Tightening the Soft Budget Constraint in Reforming Socialist Economies

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EXECUTIVE SUMMARY

i. The soft budget constraint exists when the strict relationship between an enterprise's expenditures and earnings is relaxed and the excess of expenditure over earnings is compensated for by some other institution, typically the state. It is a key structural characteristic of socialist economies and a fundamental cause of inefficiency and chronic shortages in those economies.

ii. Tightening the soft budget constraint is thus widely recognized as one of the central structural reform issues in socialist economies. This paper analyzes major causes for the persistence of soft budget constraints and suggests countermeasures for tightening them.

iii. Mechanisms and Consequences of the soft budget constraint. Budget constraints become softened in four ways: soft subsidies (e.g., negotiable according to cost overruns); soft taxation (negotiable according to an enterprise's financial situation); soft credit (for firms in constant financial distress, without possibility of repayment); and soft regulation (e.g., administrative prices set according to a central "cost plus" principle). Budget constraints are softened not only by the government but also by financial institutions. Although these factors may not be unique to socialist economies, their frequent use and magnitude have been much higher in socialist economies.

iv. Economic consequences of the soft budget constraint are profound. First, firms become less sensitive to changes in interest rates, exchange rates, and relative output prices. Second, a shortage economy results, where no restraint inhibits demand for inputs and investment. Third, with the bankruptcy risk absent and the old production lines protected, innovation and development are undermined.

v. Why does the soft budget constraint cause enterprises to respond slowly to pricing and other policy changes? The firm would like to avoid restructuring and output reductions, if it can change the fiscal, financial and regulatory environment in its favor. Thus, the soft budget constraint helps explain the structural rigidities and weak supply response to external and policy shocks in socialist economies.

vi. The soft budget constraint may raise the investment level of the economy, if the government can accommodate investment demand by limiting income and consumption of the population. However, as will be discussed in Sections III and IV, the soft budget constraint can reduce the quality of investments and entrepreneurial efforts, offsetting and reversing any gain from higher investment. In fact, the negative effect of soft budget constraints on dynamic efficiency seems to be one of the most plausible explanations for the poor growth performance of socialist economies, despite high investment rates.

vii. Causes of Soft Budget Constraints. Why do governments and commercial banks tend to provide ex-post support to loss-making enterprises? Three main motives are apparent: compensation for past limited autonomy, divergence of social surplus from profit, and the sunk cost trap.

viii. In terms of the first factor, when enterprise managers and workers place responsibility for their current poor performance on past government policies and enterprise control, their avoidance of responsibility generates the often cited paternalism of socialist governments. Since the effects of weak enterprise autonomy and heavy centralization of income are cumulative, governments also find it difficult to assign primary responsibility to enterprises even after the enterprises have been given substantial autonomy. Thus, providing autonomy does not automatically put the government in a position to transfer the responsibility to enterprises unless financial problems left over from past interventions can be settled at the same time.

ix. In terms of the divergence between enterprise-level profits and social surpluses, there are three key situations in which such divergence has become a structural characteristic of socialist economies: monopolistic supply structures, exporting at overvalued exchange rates, and binding price controls. In each case, enterprise-level profits typically are lower than the social surplus generated by their activities. This phenomenon creates an incentive for the government to subsidize enterprise losses and undermines the
credibility of the government's announced intentions to tighten the budget constraint. This in turn destroys enterprise incentives to respond to adverse shocks and to undertake restructuring measures that would make ex-post subsidization unnecessary. As a result, the economy becomes trapped in a situation where firms do not restructure and the government finds itself compelled to subsidize them.

x. This analysis has important policy implications for socialist economies' reform efforts. Efforts by the government to tighten the soft budget constraint—without making the structural reforms to eliminate monopolistic structures, overvalued exchange rates, and price controls—are likely to be both unsuccessful and costly. In the absence of such structural reforms, a tough government strategy would need to convince enterprises that the government would be willing to sacrifice the social surplus for the sake of financial discipline. Such a strategy would take time; until enterprises were convinced about government aims, they would not restructure, and the economy would suffer from the sizable foregone efficiency gains.

xi. In terms of the sunk cost trap, even when a project as a whole cannot yield an adequate return, previous investments still may justify additional investments. i.e., when past investments cannot be redeployed easily or when they are sunk. Although provision of additional finance may seem reasonable ex post, it creates incentive distortions ex ante. Enterprises may feel less incentives to increase productivity or reduce costs at any stage of a project if they expect to receive additional financing. Exacerbating the sunk cost factor in socialist economies is the underdeveloped nature of factors, in particular financial markets, which makes resource mobility low.

xii. At the same time, there seems to exist strong incentive distortions for commercial banks in socialist economies to finance loss makers through rescheduling. Generally, they have three options for dealing with debt overhang from loss makers: liquidation, takeover and restructuring, or continued support of those enterprises through debt reduction or refinancing/rescheduling. Banks in socialist economies tend to take the refinancing option since the option for takeover has essentially been closed (with all enterprises either state-managed or self-managed) and debt reduction reduces the amount of expected government support to the loss maker or to the bank (even in the form of compensation to bank management, which is based on accounting profits).

xiii. In socialist economies, expectations of government bailouts exist in an aggravated form, unlike in most market economies, where government bailouts of banks or their debtors is expected to happen only when failures are widespread and threaten the stability of the banking system. By contrast, the banking system in Hungary, for instance, has simply inherited loans from the National Bank. Commercial banks can claim to have no responsibility for lending decisions taken by the government prior to the banks' taking over the loans. Bailout expectations also encourage banks to prolong the survival of borrowers who are unlikely to regain viability. Thus, adjustment in the enterprise sector becomes unduly slow. Effectively what happens is an operational partnership between the bank and its major borrowers at the expense of the government or taxpayers.

xiv. Ownership rights and soft budget constraints. The problem of restricted ownership rights in socialist economies has two aspects. First, the right to appropriate enterprise income is ambiguous. This has a particularly adverse effect on the behavior of profitable enterprises, while the incentive effects of soft budget constraints are particularly detrimental to the decisions of enterprises with negative or low profits. However, by undermining profit-making incentives, the ambiguity in ownership rights causes enterprise profits to diminish and thereby makes a larger share of the enterprise sector subject to the pernicious effects of the soft budget constraint.

xv. Second, decision-making powers and rights to control assets are either ambiguous or difficult to transfer. In particular, creditors cannot easily assume control rights when enterprises accumulate arrears. This makes financial institutions unwilling to lend for major restructuring operations. Since liquidation is costly, they reschedule debts and interest payments. Therefore, restructuring efforts cannot be efficiently
supported by the financial system, and the state has to assume the role of a financial institution, which in turn tends to soften the budget constraint.

Credibility of hard budget constraints. Although the existence of a gap between social surplus and private surplus may make it optimal for the government to provide ex-post support to loss makers, this would not be harmful for the economy if this support created no adverse incentive effects. However, such adverse incentive effects are likely to exist. In fact, the gap between social surplus and profit undermines the credibility of hard budget constraints and can substantially hurt dynamic efficiency gains in industry. This is because a firm can appropriate the difference between social surplus and profit by under-investment.

Also, a soft budget constraint particularly hurts the willingness of enterprises to adjust to large shocks (see formal presentation in subsection IV-A, which focuses on the monopolistic supply structure as a structural cause for the gap between social surplus and profit).

Tightening the soft budget constraint. Tightening the soft budget constraint requires the following measures. First, structural reforms that reduce or eliminate the gap between enterprise profits and the social surplus are needed to remove the government's ex-post incentives to help enterprises. Second, the government needs to establish effective adjustment assistance for workers; this can mean redirecting financial and other assistance that formerly supported loss-making enterprises. This policy will help eliminate current biases in government policies that favor efforts to maintain the status quo or rehabilitate against exit. Third, the government should also reduce its discretion to help loss-making enterprises by leaving allocation of investment resources to financial institutions. This policy must complement the establishment of an adequate banking regulation and supervision system. Finally, if commercial banks are to participate in serious restructuring and impose financial discipline on enterprises, there must be arrangements to enable creditors to assume control of enterprises in financial distress. Privatization or the transformation of enterprises into shareholding companies is an efficient instrument to implement this policy. An alternative is to create a bankruptcy reorganization mechanism that explicitly guarantees creditors the right of control.
I. INTRODUCTION

1.01 The concept of the soft budget constraint was introduced by Kornai [1] as a fundamental cause of chronic shortages in socialist economies: "the softening of the budget constraint appears when the strict relationship between expenditures and earnings has been relaxed, because excess expenditure over earnings will be paid by some other institution, typically by the state." The soft budget constraint has been recognized as a key structural characteristic of socialist economies, and tightening of the soft budget constraint is regarded as one of the central issues in the economic reform of these economies.

