positive net bank financing. We find that in China, banks were providing poorly-performing firms with new financing, whereas in Hungary, banks were reducing their exposure to bad firms. Finally, tax arrears in CEEFSU economies have emerged as a major source of soft budget constraints in recent years. We consider the evidence and explanations for this, and use enterprise-level data for China to show that as of the early 1990s, tax arrears were not an important source of financing for loss-making Chinese firms.

2. BUDGETARY SUBSIDIES

Budgetary subsidies in most CEEFSU transition economies were cut very substantially early in the transition, and have stayed much lower than pre-transition. Table 1 shows that budgetary subsidies in both rapid and slow reforming transition economies in CEEFSU fell from about 10-25 percent of GDP prior to the start of transition to about 3-5 percent of GDP by the early 1990s. In the case of China, budgetary subsidies have also declined in recent years, from 8.6 percent of GDP in 1985 to 1.2 percent in 1995 (Table 1). Why such a big fall?

The explanation for the declining budgetary subsidies in CEEFSU countries and China is primarily price liberalization. Under central planning, a state-owned

enterprise was a passive production unit. The state set all the prices and quantities of its inputs and outputs. Budgetary subsidies to enterprises were used as a device to adjust for the effects of comprehensive price and quantity control. When the controlled price of a good was low relative to the costs of its inputs, a product-specific subsidy was used to compensate. Price liberalization means that firms are now free to decide the level of their output and prices, and in particular they are free to raise prices to cover costs. Firms' losses resulting from price controls were eliminated and hence the corresponding product-specific budgetary subsidies were no longer needed.

Table 1: Budgetary Subsidies as Percent of GDP
in CEEFSU Countries and China

Country	1985	1989	1990	1991	1992	1993	1994	1995
Bulgaria		15.5	14.9	4.1	1.8	2.2	1.3	
Former Czechoslovakia		25.0	16.2	7.7	5.0			
Czech Republic					4.9	4.1	3.6	3.4
Slovak Republic					5.2	5.1	4.9	4.8
Hungary		12.0	9.5	7.4	5.5	4.3	4.5	3.5
Poland		10.6	7.7	5.1	3.3	3.9	4.1	1.8
Romania		5.7	7.9	8.1	12.9	5.5	3.8	
Russia					14.2	7.3		
China	8.6	5.7	5.2	4.1	2.9	2.1	1.5	1.2

Source: IMF, *World Economic Outlook*, October 1994, pp. 82-83 (former CSFR, Russia); IMF, *World Economic Outlook*, May 1996, p. 81 (Bulgaria, Romania); Coricelli et al. (1997), p. 29 (Czech Republic, Slovak Republic, Hungary, Poland); Lo (1997), Table 3 (China).

Are the observed remaining budgetary subsidies obviously evidence of soft budget constraints? The answer to this question depends on how and why these subsidies are used. If they are used to bail out inefficient and otherwise loss-making enterprises, then there is clearly evidence of soft budget constraints. If they are used to subsidize firms whose losses derive simply from government price controls and which are actually operating efficiently, then this is not a case of soft budget constraints. Unfortunately, we can not readily separate empirically these two cases. There is evidence, however, suggesting that the remaining subsidies in both CEEFSU countries and China are closely related to their remaining price control practices.

Schaffer (1995) shows that the remaining budgetary subsidies in the leading transition economies of CEEFSU are highly sector-specific, and typically, though not exclusively, related to the price controls still remaining in these countries. The sectors receiving subsidies in these countries are mainly public transportation, especially railway transportation; the energy sector, especially coal; housing subsidies; and agriculture.² Budgetary subsidies in the slower reforming transition economies of CEEFSU are larger than in the leading reformers, and more often relate to both soft budget constraints - outright grants to ailing firms or sectors - or to other forms of financial indiscipline and weak government.

China's price liberalization has been much more gradual than that of the CEEFSU countries. This is why the reduction in budgetary subsidies in the former appears less dramatic than in the latter. Budgetary subsidies to SOEs in China can be broken down into two categories: loss subsidies and price subsidies. As a percentage of GDP, enterprise loss subsidies declined from 5.7 percent in 1985 to 0.6 percent in 1995, while price subsidies fell from 2.9 percent to 0.6 percent during the same period.³ This clearly indicates that subsidies to compensate for enterprise losses have reduced much more substantially than price subsidies; by 1995 budgetary subsidies were small and equally divided between the two categories. However, SOE losses might still be price-related, and therefore the existing loss subsidies could be well due to existing price controls; indeed several studies suggest that this is the case. Lo (1997) and Broadman (1994) show that the main loss-making SOEs are concentrated in price-controlled sectors, e.g. grain, coal, oil, electricity, and wool sectors, though they also existed in other sectors, e.g. textiles, machinery, and food processing. Nevertheless the point here is that the remaining budgetary subsidies in China are at least in part price-related and hence are not clear evidence of continuing soft budget constraints.

Another significant source of SOE losses in China is the social and public obligations imposed on them by the government. Chinese SOEs are burdened with the support of an excessive workforce by keeping redundant workers on their payroll and the provision of public services such as housing, health care, pensions, and childcare for their employees. Even if a firm is profitable in terms of its operating costs and revenues, its social and public obligations may still cause it to be in the red. The remaining subsidies may therefore be justified if they are also used to compensate for SOEs' losses due to their social safety net obligations. The World Bank (1997) reports that the most recent practice in China is to provide direct fiscal subsidies to SOEs only for "policy losses" (e.g., in the coal sector where prices are controlled below costs) and for "operational losses" when there are extenuating circumstances and only on a temporary basis (e.g., when a loss-making SOE cannot meet its employee medical expenses). These practices further suggest that budgetary subsidies do not seem to be an obvious source of soft budget constraints.

It therefore appears that the situation we observe in China is similar to that in the leading CEEFSU countries: the bulk of remaining budgetary subsidies are used to compensate for the remaining price controls which are typically concentrated in a relatively small number of sectors and are not clearly related to soft budget constraints. It is also interesting to note that the current level of budgetary subsidies as a percentage of GDP in leading CEEFSU transition countries and in China is also comparable to that observed in developed Western economies - typically on the order of a few percent of GDP.

3. TRADE CREDIT AND "INTER-ENTERPRISE ARREARS"

Trade credit refers to the credit extended by one firm to another as part of sales and purchases of inputs and outputs. It arises from the period between the time goods are delivered and services performed and the time payment for these goods and services takes place. A time period is normally specified (e.g., 4 weeks), by the end of which

the customer is supposed to pay. If a payment is delayed beyond this deadline, the trade credit is "in arrears". Under strict central planning, levels of total trade credit were low, reflecting only the time taken by the banking system to clear payments between firms, and overdue trade credit - "inter-enterprise arrears"- in principle did not exist at all. In transition economies, firms become responsible for paying for goods and services themselves. The result has been the emergence of large volumes of total trade credit and overdue trade credit.

It has been observed that stocks of total trade credit, and of overdue trade credit, have increased very substantially in CEEFSU countries. This is sometimes put forward as evidence of soft budget constraints, financial indiscipline, etc. We argue instead that the presence of inter-enterprise arrears in CEEFSU countries is not necessarily evidence of soft budget constraints, and when it is, it is the government that has been "soft", and not firms.

The most straightforward way to establish that the presence of trade credit and inter-enterprise arrears in CEEFSU countries is not necessarily evidence of financial indiscipline is to compare the levels of trade credit to those observed in developed Western countries, and to observe the levels of trade credit over time.

Table 2 shows that the stock of trade credit in most Western and CEEFSU countries fall in the range of 10 to 50 percent of GDP; if anything, trade credit in CEEFSU transition economies is relatively low compared to the West. The figures in Table 2 also show that both in the West and in CEEFSU, typically about one-half of the stock of trade credit is overdue. Consequently, the stock of overdue trade credit ("inter-enterprise arrears") in CEEFSU countries, amounting to around 7 to 18 percent of GDP, is also comparable to that observed in Western economies.

Table 2: Trade Credit and Overdue Trade Credit (Receivables)
in Selected Western and CEEFSU Transition Countries

	Total Trade Credit		Overdue Trade Credit		
	payment period (months)	in percent of annualized GDP	percent overdue	payment period (months)	in percent of annualized GDP
<i>Western Countries</i>					
Finland	1.8	20	45	0.8	9
France	3.5	38	44	1.6	17
Germany	1.6		38	0.6	
Japan		59			
Sweden	1.6	21	38	0.6	8
U.K.	2.6	20	62	1.6	12
U.S.A		17			
<i>Transition Countries</i>					
Czech Republic, 1994	2.5	50	37	0.9	18
<i>Hungary</i>					
1988	1.4	37			
1989	1.3	35			
1990	1.5	36			
1991	1.7	35	47	0.8	17
1992		27			
<i>Poland</i>					
1988	1.4	30			
1989	1.3	24			
1990	1.2	20			
1991	1.5	22			
1992	1.3	19			
1993	1.4	19	51	0.7	10
<i>Russia</i>					
1990	0.6	10			
1991	0.6	12			
1992	2.5	22	46	1.1	10
1993	1.6	15	44	0.7	7
1994	1.4	17	56	0.8	9

Source: Alfandari and Schaffer (1996).

Finally, the level of trade credit in CEEFSU countries has been roughly stable in the transition period, meaning that the average total payment periods of the stocks of trade credit have remained at about 2 months or so in CEEFSU countries. This means that if the average firm paid its suppliers with a delay of two months, these are the stocks we would observe. The stocks of overdue trade credit translate into an average delay period of one month. In other words, the average CEEFSU firm has one month to pay its suppliers, but actually pays after two months. These periods fluctuate but in a relatively small range of up to a few months. Over five or more years - 60-plus months - of transition, the total stock of outstanding trade credit is still only a few months. Simplifying somewhat, almost everything sold has been paid for. What we observe in CEEFSU countries is what we observe in Western countries - firms pay late, but most firms eventually pay. In terms of stocks and flows, the inflow of

overdue trade credit is matched by an outflow of payment of debts in arrears, and hence the stock is stable.

“Inter-enterprise arrears” have not been a problem in the CEEFSU transition countries because firms have learned to apply hard budget constraints towards each other. In particular, they adopt simple credit control mechanisms such as requiring partial or full payment in advance or on delivery, stopping shipments of supplies to customers who are too far behind in their payments, and so forth.⁴ Both firms in CEEFSU countries and firms in Western economies tolerate late payment by customers because if they insisted on strict payment discipline they would lose their customers to competitors that offered more relaxed payment terms. It is interesting to note that firms in CEEFSU countries were able to impose financial discipline on each other in spite of the absence of a well-functioning system of bankruptcy law and actual low numbers of bankruptcies - the simple credit control mechanisms identified above appear to have been sufficient.

It is well known, however, that inter-enterprise arrears crises in CEEFSU countries have in some cases caused governments to inject funds in an attempt to clear these arrears.⁵ This brings us to our second point, namely that government may be “soft” in the presence of inter-enterprise arrears. If the government is soft, firms may collude in non-payment to each other, anticipating that the state will bail them out.⁶ In all cases of government clearance of inter-enterprise arrears in CEEFSU countries, the arrears reappeared - not surprisingly, given that late payment is a normal feature of market economies. Experience from CEEFSU countries suggests the policy which is more likely to be successful is for the government to do nothing; if firms are left alone, the inter-enterprise arrears problem disappears because firms are not soft and apply hard budget constraints towards each other.

The case of China is very similar to that of the CEEFSU transition economies. The level (stock) of trade credit in China has grown considerably over recent years, and is now comparable to levels observed in both the CEEFSU countries and developed Western economies. The stock of trade credit has, moreover, stabilized in recent years - inflows now more or less match outflows. Furthermore, in common with some of the slower-reforming CEEFSU countries, China has attempted several times - like the CEEFSU countries, without success - to clear the inter-enterprise arrears.

Table 3 shows that in 1985, the level of trade credit in China was very low by Western standards, and comparable to that observed in a planned economy - the average payment period was about 2 weeks, the same as that in Russia prior to the start of transition (see Table 2). The level of trade credit began to increase in the late 1980s, and we estimate that by 1994 the volume of total trade credit in the non-agricultural economy was the equivalent of 22 percent of GDP, corresponding to an average payment period of two months. Since 1994, the level of trade credit has remained at these levels. A comparison with Table 2 shows that the current levels of trade credit in China are comparable to those observed in both CEEFSU and developed market economies. Unfortunately information on overdue trade credit in China is not available, and therefore a comparison can not be made here.