1.02 Most literature has focused on analyzing the consequences of soft budget constraints; relatively less attention has been devoted to its causes. Kornai goes only as far as associating the soft budget constraint with the paternalistic role of the state. The objective of this paper is to analyze the causes of the soft budget constraint and to suggest effective strategies for tightening it.

1.03 This section reviews how the budget constraint is typically softened and what are its consequences, based on Kornai's analysis. He identifies four ways in which budget constraints become softened:

- **Soft subsidies.** Subsidies are negotiable and adjusted to past, present or future cost overruns.
- **Soft taxation.** Taxes are negotiable and tailored to the financial situations of enterprises.
- **Soft credit.** Credit contracts are not enforced; unreliable debt service, postponement and rescheduling are tolerated. Soft credit is used to assist firms in chronic financial trouble, without real hope of repayment.
- **Soft administrative prices.** Prices are set administratively according to some permissive "cost plus" principle.

1.04 These factors contributing to soft budget constraints are not peculiar to socialist economies. Ex-post subsidies, tax exemptions and soft loans to loss-making enterprises have been widely used in many market economies. Granting trade protection to declining industries is another instrument that even Western governments have used to help companies in financial difficulty (Huffbauer and Rosen (1986), Hall (1986)). Also, it has been recognized that deposit insurance schemes utilized by financial intermediaries, while widespread, can reduce financial discipline on banks and encourage their excessive risk taking. Yet while soft budget practices exist elsewhere, their frequency and magnitude have been much higher in socialist economies.

1.05 Kornai (1986) indicates three major consequences of the soft budget constraint:

- **The price responsiveness of the firm declines.** Firms become less sensitive to changes in interest rates, exchange rates, and relative output prices.
- **The system becomes a shortage economy.** No self restraint inhibits demand for inputs and investment.

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1.06 The reason that soft budget constraints cause enterprises to respond slowly to price changes is clear. Rodrik (1989) recently has given a more formal interpretation. A negative shock to the resource constraint of a firm increases the intensity of its effort to change the fiscal, financial and regulatory environment in its favor, to accommodate the shock. This, in turn, enables the firm to avoid reducing its output in response to the shock. Thus, the soft budget constraint helps explain the structural rigidities and weak supply response to external and policy shocks in socialist economies.

1.07 The reason for unbridled demand for inputs also seems straightforward. The budget constraint ultimately must be accompanied by redistribution of income among enterprises via high-level taxation or inflation. Yet each firm deciding its level of expenditure does not fully take into account the ultimate general tax increase or inflation that inevitably accompanies every firm’s effort to soften its budget constraint. Therefore, the soft budget constraint makes the private cost of expenditure smaller than its shadow cost and tends to create aggregate demand in excess of aggregate output.

1.08 The effect of the soft budget constraint on dynamic efficiency may not be as clearcut as the first two consequences. It might be expected that a strong drive for investment, due to the soft budget constraint, would also imply a strong drive for investment in cost reduction. However, as will be discussed in Sections III and IV, the soft budget constraint may reduce the quality of investments and entrepreneurial efforts, offsetting and reversing any gain from higher investment. In fact, the negative effect of soft budget constraints on dynamic efficiency seems to be one of the most plausible explanations for the poor growth performance of socialist economies, despite high investment rates.

1.09 Section II of this paper reviews the major mechanisms by which budgets are softened and gives a short account of recent reform measures undertaken in Hungary and Poland. In Section III, we discuss the major reasons behind soft budget constraints. Section IV focuses on the divergence of social surplus from profits, discusses how such gaps undermine the credibility of hard budget constraints, and how they result in dynamic efficiency losses. Section V proposes strategies for tightening the soft budget constraint.

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2/ In this regard, soft administered prices may have different implications for macroeconomic equilibrium, compared to other sources of the soft budget constraint. This is because the first order effect of a price increase is only a transfer of income from consumers to the enterprise and therefore does not result in an immediate increase of aggregate expenditure. Nevertheless, excess demand pressures may build up if higher prices lead to higher wages.
II. THE MECHANISM OF THE SOFT BUDGET CONSTRAINT

2.01 In traditional centrally planned economies, production and investment plans were determined by government, with enterprises responsible mainly for implementing the plans. Resources were allocated centrally. Enterprises were de facto administrative units within the government hierarchy, with little autonomy and accountability. Firms did not have independent financial responsibility since the government essentially bore all costs of implementing the plans. The budget constraint was extremely soft, with financial flows determined by social and political objectives.

2.02 Economic reform in socialist economies has reduced the role of plans. Enterprise autonomy has increased. As early as 1968, Hungary abolished all production and investment directives to enterprises. Similar steps were taken in Yugoslavia in the early 1950s and in Poland in the 1970s. Profit has become increasingly accepted as the most important measure of enterprise performance. Remuneration of management and workers has also become linked with the profit performance of enterprises, through profit-sharing schemes.

2.03 However, the potentially positive impact of profit making objectives has been distorted and undermined by the pervasive impact of soft budget constraints. Instruments of soft budget constraints can be classified into three groups: current tax exemptions and subsidies; capital subsidies; and contingent regulations. This section reviews the past functioning of these instruments and recent reform measures.

A. Contingent Taxes and Subsidies

2.04 In socialist economies, enterprises are subject to heavy current taxes and subsidies. In Hungary, in the aggregate, enterprises were taxed at about 57% of their value-added in 1985. At the same time, enterprise subsidies amounted to 41% of enterprise taxes. As shown in Appendix Table 1, taxes and subsidies were highly non-uniform across sectors. Some sectors received subsidies far exceeding their value added. Subsidies and tax write-offs have been inversely related to the profitability of enterprises. Taxes, including dividends and interest payments, have been negotiable ex post, favoring loss-making enterprises. Many subsidy schemes have tended by design to accommodate the production cost increases of enterprises.

2.05 It is not the mere existence of tax exemptions and subsidies that generates the soft budget constraint problem. Whether taxes and subsidies act to soften budget constraints depends on the rules governing their imposition and implementation and, more important, on how rigorously these rules can be enforced. In particular, given that prices are highly distorted due to extensive controls, the imposition of product-specific taxes and subsidies could in theory correct these distortions. Even if prices are not distorted, production taxes and subsidies, if dependent only on those parameters beyond the control of enterprises, would result only in the loss of allocative efficiency.

2.06 However, in practice, tax exemptions and subsidies have been significantly contingent on production costs of enterprises. This is because

- even when tax exemptions and subsidy rules have no built-in mechanism for covering the losses of each enterprise, as in the case of wage taxes, their applications have been negotiable ex-post by each enterprise, and

3/ For example, among the 500 largest enterprises in Poland, most loss-makers were in the food products and agricultural inputs industries; products of both industries sold at state-controlled prices, which were set very low (Schaffer (1990)). Without subsidies, these products would have been under-produced.
other tax and subsidy systems have built-in mechanisms for covering the production costs of each enterprise.

Since costs are significantly affected by how much effort workers and managers put into reducing them, this makes taxes and subsidies contingent on their performance, creating severe incentive problems. These adverse incentive effects make tax exemptions and subsidy schemes in socialist economies sources of soft budget constraints.\(^4\)

2.07 First, let us look at taxes. In socialist economies the enterprise tax often a dominant source of government fiscal revenue. For example, enterprise taxation contributed more than 90% of Poland's tax revenues in 1989. Enterprises are taxed for turnover, investment, employment and profit. These taxes are often negotiable ex post. It is reported that 1,200 to 2,500 decrees concerning enterprise tax regulations were issued yearly by the Ministry of Finance in Hungary in early 1980s (Tardos (1986)). Fifty percent of these decrees are said to have had a retrogressive effect, i.e., they often changed the tax on income earned in the past. In particular, loss-making enterprises often are exempted from paying taxes and interest. In 1985 and 1986, Hungary's 26 largest loss-making enterprises received special exemptions from tax and interest obligations, amounting to 16% of their value added.