Table 3: Trade Credit (Receivables) in China

Year	Receivables of 370,000 industrial firms (billion yuan) ^a	Total receivables in the non-agricultural economy as percentage of GDP ^b	Average payment period in industry (months)	
			All firms ^c	Large SOEs only ^d
1985				0.4
...				
1988				0.5
1989				0.8
1990	90.1	7.7	0.6	1.0
1991	124.4	9.5	0.6	1.0
1992	161.3	10.1	0.8	0.9
1993	345.7	16.2	1.2	
1994	631.4	21.5	1.9	
1995	799.6	21.5	2.0	2.1
1996	927.0	22.0	2.1	2.3

Notes:

a: Data on receivables cover approximately 370,000 industrial enterprises (including non-SOEs). Source: Fan (1996), Table 2, and Chinese Statistical Bulletin, 1996.

b: Estimates cover non-agricultural non-financial enterprises (industry, construction, trade, transportation, communications). The coverage of data in the Chinese Statistical Yearbook for all firms in industry with self-accounting status is somewhat wider than the data in column 1, covering approximately 500,000 enterprises. Sales of the 370,000 firms account for approximately 90% of sales of the 500,000 firms. To estimate total trade credit in the economy in non-agricultural firms, the receivables data in column 1 is scaled up, first to cover the missing 10% of industrial sales, and then using weights from sectoral GDP to estimate receivables in the sectors other than industry.

c: Figures on payment period are based on the data in column 1 and are calculated as the ratio of end-year receivables to average monthly sales. Source: column 1, Chinese Statistical Bulletin, various years, Chinese Statistical Yearbook, various years, and own calculations.

d: Figures for 1985-92 are based on data from 40,000 industrial enterprises subordinated to the budget. Source: Fan (1996), Table 1 (receivables), Chinese Statistical Bulletin, various years (sales), and own calculations. Figures for 1995-96 are based on data on 15,000 large industrial SOEs. Source: Chinese Statistical Bulletin, 1996, and own calculations. Average payment period in months is defined as in note c.

It has often been argued that in China, SOEs face soft budget constraints whereas collectively-owned enterprises (e.g. township and village enterprises, TVEs) and private firms face hard budget constraints. Are SOEs capable of imposing hard budget constraints on their customers? Table 4 shows that in 1996, trade credit extended to customers by Chinese SOEs was somewhat larger than that extended by TVEs in particular (average payment period of 2.3 months for SOEs vs. 1.3 for TVEs), but about the same as that extended by private firms and non-TVE collective firms. We saw, moreover, from Table 3 that the volume of trade credit extended by SOEs was the equivalent of about 2 months of sales over the period 1995-96, again implying that on average SOEs have been collecting payment for their sales; inflows have been roughly equal to outflows as old goods are paid for and new goods are shipped. It is often observed that currently many SOEs are in financial difficulties, and this is evident from the low profitability rates and the large proportion of loss-

making firms (Table 4), but an inability to impose hard budget constraints on their customers does not appear to be a major source of financial problems of SOEs.

Table 4: Trade Credit and Profitability in Chinese Enterprises, 1996

	Average payment period (months)	After-tax profit as % of sales	Share of total industrial sales (%)	Percentage of firms which are loss-making
All	2.1	2.6	100.0	23.0
State-owned	2.3	1.6	48.3	37.7
Medium and large	2.3	2.1	40.2	39.9
Small	2.4	-1.1	8.2	37.1
Collective	1.6	3.1	29.7	17.9
TVEs	1.3	4.1	20.4	13.5
Other collective	2.2	0.7	9.3	26.3
Other (incl. private)	2.2	4.3	22.0	34.2

Source: Chinese Statistical Bulletin, 1996, and own calculations. Data based on survey of 390,000 industrial firms. Average payment period calculated as ratio of end-year receivables to average monthly industrial sales. Column 3 may not sum to 100 due to rounding.

In sum, after 11 years of economic reform, 1985-1996 - 132 months of reform - total trade credit outstanding amounts to perhaps two months of transactions overall. It therefore seems that, as in the CEEFSU countries, almost everything has been paid for in China as well. However, as discussed above, trade credit has been an indirect source of soft budget constraints in China. Between 1990 and 1992 the People's Bank of China (the central bank) attempted to clear inter-enterprise debts by injecting three tranches of credit amounting to a total of 46.6 billion yuan (the equivalent of 2% of GDP); in addition, 3.9 billion yuan of government spending was used for the same purpose (Fan, 1996). Although this program resulted in the clearing of a substantial volume of trade credit, amounting to 201.8 billion yuan or 10% of GDP, it was clearly ineffective in stopping the increase in trade credit in China, as we saw above (Table 3).

The Chinese experience is thus similar in a number of respects to what has been observed in some CEEFSU countries: the state appears to be soft, and arrears reappear following the attempted clearing operations. The CEEFSU experience suggests that Chinese policy-makers should consider the alternative policy of letting market forces take care of the inter-enterprise arrears "problem" - if Chinese firms are left alone, the level of trade credit should stabilize. Indeed, Fan (1996) reports that since 1993 the policy of the PBC has been that loans to clear inter-enterprise arrears should not be granted in any circumstances, and as levels of trade credit in 1994-96 stabilized at levels comparable to those observed in developed Western economies (as well as in CEEFSU economies), it appears this policy has been successful.

We note here that the relative weakness of the bankruptcy law framework in China is sometimes cited as an obstacle to solving the arrears problem, but the experience of the CEEFSU countries suggests this is not a major obstacle - the CEEFSU countries also had weak bankruptcy law frameworks, and despite this, firms were able to impose hard budget constraints on each other, and volumes of trade credit stabilized at levels observed in Western economies. The fact that the level of trade credit in China in 1994-96 also stabilized at these levels suggests that weak bankruptcy laws have not been an obstacle there either.

4. BAD DEBTS AND BANKS

The bank-enterprise relationship in transition economies is very complex, with a considerable degree of variation between countries. Roughly speaking, the evidence suggests that banks in the leading transition countries are fairly hard and are not a source of soft budget constraints; the debate there is how long it has taken for this behavior to emerge. In the slower reformers, governments have used the banking sector to channel soft credits to loss-making or politically influential firms; this is a case of the soft budget constraint, though it is the government rather than the banks which is the source of the softness. In this section we first use the experience of CEEFSU countries to illustrate some of the measurement problems involved in assessing whether the banking sector contributes to the soft budget constraints of firms. We will concentrate in particular on the large and growing volume of "bad debts" in the enterprise sector and try to assess whether they constitute evidence of soft budget constraints. We then turn to evidence on bank behavior in China.

The first measurement problem relates to what is meant by "bad debts". Typically, when statistics on the "bad debts" of the banking sector are cited, the figures come from the banks themselves and refer to loans which have been qualified as substandard, overdue, non-performing, etc., by the banks. If bad debts thus measured are increasing it means that banks are qualifying increasing volumes of their loans as "bad". This does not necessarily imply they are actually making bad loans at that time. The increase in bad debts may instead arise either because firms which received loans in the past only now have entered economic difficulties and are not servicing their debts, or because loans became non-performing in the past but the bank temporarily delayed formally qualifying them as non-performing by capitalizing the interest due and rescheduling the principal.⁷ Put another way, increases in bad debts observed today may not indicate the existence today of bad lending practices and soft budget constraints; it may simply result from recognition by the banks of their pre-existing stock problems.

The second measurement problem is that when firms that are in financial difficulties do not service their bank debt, the bank debt will grow in nominal (real) terms so long as the bank charges a positive nominal (real) interest rate on the overdue debt. So long as bad debts are not being worked out and firms are not being liquidated and their debts actually written down or written off, the amounts owned by the debtors will continue to grow even if banks are not soft and are not making new loans to their problem debtors. This will be true even if banks are trying to avoid declaring bad loans as bad and are capitalizing the interest and rescheduling the debts; the banks will

still not be providing the firms with soft budget constraints so long as they are not making new loans on top of the old, "bad" loans to these customers. This suggests that where possible, we should look at the flow of credit provided by banks to firms net of interest payments, i.e. net bank financing. If net bank financing of problem firms is positive, banks are in effect "throwing good money after bad" and we have evidence of soft budget constraints.

In the case of CEEFSU, most economies started transition with a deep recession - on the order of 20-50% fall in GDP. We would expect many firms to experience financial difficulties, and in particular to be unable to service the bank debts they had at the start of the period, in any economy with output declines of such depth. We should therefore expect large volumes of non-performing bank loans to emerge eventually, when the banks finally recognize and formally qualify these bad debts.

In addition to these "inherited bad debt stock" problems, we would also expect to observe some initial bad debt "flow" problems to firms. At the start of transition, many firms in CEEFSU countries continued to borrow even though credits were expensive because of their expectation that the recession would only be temporary and their investment would be paid off once the recession were over. At the same time, banks in early stages of transition lacked the necessary experience and expertise to evaluate their true portfolio positions. Loans made even with the best of intentions in early transition may also turn bad due to similar factors such as lack of experience and expertise.

Hungary provides a nice example of these measurement problems. In 1992-93, the volume of bad loans grew tremendously, by a factor of about 5 in real terms, the increase being equivalent to about 10% of GDP. Some observers concluded from this that the Hungarian banking sector was very soft and that firms had soft budget constraints. Bonin and Schaffer (1995) and Schaffer (1998), however, use enterprise data to argue that Hungarian banks were not injecting new funds into unprofitable firms; on the contrary, they were apparently trying to reduce their exposure to them. Net bank financing - the increase in bank debt net of interest payments - of highly unprofitable firms was negative, not positive. That is, the flow of cash was not from the banks to the problem firms, it was from the problem firms to the banks. This shows that Hungarian banks were not soft in 1992-93 - at the same time they were trying to reduce their exposure to their unprofitable borrowers, they were admitting publicly the bad debts problem and were qualifying large portions of their portfolios as bad.

We now turn to the bad debt problem in China. The scale of the bad debt problem can be measured in two ways: classified loans as a percentage of all loans, and the volume of classified loans in relation to the scale of economic activity (e.g., GDP). Table 5 presents both indicators for China and selected CEEFSU countries. In the case of the CEEFSU countries, the data are either for the year in which the scale of classified loans reached its peak (Czech Republic, Hungary, Poland) or the most recent data available (Bulgaria, Romania, Russia, Slovakia). The estimate of classified loans in China is only approximate, and in particular these figures may understate the scale of bad bank debt in China if banks are rolling over loans which firms are not servicing. Cross-country comparisons of the scale of classified loans should also be treated with

some caution because of differences in classification schemes as well as differences in the scale of possible understatement of bad debt problems. Nevertheless, it is clear that the proportion of bank debt in China which the banks have classified as poor or bad, while large at about 20% of total bank debt in 1995, is actually somewhat low compared to that in other transition countries, where figures of 30-40% are more typical. If we measure the scale of classified loans in proportion to GDP, however, the picture is somewhat different - the absolute size of China's bad debt problem, about 20% of GDP in 1995, is comparable in scale to the bad debt problems observed in CEEFSU countries.

Table 5: Classified Loans in China and CEEFSU Countries

Country	as % of total loans	as % of GDP
Bulgaria (1995)	74	31
Czech Republic (1994)	38	27
Hungary (1993)	29	15
Poland (1993)	31	5
Romania (1995)	43	19
Russia (1996)	13-30	1-3
Slovakia (1995)	29	26
China		
1993	13-20	12-19
1995	20	17
1996	22	21

Sources: *OECD Economic Surveys*, various (Bulgaria, Czech Republic, Hungary, Poland, Russia, Slovakia), National Bank of Romania *Quarterly Bulletin*, and own calculations; for China (1993), estimates of People's Bank of China as quoted in Hofman (1996); for China (1995), PBC estimate of percentage of bad loans in the 4 largest Chinese commercial banks cited in Woo (1996) and here applied to PBC figures for total credit stock; for China (1996), figure for percentage of bad loans in the 4 largest Chinese commercial banks cited in *The Economist*, 13.09.97, and here applied to PBC figures for total credit stock.