2.08 Second, let us look at subsidy schemes. The stated objectives of the subsidy schemes in socialist economies are diverse: subsidizing a particular group of consumer goods such as food, fuel and medicine; offsetting cost disadvantages for certain domestic industries against foreign producers, such as in the coal and steel industries in Hungary; compensating for losses due to CMEA \(^5\) trade (the CMEA price equalization scheme); and encouraging exports. Subsidies may be provided not only in the form of government's current expenditure but also through allocation of underpriced resources such as foreign exchange, raw materials and energy. Supporting loss-making enterprises through the allocation of underpriced resources is widely seen in China.

2.09 Most subsidies intended to offset the cost disadvantage of domestic industries are clearly contingent on the cost of production: the higher the production cost, the higher the subsidy. For example, in Hungary subsidies provided to the coal and metallurgical industries simply fill the gap between domestic and foreign costs. Similarly, although the CMEA price equalization scheme is often claimed to offset price distortions existing in CMEA trade, it also tends to be contingent on production costs. This is because governments guarantee that producers do not suffer losses from exporting to other CMEA countries. Even consumer price subsidies are contingent on production costs, despite the fact that they are normally paid to consumers, wholesalers or retailers. This is because the subsidy rate often is designed to make up the difference between production costs and politically determined consumer prices. Thus, although the stated objectives of subsidy schemes are diverse, all of them tend to be contingent on the production costs of domestic industry.

2.10 The muting effect of these contingent tax and subsidy schemes on the profit incentive has been found to be very strong. Kornai (1986) reports that for Hungary's state enterprises in 1982, the actual (i.e., before taxes and subsidies) profitability of enterprises had almost no correlation with their final

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\(^4\) See Vodopivec (1989, 1990) for a review of the literature on the adverse effects of tax and subsidy schemes on productivity in socialist economies and an empirical investigation of the case of Yugoslavia.

\(^5\) CMEA = Council of Mutual Economic Assistance.
financial profitability. Thus, tax and subsidy schemes redistribute income from profitable enterprises to lossmakers so strongly as to leave almost no incentive effect based on profitability.

2.11 In a similar study on large enterprises in Poland, Schaeffer (1990) finds that the tax-subsidy system was again operated to equalize profitability of enterprises. Most enterprises whose pre-tax/pre-subsidy profits were negative ended with larger than average profits after taxes and subsidies. In the case of profit-making enterprises, the correlation coefficient between original and final profits was positive but in the case of loss-making enterprises it was negative. This suggests that loss-making enterprises with the lowest original profitability ended up with the highest final profitability.

2.12 In the case of Poland, subsidies have been classified as product-specific and enterprise-specific. The former are supposed to compensate for unfavorable output or input prices that result, for example, from price controls. The latter may be paid, for example, "to enterprises with old equipment and, therefore, high operating costs." According to Polish statistics, only a tiny fraction of subsidies are supposed to be "enterprise-specific" (Schaeffer, 1990). However, Schaffer's econometric work on subsidies reveals that sales have been subsidized at a negative rate and costs have been subsidized at a positive rate, the two rates being approximately equal in absolute value. Hence, rather than taxing or subsidizing specific inputs or outputs, which would be the case if subsidies were simply counteracting unfavorable prices, the subsidy scheme was really a profit/loss subsidy. Furthermore, there was also evidence that the subsidy scheme treated profit- and loss-making enterprises asymmetrically. Although among loss-makers a 1% increase in losses increased subsidies by 1%, the rate was much lower in the case of profit makers, about 15% to 30%. Finally, Schaeffer also finds evidence of firm-specificity in the distribution of subsidies. In other words, controlling for observable firm characteristics such as cost and sales, subsidies differed significantly across firms, suggesting the presence of substantial negotiability.

Recent Developments

2.13 Fundamental reform of tax and subsidy schemes has been one of the central issues in the socialist economies. Recently, both Hungary and Poland have taken drastic measures to reduce both the level and variability of enterprise taxes and subsidies.

2.14 In Hungary a complete reshaping of the tax system took place in 1988. Personal income tax and a value-added tax were introduced, eliminating wage taxes, turnover taxes, and some other enterprise taxes. This reform automatically implied elimination of all existing and potential preferences and exemptions. The replacement of wage taxes by a personal income tax was a highly strategic move: wage taxes had been paid by enterprises and were subject to bargaining with the government. Income taxes, on the other hand, are paid by workers and are much less negotiable, if at all. As a result, although the total labor cost burden of enterprises (wage costs plus taxes) has declined only slightly, the potentially negotiable part of total labor costs (i.e., the wage tax) has vanished. Loss-making enterprises may be able to get wage tax concessions from the government, but they can hardly get concessions from the labor market. Budgetary control over subsidies also has been tightened although no drastic measures, such as with tax reform, have been undertaken.

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6/ The adverse effects of redistribution of income on work incentives resulted in low productivity. Vodopivec (1990) provides empirical evidence that both intrafirm and interfirm redistribution of income in Yugoslavia resulted in substantial output losses.

7/ Before the tax reform the total cost of labor was equal to wage tax plus wage cost. After the reform, it is equal to wage cost only, which in turn consists of personal income tax and net return to labor.
2.15 The Polish reform abolished a wide range of price controls that had necessitated enterprise subsidies. It reduced the percentage of controlled prices from 50% in 1989 to 10% by January 1990. The scope and size of subsidies have been reduced from about 14% of GDP in 1989 to a planned 6% of GDP in 1990. The stated intention is that state subsidies will be product-specific and not enterprise-specific. Tax exemptions also have been severely curtailed. The government also intends strict enforcement of sharply increased dividend requirements on state-contributed capital. Moreover, the government is planning to introduce a personal income tax and value-added tax in 1991 to reduce and streamline enterprise taxation.

2.16 The governments of Hungary and Poland appear to have made substantive progress in significantly reducing contingent taxes and subsidies. In many other socialist countries, such as China and Yugoslavia, tax and subsidy schemes still play a significant ex-post income redistribution role.

2.17 Even in Hungary and Poland it remains to be seen to what extent tax reform will be enforced and uniformity in tax rates will be achieved. There is a possibility of exemptions from new taxes. Moreover, even if the reform of the fiscal system can be sustained, the financial system may prolong the soft budget constraint. Therefore, whether the soft budget constraint can be tightened will depend on policies toward loss-making enterprises, industrial restructuring, and bankruptcies.

B. Contingent Capital Subsidies

2.18 When a subsidy or tax abatement does not cover current losses sufficiently, the solvency of loss-making enterprises becomes threatened. In socialist economies, however, governments often provide fiscal support, such as debt writeoffs, substitution of debt by equity, provision of new credit, or new equity grants to ensure the survival of enterprises with low profitability. In 1985-86 the volume of capital subsidies provided to large loss makers in Hungary was three times as large as current subsidies (Appendix Table 2).

2.19 The availability of capital subsidies to unprofitable enterprises does not imply that there was no exit mechanism for these enterprises. On the contrary, the administrative mechanism for liquidation has existed for a long time in these economies. Moreover governments in principle have had the authority to replace inefficient management, or at least to block its reappointment, by invoking their right to monitor and control enterprises. Furthermore, state financial support has been provided normally under some conditionalities. For example, government may provide financial support in exchange for commitment from an enterprise to raise the level of production efficiency. Rehabilitation programs also stipulate such commitments by enterprises.

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8/ Enterprise assets were reevaluated in January 1990. Enterprises have to pay 32 percent per year on the value of state-contributed capital. Failure will trigger the government assessment of enterprises, which would lead to restructuring, sales or liquidation of the enterprises. See Section V for more discussion on dividend requirements.

9/ In fact, exemptions and exceptions are already widespread in the current tax system in Hungary (Gray (1990)).

10/ For example, in Hungary the 1977 law on state enterprises stipulates that the supervisory authority may liquidate the enterprise if (1) the national economy does not require its activity, (2) profitable activity of the enterprise cannot be ensured, or (3) the activity can be more profitable within the framework of another enterprise.
2.20 Nevertheless, this administrative mechanism for dealing with loss-makers has generally failed to impose significant financial discipline on enterprises because of the strong bias for government to support rehabilitation. The following patterns are typical:

(i) Rare liquidation. Loss-making state enterprises are almost never liquidated. Liquidation of cooperatives is relatively common, however. Rehabilitation or state-supported mergers have been the common approach for state enterprises in financial trouble.

(ii) Limited sanctions on management and workers. It is uncommon in large loss-making enterprises for management to be replaced, even when substantial state financial support must be provided for its survival. This suggests that the bargaining power of the government is weak.

(iii) Investment subsidies for rehabilitation. Government provides investment subsidies for loss-making enterprise to "restore" production efficiency. Typically the government provides state equity support for the rehabilitation investment, since the enterprises cannot obtain commercial finance.