The explanation for this can be seen from Tables 6 and 7. The scale of total credit in China, 88% of GDP in 1995, is large compared to that observed in most CEEFSU countries (Table 6). Most of this bank credit consists of lending to firms, and hence we observe that the Chinese firms are heavily indebted compared to their CEEFSU counterparts - Table 7 shows that the debt/asset ratio at book value in Chinese enterprises in 1994 was 65%, compared to 30-45% observed in the Czech Republic, Hungary and Poland. It is worth noting that the debt/asset ratios observed in developed Western countries are in the range of 55-75% (Rajan and Zingales, 1995), i.e. it is the CEEFSU level which is low by international standards and not the Chinese level which is high. It should also be noted that debt/asset ratios in the

CEEFSU countries were also low prior to the start of transition, meaning that CEEFSU firms inherited low debt levels from the socialist period.

Table 6: Credit to the Non-Financial Sector as a Percentage of GDP in China and CEEFSU, 1995

Country	Credit as % of GDP
Bulgaria	41
Czech Republic	64
Hungary	23
Poland	20
Romania	23
Russia	12
Slovakia	59
Slovenia	28
China	88

Source: *OECD Economic Surveys: Russian Federation* (1997), p. 92, IMF, *International Financial Statistics*, December 1997, *China Statistical Bulletin 1996*, and own calculations.

Table 7: Debt to Asset Ratio (Book Value) of Firms in China and CEE Countries (%)

Country	Debt/Asset Ratio
Czech Republic (1994)	44
Hungary (1992)	32
Poland (1992)	41
China (1994)	
All industrial enterprises	65
of which:	
state-owned enterprises	68

Sources: CEE countries, Cornelli *et al* (1996); China: Chinese Statistical Yearbook, 1995, using tables 12-9, 12-11 & 12-12.

The explanation for the high debt/asset ratio in Chinese enterprises compared to CEEFSU firms, and for the larger volume of total bank debt in China, follows from changes in Chinese government policy towards funding investment. From the start of the reforms in the late 1970s, bank loans have progressively replaced budgetary appropriations as the main source of external funding of investment in fixed capital in SOEs in China. Government expenditure on capital construction amounted to 13% of GDP in 1978, and fell to 7% of GDP by 1975 and only 3% of GDP in 1993. The increased reliance on bank financing of investment is reflected in the higher stock of bank credit and the higher indebtedness of firms. CEEFSU firms, by contrast, at the start of transition in 1989-91 inherited stocks of fixed capital which had been funded

largely by government budgets rather than debt, and hence inherited low volumes of debt as well.

The sources of the bad debt problem in China also differ in some respects from those in the CEEFSU economies. Most obviously, China has experienced continuous economic growth since the start of the reforms. One of the main causes of the bad debt problem in the CEEFSU countries - the deep recessions at the start of transition and the accompanying financial distress of many firms - has no counterpart in China. The causes of the Chinese bad debt problem do, however, resemble some of those operating in the CEEFSU countries, particularly the slower reformers.

While movement towards a market economy has made great progress in China, the financial sector is an exception. The banking sector remains dominated by a few very large state-owned banks. Central planning of goods was progressively abandoned during the reform period, but state direction of bank lending for policy or political purposes continued. In these respects the functioning of China's banking sector resembles those of some of the less-rapidly reforming CEEFSU transition countries, and as in these countries, the effect has been to contribute to the growth of bad debts in the banking sector.

The general view in the literature on the Chinese banking system (e.g. World Bank, 1995, Bouin 1996, Woo 1996) is roughly as follows. During the reform period, decentralization granted local governments with a greater control over state banks' local branches. The greater autonomy of local governments combined with quantitative credit control has given room to political pressure, corruption, and collusive behavior between banks, governments and enterprises. Local governments pressure local banks to lend to their controlled SOEs and support local projects to promote local development. The expected economic value of these projects alone presumably would not justify this lending, and hence the recipients of these loans will often not be in a position to service or repay them. Furthermore, when SOEs run into financial difficulties, whether because they are overindebted or because of other reasons, local governments and enterprises lobby the authorities to direct banks to rescue firms by injecting new loans - a case of the soft budget constraint. To the extent that these loans will not actually be repaid, they can be seen as providing in effect a flow of quasi-fiscal subsidies to enterprises; an additional subsidy element derives from charging low (or negative, in real terms) interest rates.

In this analysis of the Chinese banking sector, the bad debt problem does not resemble that in the faster CEEFSU reformers (e.g. the Czech Republic, Hungary, Poland), which can be characterized as a bad debt stock problem but no major flow problem. In these countries, a large portion of the bad debt stock problem appears to have either been inherited from the pre-transition period in the sense that the recession which accompanied the start of transition meant many firms could not service their debts, or been the result of imprudent lending early in the transition; the flow problem appears small in the sense that cautious lending policies by most state-owned or privatized banks emerged within a couple of years of the start of transition. The Chinese situation is instead more akin to the situation in the slower reformers in the first several years or so of transition (e.g. Bulgaria and many of the countries of former Soviet Union), where state direction of credits for political purposes was common;

such loans were often made at very negative real interest rates and the principal rapidly deflated, rolled over, or forgiven, and the loans were often directed to distressed and/or politically influential firms.

We now investigate directly this characterization of the Chinese banking sector with the help of a dataset of 500-odd Chinese state-owned industrial enterprises for 1991.⁸ We apply the method of Bonin and Schaffer (1995) and look at the relationship between net bank financing and firm performance. If net bank financing of poorly performing firms is positive we have evidence of soft budget constraints. That is, if poorly performing firms see an increase in nominal lending greater than the interest they are paying to the banks, the banks are not merely rolling over debts, they are “throwing good money after bad”.

Net bank financing of firm i is defined as:

$$\text{NBF} = \frac{(\text{End-1991 bank debt} - \text{end-1990 bank debt}) - \text{interest costs}}{\text{End-1991 total assets}} \quad (\text{in } \%)$$

We measure performance in two ways, using lagged profitability and lagged output growth. Profitability is defined as:

$$\text{Profitability} = \frac{1990 \text{ gross profit} - \text{profit taxes and other fees}}{\text{End-1990 total assets}} \quad (\text{in } \%)$$

Profitability is defined using the firms' 1990 results for the reason that these should have been known to banks when they were making their 1991 loans. There are problems with profit as a measure of performance, however, since in this case some of the losses experienced by firms may have been due to price controls, as discussed earlier in this paper.⁹ For this reason, we use an additional performance measure, lagged real output growth. This is defined as:

$$\text{Lagged real output growth} = \text{Real increase in output in 2-year period 1988-90 (in } \%)$$

The simplest way to present the data is using a scatterplot, with net bank financing on the vertical axis and either profitability or output growth on the horizontal axis. It is also helpful to be able to distinguish between large and small borrowers, and so we weight each point (firm) in the scatterplot by the size of its end-1991 bank debt - a large point indicates a large debtor. To make the scatterplot more readable, only firms with an end-1991 bank debt in excess of US \$1 million (at official exchange rates) are plotted.

Figure 1 shows the relationship between net bank financing in 1991 and firm profitability in 1990. Most loss-making firms lie above the horizontal axis, i.e. most loss-makers were receiving positive net bank financing. We interpret this as evidence of a “flow problem” in the Chinese banking sector in 1991 - Chinese banks were not merely rolling over debts of loss-making firms, they were “throwing good money after bad”. These firms, it appears, had soft budget constraints.

Figure 2 shows the relationship between net bank financing in 1991 and firm real output growth in 1988-90. About half of firms with real declines in output over the preceding two years received cash injections from their banks. Again, we interpret this as evidence of a flow problem in the banking sector, and of the existence of soft budget constraints.

A comparison with Hungarian firms in 1993 makes an interesting contrast.¹⁰ We use a comprehensive dataset of Hungarian firms as collected by the central statistical office. As before, in order to make the scatterplot readable, only firms with bank debts in excess of US \$1 million are plotted. Figure 3 shows the relationship between net bank financing in Hungary in 1993 and firm profitability in the preceding year, 1992. In sharp contrast to the Chinese case, almost no loss-making firms in Hungary had positive net bank financing in 1993. The picture is similar if we measure performance by real sales growth in 1992; Figure 4 shows that the firms with the largest real declines in output had negative, not positive, net bank financing. In 1993, Hungarian banks were trying to extract themselves from their worst clients. Unlike Chinese banks, they were imposing hard budget constraints on their problem firms.

It is worth noting another important difference between the Chinese and Hungarian cases. In Figures 1 and 2, we can see that better performing Chinese firms have positive net bank financing. In a sense, the increasing exposure of Chinese banks to poorly performing firms is counterbalanced by their increased lending to good firms. In Hungary, by contrast, better performing firms have negative net bank financing (Figures 3 and 4). In our view, this is best interpreted by distinguishing between the supply side (banks) and the demand side (firms) in the market for credit. Real interest rates in 1993 in Hungary were very high, and the Hungarian economy was still contracting. Profitable Hungarian firms likely preferred to reduce their bank lending and instead finance from retained earnings, and in any case in Hungary in 1993 there were relatively few growing firms with a real increase in demand for bank credit. Hungarian banks may have wanted to lend to profitable firms, but such firms didn't want to borrow and there were few such firms anyway. In China in 1991, by contrast, profitable and/or growing firms were willing to borrow, and there were many growing firms to whom banks could lend.