(iv) Low or negative correlation between profitability and investment. Profitable enterprises or sectors do not receive more investment resources than unprofitable ones. Available evidence suggests a perverse relationship: enterprises or sectors with low profitability receive more investments. Kornai (1986) reports a negative correlation between original, as well as reported, profitability and subsequent investment activity (investment expenditure/value of physical assets) for Hungarian enterprises for 1975 to 1979. Knight (1984) reports a positive correlation between investment in 1981 and the losses during the previous year for Yugoslav industries.

Recent Developments

2.21 As a major step for strengthening financial discipline, bankruptcy laws have been enacted in Poland (1981), Hungary (1986), and China (1986). These allow creditors to initiate the process of liquidation. Before the introduction of bankruptcy laws, financial institutions did not have such a right; it belonged solely to the government.

2.22 Bankruptcy laws are generally expected to produce the following two effects. First, financial discipline may be strengthened by the laws, since financial institutions with profit and loss responsibility are expected to be able to force liquidation of unprofitable production more easily than governments can. There may be an immediate economic gain simply due to the closure of inefficient production facilities. Second, bankruptcy laws provide safeguard mechanisms for creditors, which improves the efficiency of credit markets. Opportunistic behavior of enterprises will be deterred more effectively, and access to credit by efficient enterprises will improve. This is the long-term gain.

2.23 As of early 1990, no major effects of restructuring measures or bankruptcy laws are evident. Commercial banks have not been very active in liquidating or in supporting enterprise restructuring. Observers note that in Hungary the original idea of the bankruptcy law (the liquidation of low-efficiency enterprises) is not being applied.

11/ Of course, the welfare implications of such evidence are unclear since accounting profitability does not reflect economic profitability under widespread distortions.

12/ Konovalov (1989) reports that investment has no significant relation at all with profitability, measured either in terms of the ratio of net operating income to business fund or in terms of wages for Yugoslavian firms in 1985 and 1986.
workshops and factories) has lost ground (Sipos and Tardos (1986)). Frustrated by the inaction of commercial banks, the government of Hungary is considering a bankruptcy law that would automatically trigger bankruptcy proceedings when payments arrears reach a certain level.

2.24 In Poland, the concept of bankruptcy was introduced through the law on the improvement of government-owned enterprises—a law that deals with rehabilitation of enterprises as well as enterprise failure. Nevertheless, few companies have been declared bankrupt by their creditors. Between 1984 and 1987, out of a total of 142 enterprises (46 state enterprises and 96 cooperatives) that failed, only three were liquidated. The rest either were taken over by other companies or divided into smaller independent units (Seweryn, 1989). In January 1990, the bankruptcy legislation was amended to allow any creditor whose obligations were not met on time to initiate bankruptcy proceedings.

2.25 These socialist governments themselves still support the rehabilitation of large industrial enterprises. The bankruptcy law stipulates the mechanism for state-supported rehabilitation in Hungary, for example. The necessity of state support for rehabilitation—including financial support from the rehabilitation fund—is decided by the Rehabilitation Office of the Ministry of Finance after consultation with relevant ministries and organizations. Two sets of conditions for state-initiated economic rehabilitation are specified by the bankruptcy law: necessity of rehabilitation with respect to regional employment, defense and international obligations (further exceptions can be decided by the Council of Ministers); and adequate perspective to restore production profitability through the implementation of a rehabilitation plan. In addition to these stated criteria, the need for foreign exchange seems to be another major reason for the government to provide financial support for rehabilitation.

2.26 In China, the bankruptcy law is still largely symbolic since it is very unlikely that commercial banks will start liquidating state enterprises on a large scale in the near future, given the fact that credit decisions are still strongly under the control of the government. Non-state enterprises, on the other hand, go out of business quite frequently.

C. Contingent Price Regulation

2.27 Although economic reform in the past has significantly increased the scope of enterprise autonomy, enterprises in socialist economies have been subject to various regulations covering pricing, investment, and wages and employment. The problem in socialist economies is that the regulatory conditions have been negotiable and have tended to accommodate inefficient enterprises.

2.28 One of the most persistent regulatory interventions in socialist economies is price regulation. Given the shortage of many goods, unregulated pricing could lead to substantial price increases—and increased profits for the producers of these goods. Instead, enterprises in the socialist economies are allowed to set prices that only barely or even insufficiently cover their costs.

2.29 Even in Hungary, one of the most advanced in price reform among socialist economies, price regulation is still significantly contingent on production cost. Hungary initiated price reform in 1968, with the aim of setting prices at or close to border prices. In particular, prices of important industrial inputs such as energy and steel have been centrally set at convertible currency import prices instead of at production cost. In the industrial sector, around 20% of industrial product is subject to this CIF reference pricing (see Table 3 in Appendix). However, pricing of most industrial goods is subject to a general pricing rule, which imposes the following three conditions on the pricing decisions by enterprises:

- The price level should be set so as to balance domestic supply and demand.
- The level of prices should reflect a consideration of the cost of production.
The setting of prices must observe the terms of the Law on Unfair Economic Practice. In particular, the level of prices should not exceed the convertible currency import price of a similar good, adjusted for quality differences.

2.30 If the reference convertible currency import price could be unambiguously agreed between enterprises and the government, price regulation would not be contingent on production cost. However, a large array of exportable products are not imported. Therefore, the convertible currency import prices cannot discipline or provide a reference for a bulk of export oriented industries. In fact, in 1987, the Hungarian government abolished the export pricing rule,13 which had governed the pricing of more than 40% of industrial products, in favor of the general pricing rule. The reason for this shift was precisely that under the export pricing rule enterprises could increase domestic prices in excess of production cost increases when the exchange rate was devalued. The general pricing rule prevented such increases.

Recent Developments

2.31 Hungary and Poland have been making significant progress in deregulating economies. With respect to price reform, the Polish government has decided to liberalize essentially all industrial prices. The Hungarian government has also liberalized prices significantly by reducing the scope of the goods the prices of which are centrally determined, although all pricing decisions are still subject to the general pricing rule.

13/ The export pricing rule imposes three conditions on enterprises:

1. the average profit margin on domestic sales must not be higher than that on convertible currency export;
2. the average price increase of domestic sales must not be higher than that of convertible currency export; and
3. the domestic sales price of individual product must not be higher than the convertible currency import price of a similar good, adjusted by quality difference.
III. CAUSES OF SOFT BUDGET CONSTRAINTS

3.01 Having analyzed the major channels through which budget constraints are "softened," we can now concentrate on the causes of soft budget constraints. In this section we first discuss why governments and commercial banks have systematically tended to provide ex-post support to loss-making enterprises. The section then analyzes how the ambiguity of ownership rights has reinforced and exacerbated this tendency.

A. Why Does the Government Help Loss Makers?

3.02 The literature as well as our interviews with government officials and enterprises reveal three main motives for the governments of socialist economies to help loss makers: compensation for past limited autonomy, divergence of social surplus from profit, and the sunk cost trap.

Compensation for past limited autonomy

3.03 Loss-making enterprises have strongly pressured governments for financial help by arguing that their losses are the responsibility of the state since enterprise autonomy had been limited and enterprises heavily taxed in the past. According to Papanek (1986), half the financially troubled Hungarian enterprises reviewed by him listed state intervention among the most important causes of their trouble. Budvari (1988) gives the following account: "Despite public accusations, backstage the leadership was fully aware that in most of the cases insolvency could not be blamed on company mismanagement. Rather, the causes could be traced back to the unpredictability of government regulations, the burden of supply regulations, the confusion and instability of the price system, and last but not least to chaotic COMECON contracts and prices. Under the circumstances it would have been absurd to conduct bankruptcy proceedings against the companies that went bankrupt due to one of the above causes."

3.04 Since the effects of weak enterprise autonomy and heavy centralization of income are cumulative, governments find it difficult to assign major responsibility to enterprises even after the enterprises have been given substantial autonomy. Providing autonomy does not automatically put the government in a position to transfer the responsibility to enterprises unless financial problems leftover from past interventions can be settled simultaneously.\(^{15}\)

Divergence of social surplus from profit

3.05 The second major factor behind governments' help to loss makers is more of a pure economic or structural nature and has to do with the existence of the social surplus that would be lost if a loss maker goes out of business. A loss maker can still generate a positive social surplus when prices are distorted or when the absence of alternative suppliers puts consumers' surplus at stake. A positive social surplus in turn provides an economic reason for the government to prevent the exit of a loss maker. Ex-post this increases the national welfare. However, as we formally show in Section IV, this generates a credibility problem for the hard budget constraint and creates an incentive distortion against improving efficiency: realizing that hard budget constraints are not credible and that ex-post the government will have to help the loss-making enterprises, neither managers nor workers have incentives to restore efficiency through more effort.