Figure 1: NBF vs. Lagged Profit - China 1991

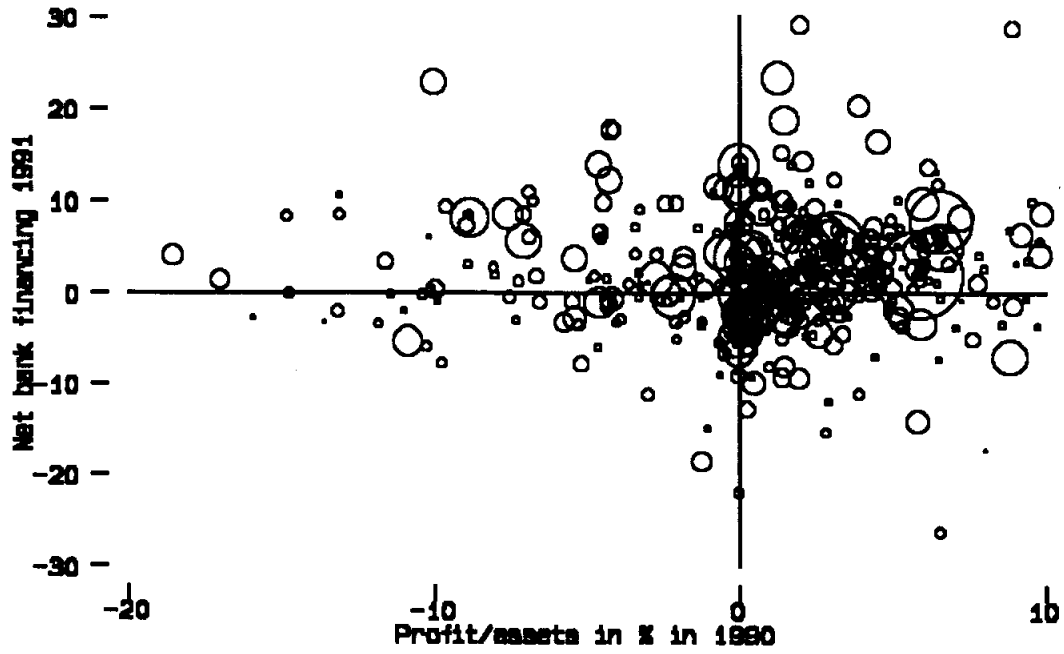


Figure 2: NBF vs. Lagged Output Growth - China 1991

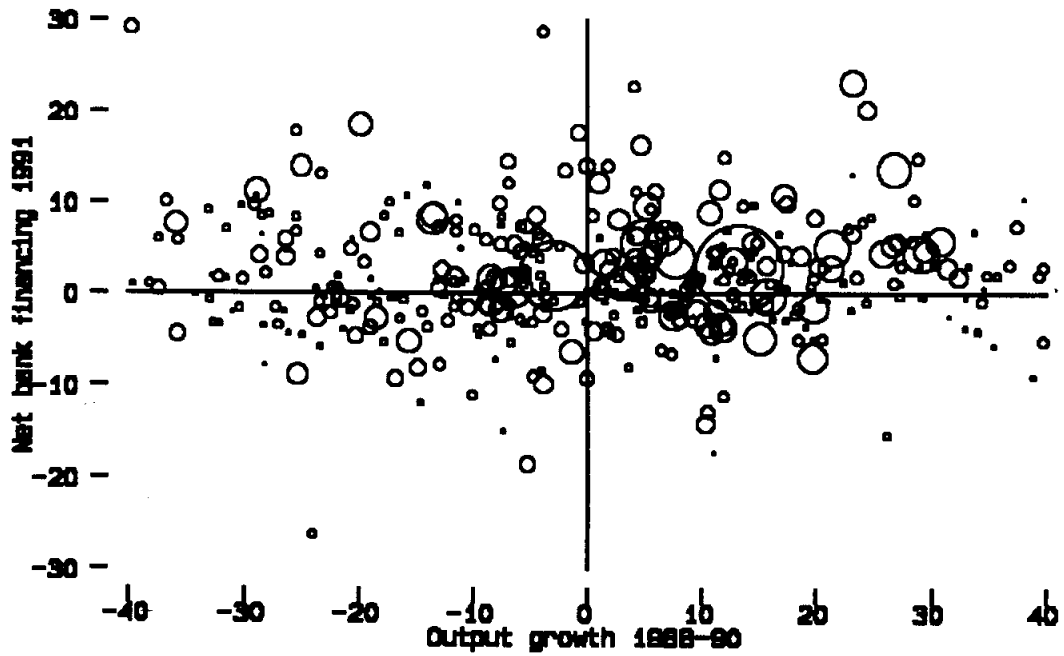


Figure 3: NBF vs. Lagged Net Profit - Hungary 1993

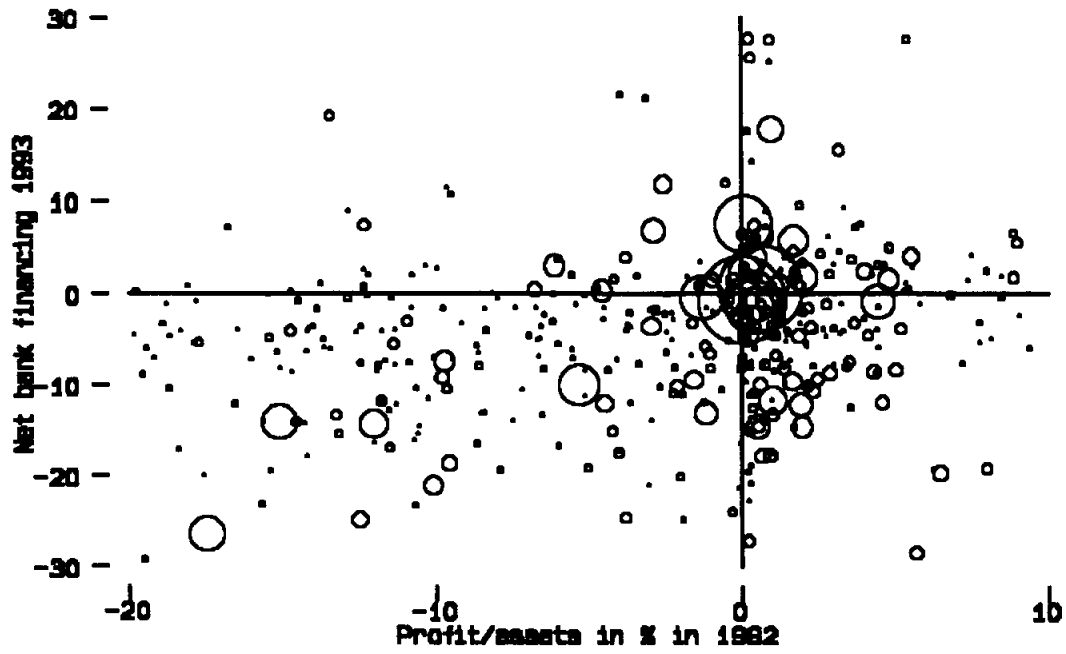
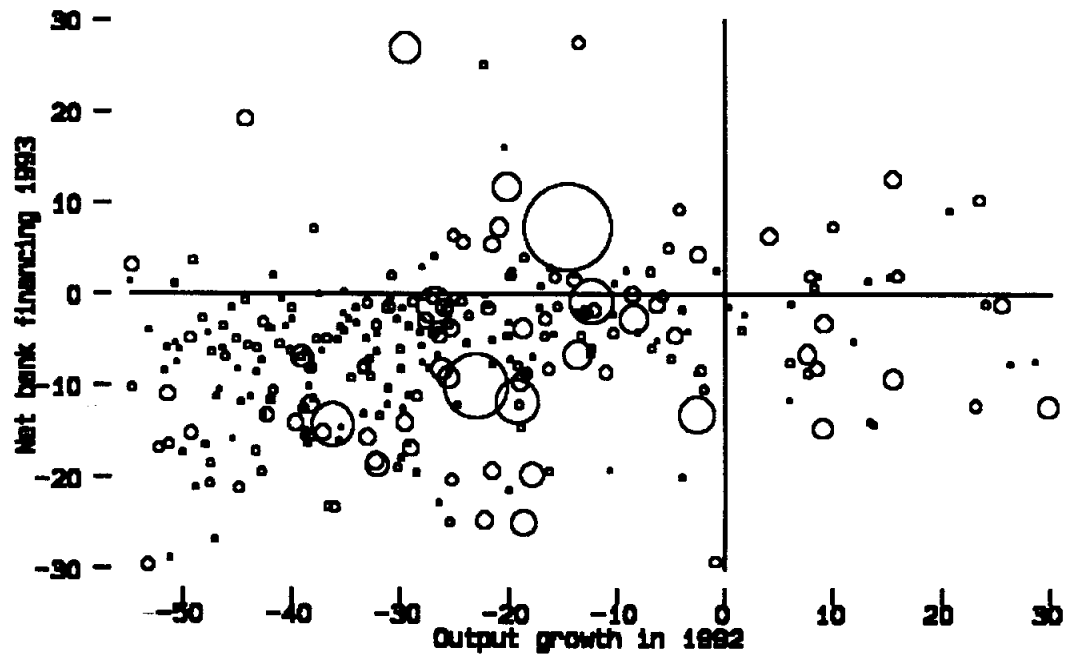


Figure 4: NBF vs. Lagged Output Growth - Hungary 1993



signs that in China trade credit is linked to soft budget constraints, via government policy which has been soft towards firms. In China, as in some of the slower reforming CEEFSU countries, the government has attempted to clear inter-enterprise arrears by injecting credit. As in the CEEFSU cases, the arrears reappeared. This is only natural because trade credit is a normal feature of market economies. We have argued that the best policy in China, as in the CEEFSU countries, is for the government not to attempt to clear such arrears, since this amounts to a bailout of the enterprise sector and creates moral hazard problems as firms, anticipating the bailout, cease paying each other.

We have suggested that, when looking at the bank-enterprise relationship in transition economies, the usual data available on non-performing debt needs to be interpreted carefully, and can usefully be supplemented by using firm-level data to examine the relationship between enterprise performance and net bank financing. We argued that banks in leading CEEFSU transition countries are usually hard, and, using Hungary as an example, showed that in 1993 poorly-performing Hungarian firms did not receive positive net bank financing. In contrast, banks in China seems to be softer: it is hard for banks to resist political pressure from local governments and enterprises to lend money to financially distressed firms. This was reflected in the enterprise-level data we analyzed: in 1991, poorly-performing Chinese firms received positive net bank financing. In other words, although both Hungary and China had bad debt stock problems, only China had a bad debt flow problem. Chinese, but not Hungarian, firms had soft budget constraints.

Tax arrears appear to be an important source of soft budget constraints in CEEFSU countries. The little evidence we have available on China suggests that the situation in China is different and that tax arrears are not, or not yet, a major policy problem in China. More research is called for here.

Schaffer (1995) offers the following explanation of why the tax authorities tolerate the accumulation of tax arrears in distressed firms. Because the distressed firm is typically paying its workers and suppliers out of sales revenue, the firm is generating positive value added. If the tax authority allows the firm to continue to operate it may be able to pressure the firm to pay part of its taxes. If the tax authority takes legal action to have the firm liquidated, the liquidation value will be low and little of the overdue tax liabilities will be paid, the value added currently being generated by the firm will be lost, it will take time for the capital and labor freed up to find alternative uses, and in the meantime the resulting unemployment will be politically costly.

The case of tax arrears in China is, to our knowledge, unstudied. The academic, policy, and journalistic literature focuses on subsidies, bad debts, and trade credit arrears, and tax arrears appear to go unmentioned. This would suggest that, in contrast to the case of the CEEFSU transition countries, tax arrears are not currently a problem in China. The only evidence we have available to us on this come from the survey of Chinese SOEs analyzed above in section 4.

We divided the sample of Chinese SOEs in 1991 into 343 profit-makers and 175 loss-makers, and looked at real increases in tax liabilities in the two categories of firms separately. The median real increase in total tax liabilities between end-1990 and end-1991, measured as a percentage of end-year assets,¹³ was in fact very small in both categories: the equivalent of 0.1% of assets in the group of loss-makers, and no real increase at all in the group of profit-makers. This is in sharp contrast to the findings reported by Schaffer (1998) using the World Bank survey of 200 Polish enterprises in 1993: in that sample, the median real increase in tax liabilities of very unprofitable firms was the equivalent of a remarkable 12% of end-year assets, compared to less than 1% for other firms. The picture from an examination of the concentration of tax liabilities in loss-making firms is similar. In contrast to the case in the CEEFSU countries, there is no concentration of tax liabilities in the loss-making firms in our sample of Chinese SOEs; loss-makers in 1991 made up 34% of the sample and accounted for 30% of the tax liabilities of the firms in the sample.

This evidence supports the view that indeed tax arrears have not so far presented a financial discipline problem in China. Nevertheless, more research is clearly needed, and the CEEFSU experience suggests that if budget constraints become very hard in China, a tax arrears problem may emerge.

6. SUMMARY

In parallel with price liberalization, budgetary subsidies have fallen substantially both in China and in CEEFSU transition countries, and are typically associated with remaining price controls. For this reason, it is difficult to demonstrate that remaining subsidies are clear evidence of soft budget constraints.

The scale of trade credit and "inter-enterprise arrears" in the CEEFSU transition economies, and in China, are roughly comparable to those observed in developed Western economies. More importantly, firms in the CEEFSU countries and in China typically impose financial discipline towards each other. There are, however, some

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Notes

¹ “Soft budget constraint” in this paper is defined as a form of “financial indiscipline” in the enterprise sector. Following Konai (e.g. his 1986 paper in *Kyklos*), the state is paternalistic, hence “weak” or “soft”, and poorly performing firms will be rescued by the state by some means if they are in trouble and known to be in trouble; poor performance or losses result in subsidies and financing. For a more detailed discussion, see Schaffer (1998).

² It is worth noting that these sectors are comparable to the range of subsidized sectors observed in developed Western economies.

³Lo (1997), Table 3.

⁴ For evidence from Poland, see Belka et al. (1995); from Hungary, see Bonin and Schaffer (1995); from Russia, see Alfandari and Schaffer (1995).

⁵ Well-documented examples include Russia in 1992 and Romania on several occasions since 1992.

⁶ For a model of strategic arrears, see Perotti (1997).

⁷ Few banks are quick to admit that they have large amounts of bad assets, even when accounting standards are well established and the banks have staff with experience in classifying assets.

⁸ For a description of the dataset, see Fan et al. (1989).

⁹ For example, most of the coal mining firms in the sample were earning negative profits as defined above, but had non-negative retained profits, presumably because of subsidies.

¹⁰ The results for 1992 are similar and can be found in Bonin and Schaffer (1995) and Schaffer (1998), to which we refer the reader for a more in-depth analysis.

¹¹ The material in this section draws on Schaffer (1995, 1996, 1998).

¹² This is despite the fact that they are accruing fewer taxes than profit-makers, who incur profit liabilities as well as the other taxes.

¹³ Note that we are looking at total tax liabilities, not just overdue tax liabilities (tax arrears).

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