\(^{14}\) Social surplus here means the total economic benefit of production, which may not be identical to the profit appropriated by the producing firm under distorted and/or noncompetitive economies.

\(^{15}\) See Kornai (1986b) for a similar explanation of the paternalistic attitude of the state bureaucracy.
3.06 There are three especially important cases where the social surplus diverges from the private surplus: overvalued domestic currency, a monopolistic supply structure, and binding price controls. All seem to be prevalent in socialist economies.

3.07 Overvalued domestic currency and foreign exchange shortages. One of the major reasons mentioned by the Hungarian government for state support to the coal mining and the metallurgical sectors is the need for foreign exchange. Although Hungary's geological conditions are not favorable for coal mining, the government considers it worthwhile to support coal under the circumstance of an acute foreign exchange shortage. Similarly, since steel is a major export item for the convertible currency market, state support for the metallurgical sector is considered warranted. The foreign exchange shortage is a significant consequence of overvalued domestic currency, which is probably one of the most important price distortions in socialist economies. Given an overvalued currency, a loss-making enterprise may still be considered worth saving if it is a significant exporter. The government then finds it worthwhile to save major foreign exchange earners or savers from bankruptcy even if this undermines financial discipline.

3.08 Monopolistic supply structure and domestic shortages. Another major reason for a government to support loss-making enterprises stems from the monopolistic supply structure in the socialist economies. Exits are likely to cause bottlenecks in the domestic economy since an alternative supply usually is not available. Tárdos (1986) states: "Thus, at least concerning the short-term, they (enterprises in financial trouble) negotiate a favorable situation by convincing their state administration partners that the postponement of assistance or its extremely low degree may cause such problems which will result in unfavorable consequences (production interruption, worsening of product supply, unemployment, etc.)."

3.09 Reviewing the policy discussions concerning the liquidation of the Business Machine and Precision Engineering Enterprise (IGV) of Hungary, Voszka (1986) states that "IGV's monopolistic position in home production spoke, therefore, against liquidation or the cessation of the enterprise's lines of production, as this would cause supply problems in a situation aggravated by foreign exchange restrictions and the mechanism of the CMEA cooperation." Although IGV was liquidated—a rare case of liquidation of a state enterprise in Hungary—its position as the only home producer of many precision engineering products clearly caused serious government concern over its exit.

3.10 Binding price controls. Another important source for the gap between social surplus and profit is price control. For example, due to the control of food prices in Poland, loss-making enterprises have been concentrated in food processing industries. When binding price controls reduce sales prices below their shadow values, the government may find it optimal to provide ex-post support rather than have the plants close down.

Sunk cost trap

3.11 Sunk cost is a third major cause behind government support to loss makers. Even if it is found ex post that a project as a whole cannot yield an adequate return, previous investments still may justify additional investments. This often occurs when past investments cannot be redeployed easily or when they are sunk. Although sunk costs may make provision of additional finance reasonable ex post, they create incentive distortions ex ante. If enterprises expect to obtain additional finance by demonstrating

16/ Buyers will try to prevent an enterprise's exit by surrendering their consumer surplus. However, there is a free rider problem. When the number of buyers is large, their coordinated support to the supplier will become very difficult to achieve.

17/ For example, besides the need for foreign exchange, the effective use of existing resources, labor, and facilities was one of the most important reasons for supporting restructuring investments in the coal mining sector in Hungary.
that, given past investments, more investments will pay off, they have less incentives to increase productivity or reduce costs in the earlier periods of a project. Although such an incentive distortion exists everywhere, its degree seems to be high in socialist economies. This is particularly so because in these economies the underdeveloped nature of factors, in particular financial markets, makes sunk costs high.

3.12 The magnitude of sunk costs depends not only on technological factors but also on market opportunities for resource redeployment. In particular, as we shall see in the next section, the absence of control rights biases financial institutions against providing resources for restructuring investments to financially troubled enterprises. Consequently, the possibility that liquidations may result in economic losses is high if the government does not intervene. However, when the government does intervene and substitutes for missing financial institutions, it finds it more difficult to reject refinancing projects that can be "saved."

B. Why Do Commercial Banks and Other Economic Entities Help Loss Makers?

3.13 Commercial banks. One of the major objectives of establishing a commercial banking system in socialist economies is to tighten the soft budget constraint by linking the allocation of financial resources to the credit-worthiness of enterprises. Somewhat surprising in Hungary and Yugoslavia is the apparent willingness of commercial banks and other economic entities to finance loss-making enterprises. The following incentive distortions seem to account for this development.

3.14 Commercial banks generally have three options for dealing with loss-makers with debt overhang: liquidation, takeover, or continued support of those enterprises through either debt reduction or refinancing (rescheduling or refinancing interest payments), as shown in Table 1. In socialist economies a stronger bias exists for commercial banks to take the refinancing option. This is because, first, the option for takeover has essentially been closed, since almost all enterprises are either state-managed or self-managed. Commercial banks cannot control even those enterprises that cannot meet repayment obligations unless they are transformed into share-holding companies with no restrictions on the participation of external (i.e., non-state or non-worker) investors. Although Hungary's association law (1988) and the law of transformation (1989) allow the establishment of share-holding companies, this transformation of existing enterprises cannot take place without the consent of state or enterprise councils. Without such approval, commercial banks have no other choice than to support existing loss makers through either debt reduction or refinancing, since liquidation is costly.

3.15 Second, there is a bias toward refinancing rather than debt reduction or liquidation, because debt reduction reduces the amount of expected government support to the loss maker or to the bank. It is well known that for enterprises that cannot repay their current obligations but that may become profitable if they undertake restructuring investments and increase cost reduction efforts, debt reduction may be beneficial for both banks and borrowers. Under these circumstances, a high level of inherited debt diminishes the incentives for firms to undertake restructuring investments and increase effort because the returns to higher efficiency are completely appropriated by creditors. However, if such firms do not regain efficiency, creditors cannot be repaid since there will be no surplus to appropriate. Therefore, reducing the face value of debt to a level that would make it worthwhile for the debtor to regain production efficiency may be beneficial for both the creditor and the debtor. In most cases, debt reduction needs to be complemented by provision of additional funds from creditors so that restructuring can take place. Hence, potentially viable enterprises would expect a package of debt reductions and new money, while banks would force liquidation of unviable firms.

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18/ This point is emphasized by Tardos (1986), who states that a general hardening of the financial constraints would lead to mass bankruptcy in Hungary, given its underdeveloped financial market.

19/ As we discuss more extensively in Section III C, underdevelopment of the financial market has been caused inter alia by restrictions on capital ownership.

20/ This argument often is made in the international debt literature. See Froot (1988) and Claessens and Diwan (1989).
<table>
<thead>
<tr>
<th>Legal Restrictions</th>
<th>Private Incentives for Commercial Banks</th>
<th>Private and Social Incentives for Commercial Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strategic Effect On Government Support to Enterprise</td>
<td>Option Value of Debt</td>
</tr>
<tr>
<td>A. Liquidation</td>
<td>None</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(Bankruptcy law enacted)</td>
<td></td>
</tr>
<tr>
<td>B. Takeover</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(Financial institutions cannot initiate transformation of enterprises to share companies)</td>
<td></td>
</tr>
<tr>
<td>C. Supporting Enterprises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.1 Debt Reduction</td>
<td>None</td>
<td>-</td>
</tr>
<tr>
<td>C.2 Refinancing</td>
<td>None</td>
<td>0</td>
</tr>
</tbody>
</table>
3.16 However, commercial bank decisions in socialist economies are significantly distorted by the possibility of government support to either enterprises or banks—and due to the fact that compensation to bank management is regulated on the basis of accounting profits.

3.17 The problems raised by the expectation of government financial support are, of course, not specific to socialist economies. Financial intermediaries in many developing countries and in the United States—in the case of savings and loans institutions—often refinance economically unviable projects instead of initiating bankruptcy proceedings and liquidating them. When most liabilities of a bank are insured implicitly or explicitly, a bank has incentives to provide workout loans even if such loans are socially wasteful, that is, even if the revenue that the new loan is expected to generate is lower than its opportunity cost. The reason is that limited liability combined with deposit insurance allows the bank to shift losses that exceed its equity position to the government.\(^{21}\) Further, if the bank itself expects the government to bail out a faltering enterprise, the bank would try to maintain the nominal value of its claims or provide working capital even when the economic viability of the firm is dismal. Absent debt reduction, enterprises have no incentives to exert effort for restructuring or cost reduction.

3.18 In socialist economies, expectations of government bailouts exist in an aggravated form: in most market economies government bailouts of banks or their debtors often are expected to happen when failures are widespread and threaten the stability of the banking system. By contrast, in Hungary, the banking system has simply inherited loans from the National Bank without evaluation. Hence, banks can credibly claim to have no responsibility for lending decisions taken by the government prior to the banks' existence. Thus, expectations of government bailouts are prone to be more widespread. This problem of "inherited portfolios" also exists in Poland where the commercial banks have similarly assumed their loan portfolios from the National Bank. Furthermore, deposit guarantees also exist in socialist economies, although only implicitly. While there is no formal deposit insurance scheme, given that banks are owned by the state, it is safe to assume that depositors consider their deposits as safe assets.

3.19 Bailout expectations also encourage banks to prolong the survival of borrowers who are unlikely to regain viability. Thus, adjustment in the enterprise sector becomes unduly slow. Effectively what happens is an operational partnership between the bank and its major borrowers at the expense of the government or taxpayers.

3.20 Third, compensation to bank management is regulated by the government according to the level of accounting profit.\(^{22}\) Consequently, when the stock of outstanding loans declines due either to liquidation or debt reduction, revenue declines as well, causing a reduction in both current profit and the upper limits on compensation. Furthermore, the increase of future accounting profit, which would occur if liquidation or debt reduction took place swiftly, does not necessarily accrue to Bank employees. Future bank regulation or government decisions to let profitable banks absorb the accumulated losses of chronically loss-making enterprises, if this should happen, can easily absorb such profit. Consequently, commercial banks are likely to prefer to postpone rather than realize losses.

3.21 Inter-enterprise credit. Another major source for financing loss makers is inter-enterprise credit, especially from suppliers. The extensive development of inter-enterprise credit is reported by Knight (1984) for Yugoslavia for 1981 to 1983. A similar development has been observed recently in Hungary. Inter-enterprise credit for loss-makers is often regarded as constituting an additional softening of the budget constraint.

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\(^{21}\) See, for example, Herring (1989).

\(^{22}\) See for example, the 1986 Decree of the Minister of Finance on the Regulation of Incomes of Banks and Earnings of Bank Employees for Hungary.
3.22 Credit from suppliers is voluntary. They would like to be paid immediately, but even if arrears accumulate they tend to keep supplying to loss makers. Promissory notes received by suppliers sell only at large discounts, implying that credits extended by suppliers to loss makers have a large "subsidy" component.

3.23 However, in some cases such lending may be efficient. Suppliers may be extending implicit insurance contracts to their buyers, as do closely related enterprises in market economies. Such implicit insurance may be important, since insurance can be more efficiently provided between entities that can monitor each other. Suppliers also may provide credits in order to protect their market stake in loss makers. This is because liquidation can result in large-scale loss of the suppliers' markets and profits—suppliers generally suffer most during liquidations since their claims are typically unsecured. Still, such defensive lending may help alleviate the shortage of risk finance: when ceilings on lending rates on loans from financial institutions are binding, some borrowers will be rationed out of the loan markets. In such cases, suppliers can relax credit rationing by increasing effective lending rates through higher margins on the goods they supply. Thus, inter-enterprise credit may reduce the inefficiencies inherent in the financial and insurance markets, which are especially severe in socialist economies.

3.24 The major source of the inefficiency of inter-enterprise credits seems to lie, again, in the expectation of government bailouts and in the restrictions on capital ownership. Similar to commercial banks, suppliers may continue supplying on credit, hoping they will eventually be paid by the government. They can record a higher immediate accounting profit by accumulating accounts receivables that may not be honored, rather than stopping sales to the loss maker immediately. Although suppliers inevitably have to realize losses sometime in the future, this can be done when accounting profits are high for other reasons and to avoid possible expropriation of excess profit by the state.

C. Restricted Capital Ownership and Soft Budget Constraints

3.25 The problem of ownership in socialist economies has two important aspects. First, the appropriability of the residual value of enterprises is not well established. On the one hand, the governments seem to have steadily given up their positions as residual claimants. On the other, the vagueness of ownership is reflected in the fact that enterprises still perceive a high risk that the government will expropriate the stream of returns generated by the enterprise. In effect, this ambiguity is similar to that generated by highly variable taxation systems. They mainly affect the incentives of insiders, i.e., managers and workers, and discourage enterprises from investing, improving technology, or increasing x-efficiency by allocating more effort.

3.24 The economic consequences of the ambiguity of rights to appropriate returns are different from those of the soft budget constraint. Incentive problems generated by this ambiguity are especially relevant for profitable enterprises, since the risk of expropriation discourages further improvements. In contrast, the soft budget constraint discourages investments for efficiency improvements in enterprises with relatively low profits. Even if the ambiguity is removed and, say, the right of insiders to appropriate returns is clearly and credibly established, loss-making enterprises may still underinvest and remain inefficient as long as the soft budget constraint remains.

3.26 Nevertheless examples are numerous where the problem of appropriability exacerbates the consequences of all other sources of soft budget constraints. For example, because it discourages activities that maintain or improve efficiency, the appropriability problem increases the chance that profitable enterprises eventually become less profitable. In other words, the appropriability problem makes it more likely that enterprises for which incentive distortions from soft budget constraints do not matter eventually turn into those where these distortions do matter. In cases where sunk costs are important, the appropriability problem increases the possibility that because enterprises put in less effort in the earlier
periods, additional financing becomes necessary later. In both cases, the appropriability problem worsens the economic consequences of the soft budget constraints.

3.27 The second aspect of the ownership problem has to do with the distribution of control rights. Over the years, management has established de facto, albeit possibly incomplete, control rights over enterprise assets. Here we would like to concentrate, however, on the control rights of creditors. When a firm experiences financial troubles, conflicts of interests between management and creditors are bound to arise. These conflicts discourage potential external investors. The problem could be resolved by redistributing control when enterprises become financially distressed. However, this has been impossible in most socialist countries, where the choice for creditors is simply between liquidation, which may be costly, and preservation of the status quo with refinancing. As discussed in the previous subsection, takeovers, one of the ways of redistributing control rights, are often not an available option. Similarly, temporary acquisition of control rights by creditors is also not possible. As a result, the financial system becomes inefficient in undertaking financial engineering or restructuring operations, and risk capital provided by external sources for loss-making but viable enterprises becomes extremely limited.

3.28 In that case, the government must act as a financial institution. However, once the government becomes the sole provider of external finance, the possibility of generating a soft budget constraint is increased substantially. First, since the government is not an independent economic institution with profit and loss responsibilities and in principle cares about social rather than private welfare, all the motives—spelled out in Section III A—that induce governments to help loss makers become operative. Moreover, involvement of the government in the distribution of funds automatically generates severe incentive problems (discussed in the next section). Also, the monopolistic structure of financial resource allocation itself may make it more likely that the financial system would be burdened with projects that will never be profitable in the long run. Such projects nevertheless continue to get financing because of the sunk nature of previous investments. As argued by Dewatripont and Maskin (1989), when external funds are provided in a competitive system where financial resources are more fragmented, managers foresee that they will have to be judged creditworthy by the whole financial system and not just by the central agency. That discourages managers with non-viable projects from requesting funds in the first place.
IV. CREDIBILITY OF HARD BUDGET CONSTRAINTS

4.01 It was argued in Section III that the existence of a gap between social surplus and private surplus may make it optimal for the government to provide ex-post support to loss makers. This would not be harmful for the economy if this support created no adverse incentive effects. However, this section argues that such adverse incentive effects are likely to exist. We argue that the gap between social surplus and profit undermines the credibility of hard budget constraints, and can substantially hurt dynamic efficiency gains in industry. This is because a firm can appropriate the difference between social surplus and profit by underinvestment.

4.02 We also show that a soft budget constraint particularly hurts the willingness of enterprises to adjust to large shocks. For concreteness, the formal presentation in subsection A focuses on the monopolistic supply structure as a structural cause for the gap between social surplus and profit, although the analysis applies to any other cause generating such a gap, as illustrated in subsection B.

A. The Hard Budget Constraint may not be Credible in an Economy with a Monopolistic Supply Structure

4.03 As discussed in the last section, a major reason for state support to loss makers is shortages. When a major loss maker in the protected steel sector, for example, goes out of business, it negatively affects the production capability of user industries. This repercussion results from the monopolistic supply structure in these economies: domestic industry is highly concentrated, imports are tightly controlled due to foreign exchange problems, and industrial policies have been inward looking.

4.04 Let us assume that a steelmaker experiences a sudden large increase in its input prices, threatening its solvency. However, it is technically and economically feasible for this firm to reduce total cost and to remain solvent. We argue that when exiting is costly and the government is not expected to help, the enterprise will undertake rationalization investment to reduce costs. However, the enterprise knows that the government wants to prevent economic bottlenecks created by the decline of steel production, so it expects to be rescued. Therefore, the steel enterprise does not undertake the full effort toward cost reduction, and the government is in fact obliged to help the enterprise.

4.05 This argument can be formally demonstrated as follows: Consider a monopoly firm that earns operating income \( Y \), equivalent to \( (P-C)Q \) where \( P \) is price, \( C \) is the constant marginal cost of production, and \( Q \) is output, as shown in Figure 1. The marginal cost depends on input price \( r \) and rationalization investment \( I \).

\[
C = C(r,I), \quad C_r > 0, \quad C_I < 0, \quad C_{II} > 0
\]

Let \( \pi \) stand for profits, \( \pi(r,I) = Y(r,I) - I \). The firm is assumed to be concerned both with profits and the level of \( I \), since rationalization investment involves some non-pecuniary costs, in the form of disutility of effort:

\[
U = U(\pi(r,I),I), \quad U_1 > 0, \quad U_2 < 0
\]

\[23\] Suppose, for example, every unit of investment requires a unit of effort in order to reduce costs.
FIGURE 1: MONOPOLY PROFIT AND CONSUMER SURPLUS
4.06 The consumer surplus from the output of the firm, including the user industries, is denoted by \( W \), which is the area under the demand curve in Figure 1. Since investment reduces cost, the consumer surplus is increasing in investment, \( \sigma W/aI > 0 \). The sequencing of events is as follows. Once the input price is observed, the firm decides whether it will stay or exit. If it stays, it also decides on the level of cost-reducing investment that it must undertake. Once the production technology is thus established, output is produced. If the firm decides to exit, it incurs a fixed cost, given by \( F > 0 \); in that case, its utility is given by \( U^B = U(-F,0) \).

4.07 Suppose now that the firm experiences a shock that increases the input price to such a level that in the absence of restructuring investment, the firm becomes insolvent. Letting \( r^b \) stand for the input price after the shock, then we have \( \sigma(r^b,0) < 0 \). However, assume that if the firm stays and invests at the utility maximizing level, it becomes solvent; that is, letting \( I^b \) stand for the level of investment that maximizes \( U \) given \( r=r^b \), assume that \( \sigma(r^b, I^b) > 0 \). When the budget constraint is hard, exit occurs in one of the following ways: If financial profits are less than zero, the firm cannot produce anything because suppliers do not provide any inputs; hence the firm has to exit. When profits are positive, the exit decision of the firm depends on the following comparison. The utility corresponding to staying and investing is \( U_{(r^b, I^b), P^b} \). If the firm exits, it gets less income--incurs a loss of \( F \)--but saves on the disutility of effort. Let \( I^H \) be defined by

\[
U(I^H, P^b) = U(-F,0)
\]

Then, if \( \sigma(r^b, I^b) > I^H \) the firm will undertake the investment, regain solvency and stay. Essentially, the cost of exit acts as a disciplining factor on the enterprise and induces the firm to expend effort in order to increase cost efficiency.

4.08 However, the hard budget constraint may not be credible. To see that, we have to specify how the government responds to the actions of the firm. The government cares about the consumer surplus. Therefore ex-post, if the need arises, it will be willing to provide a subsidy to the firm in order to ensure that it produces the output. Let \( G \) stand for the fiscal cost of that subsidy. Suppose that ex-post the government has the ability to make a take-it or leave-it offer to the firm. In that case, if the firm's investment level is such that the firm expects positive profits from production, the government does not need to provide any subsidies, since ex-post it is in the interest of the enterprise to produce. Let \( I \) be the level of investment at which the enterprise just breaks even: \( \sigma(r^b, I) = 0 \). Then for \( I > I \), the government's optimal reaction is to set \( G = 0 \). However, if \( I < I \), then production will not take place, since the firm is insolvent and has to exit. In that case, it is optimal for the government to provide a level of subsidy that will make the enterprise just willing to produce as long as the fiscal cost of this subsidy is less than the consumer surplus. Hence, for \( I < I \), the optimal reaction of the government is

\[
G(I) = \sigma(r^b, I) \text{ as long as } \sigma G(I) \leq W(I)
\]

Here \( \delta \) is the shadow cost of government financial resources. Hence, when \( I < I \), hard budget constraints are not credible as long as the fiscal cost of the government subsidy is lower than the consumer surplus that would be lost if the firm did not produce anything.

4.09 Anticipating this reaction by the government, the firm makes the following calculation. If it stays, its utility corresponding to various levels of investment (and effort) is given by

\[
\begin{align*}
U(I^H, I) & \text{ if } I > I \\
U(0, I) & \text{ if } 0 < I < I
\end{align*}
\]

4.10 Examination of these utility levels quickly reveals that if the optimal level of investment, conditional on staying, is higher than \( I \), it is equal to \( I^H \). If the optimal level of investment is below \( I \), then it is set equal to zero. In effect, to decide on its course of action the firm chooses one of the following alternatives. It can exit and obtain \( U^B \). It can stay and choose an investment level of 0, which would yield
a utility level of $U(0,0)$. Or it can stay and choose an investment level of $I^H$, attaining a utility level of $U(\sigma^H, I^H)$. $U^H$ is clearly dominated by $U(0,0)$ so the firm never exits; it at least prefers to stay, obtain a subsidy and produce, without gaining any profits and without spending any effort either. If cost reduction increases profits sufficiently, it stays and undertakes a restructuring investment.

4.11 How does this solution differ from the pure hard budget constraint case? Let $\sigma^*$ be defined by

$$U(\sigma^*, I^H) = U(0,0)$$

Hence, under the soft budget constraint, the firm undertakes restructuring if $\sigma^*(r_n^H) > \sigma^*$. Clearly, $\sigma^* > \sigma^H$. This comparison brings out the incentive effect of soft budget constraints. When the budget constraint is soft, it takes a higher level of profitability to induce the firm to undertake restructuring. Effectively, the soft budget constraint socializes the exit cost and renders it no longer a threat for the firm. Absent exit costs, the firm can afford to stay and not spend any effort, relative to the case when the budget constraint is hard. However, if the profitability of the firm is high enough, then the firm still is willing to restructure. Hence the soft budget constraint does not affect the incentives of firms whose post-restructuring profitability is very high.

4.12 This last statement can be recast in terms of the input price shock. Relative to an initial situation, if the increase in the input price is not large, then the firm has incentives to reduce costs. In that case, monopoly power does not give rise to soft budget constraints and does not affect incentives for cost reduction. Effectively, the hard budget constraint equilibrium coincides with the soft budget constraint equilibrium. If, however, the input price increases a lot, it may make hard budget constraints not credible and may mute incentives to undertake rationalization investments. The implication is that a monopolistic enterprise may be equally flexible in responding to small shocks as a competitive firm, but it does very poorly in responding to large shocks.

4.13 These cases are shown in Figure 2a and 2b. Under a hard budget constraint, the reaction function of the government would be given by the vertical line at $G = 0$, since in this case the government's actions would not depend on the firm's actions. The firm's reaction function would be given by the horizontal line $FF$. Equilibrium would take place at point $H$, and the firm would invest an amount $I^H$. However, the hard budget constraint is not credible. The line $HCS$ shows how the government reacts to different levels of investment undertaken by the firm. When the level of investment is between $I^H$ and $I$, the line is still vertical, since the government does not have to grant any subsidy. For $I < I^H$, it is downward sloping. Supposing, as we have done above, that the fiscal cost of subsidies is always smaller than the consumer surplus, the reaction function is defined up to $I = 0$, given by point $S$. If $U$, the indifference curve of the firm at point $H$, crosses the reaction function of the government, the soft budget equilibrium takes place at point $S$. This is shown in Figure 2b. The point $S$ is the soft budget equilibrium, which is also dynamically consistent unless the government has no discretion to help the firm ex-post. If, on the other hand, the indifference curve does not cross $HCS$, then the equilibrium is at $H$. This case is shown in Figure 2a.

---

24/ For $I < I^H$, $G > 0$ follows from the fact that $\pi^G(\cdot, I) > 0$ in this region. This, in turn, is because $\pi$ is concave and reaches a maximum at a level of investment lower than $I^H$. 


FIGURE 2: EQUILIBRIUM UNDER HARD AND SOFT BUDGET CONSTRAINTS

(a) A small shock

(b) A large shock
When $r_b$ is very high, the fiscal cost of a government subsidy to induce the firm to produce without any cost reduction would be larger than the consumer surplus that would be lost if the firm did not produce anything. In these cases, one of the following may happen. Either the hard budget constraint becomes credible and the firm undertakes restructuring, or the firm undertakes the minimum amount of effort to make it worthwhile for the government to subsidize the firm. In other words, let $I^* > 0$ be the level of investment, which makes the necessary subsidy just equal to the consumer surplus:

$$G(I^*) = -\psi(r_b, I^*) = W(I^*)/\psi$$

Then the firm compares $U(0, I^*)$ with $U(\psi(r_b, I^*), I^*)$. If the former is larger than the latter, the firm undertakes only partial restructuring and earns zero profits. In this case, the soft budget constraint still affects the firm's incentives to restructure. Otherwise the firm undertakes complete restructuring. Graphically, this case is similar to those displayed in Figures 2a and 2b, except that point $S$ corresponds to $I = I^*$ rather than $I = 0$.

### B. Surpluses and Soft Budget Constraints

The result obtained in the last section can be generalized to any circumstance where the government attaches values to the decline of the social surplus caused by the exit of a loss-making enterprise. Let us analyze the case of a loss-making exporter. Helping loss makers in order to shore up foreign exchange earnings can be interpreted as caused by the mismatch between social surplus and profit, as follows.

Exit of a firm with substantial foreign exchange earnings can appreciably reduce the social surplus in economies with overvalued currencies. Figure 4 illustrates this point. Since the official exchange rate (EXO) is significantly undervalued in most socialist economies (market exchange rate $EXM > official exchange rate EXO$), a loss-making but convertible currency-earning or saving enterprise may still generate a positive social surplus, even if it is perfectly competitive in a product market. In figure 4, the social surplus is given by $ES$, which is equivalent to the gap between exports evaluated at market or shadow exchange rates and exports evaluated at the official exchange rate, since the short-run operating surplus ($Y$) is equal to the fixed capital costs.

Under this circumstance, it is welfare-improving for the government to prevent the exit of such an enterprise (caused by a negative input cost shock) by providing financial support. However, anticipating this government action, the enterprise does not improve efficiency as hard as it might, trying to capture some of social surplus $ES$. 


FIGURE 3: SHORT-RUN OPERATING PROFIT AND SOCIAL SURPLUS
V. STRATEGIES FOR TIGHTENING THE SOFT BUDGET CONSTRAINT

5.01 In Sections III and IV we discussed the major economic causes of soft budget constraints in socialist economies. It is useful to summarize those causes in order to discuss countermeasures:

- Past limited autonomy. Both enterprises and commercial banks do not feel fully responsible for their financial situation due to their past limited autonomy.

- Gap between social surplus and profit. The government cannot credibly threaten bankruptcy since it also has a stake in the survival of enterprises in a shortage economy.

- Restricted capital ownership. Restricted capital ownership slows down the autonomous process for restructuring. Due to the appropriability problem, managers and workers lack adequate incentives for restructuring or for exit. The control-rights problem causes an undersupply of risk funds from commercial banks for restructuring. Banks prefer refinancing rather than reorganization deals. Consequently governments are forced to act as investment banking institutions, with the result of supporting loss makers.

5.02 We propose that the strategies for tightening soft budget constraints have the following three dimensions:

- First, the government has to establish effective adjustment assistance for workers; this can mean redirecting the financial and other assistance that formerly supported loss-making enterprises.

- Second, it is necessary for the government to eliminate major price distortions and barriers to competition in order to eliminate major gaps between social surplus and profit. Simultaneously it is important for the government to reduce its discretion to help enterprises exit.

- Third, restrictions on capital ownership have to be removed quickly, so that adequate incentives and mechanisms for autonomous adjustment can be created.

We elaborate on these three dimensions in more detail in the following sections.

A. Establishing Effective Adjustment Assistance for Workers

5.03 As discussed in Section III, under strong pressure from enterprises, governments have provided financial and other assistance to financially troubled enterprises so that they survive. In fact, this necessity to compensate individuals suffering economic hardship will remain even after economic reform provides a greater measure of autonomy to enterprises. Compensating workers who are the most severely affected by economic reform may be the only way to implement fundamental economic reform.

5.04 However, financial and other assistance to the enterprise sector has two major drawbacks. First, such assistance is contingent on the financial losses of the enterprises and thus undermines financial discipline. Second, assistance is strongly biased toward rehabilitation of enterprises and against exit or
change in the line of business. Hence, it is biased towards preserving the status quo and the inefficient use of resources.

5.05 A clear alternative is to provide adjustment assistance to dislocated workers directly. Government can assist workers adapt to economic changes through unemployment compensation for a certain period, worker retraining, and support payments to fired workers.

5.06 Adjustment assistance to workers has clear advantages in tightening the soft budget constraint:

- First, since under the adjustment assistance framework the government guarantees neither the solvency nor the employment size of enterprises, the threats of bankruptcy and labor rationalization remain. Adjustment assistance to workers only reduces the cost of losing jobs, and if properly targeted to those workers who are unemployed it does not materially distort the incentives faced by managers and skilled workers. As a corollary, switching financial and other assistance from loss makers to adjustment assistance will significantly improve incentives for managers and skilled employees.

- Second, under adjustment assistance the amount of benefits received from the government would depend on relatively clearly specified eligibility criteria so the danger that government might perversely subsidize inefficient enterprises will decline.

5.07 Switching to adjustment assistance has the additional benefit of substantially neutralizing the incentives between restructuring and exit. This aspect will be discussed in Section C.

B. Reducing Discretion and Incentives for the Government to Help Enterprises Ex Post

5.08 The second major issue is to reduce both the discretion and incentives of the government to help loss-making enterprises ex post. Both reducing the degree of intervention and achieving uniformity in fiscal, financial and regulatory policy across enterprises meet this objective. A critical step in this regard is to leave investment resource allocation to financial institutions. However, as long as the government finds it optimal to help enterprises ex post, there is significant danger that it may withdraw its earlier commitment for non-intervention. Therefore, the fundamental measure is to eliminate the government's ex post incentives to help loss makers. This requires implementation of structural reforms, eliminating major gaps between social surplus and profit. We discuss both of these aspects below.

(1) Leave investment resource allocation to financial institutions with profit and loss responsibility

5.09 There are two reasons for this. First, financial institutions with profit and loss responsibilities will be able to resist political pressures for supporting loss makers more than the government can. Second, the fact that financial institutions are concerned with profit but not with social surplus will make

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25/ For example, in Hungary the rehabilitation fund essentially supports enterprises' reinvestment in the original sector (e.g., conversion from deep mining to surface mining in the coal sector).

26/ Hungary, Poland and some provinces in China, such as Shenzhen, have recently introduced adjustment assistance schemes. In Hungary an Employment Policy Fund was created in 1988 to provide unemployment compensation, strengthen worker retraining, and help unemployed workers start their own businesses. Poland has established a generous unemployment compensation scheme.
a hard budget credible. Enterprises cannot take consumer surplus or foreign exchange earnings hostage against profit-seeking financial institutions.

5.10 At present in most socialist economies the governments are in the process of transferring the power of investment resource allocation to the banking sector. However, the governments are still heavily involved in credit decisions in countries such as China. Moreover, in countries with autonomous banking sectors, such as Hungary, the government still retains significant investment resources to support national priorities. These resources should be provided to the industrial sector according to clear targeting criteria based on externalities (e.g., environment, technology development) or on a competitive basis (see Section D).

(2) Eliminate Major Gaps between Profit and Social Surplus

5.11 The most effective strategy for making a hard budget credible is to eliminate the ex-post incentive for the government itself to help loss makers. In order to do this, government must first--and quickly--eliminate major price distortions in the economy. Gross undervaluation of foreign exchange and energy and raw material prices is a common problem in socialist economies. As long as major price distortions exist, forcing enterprises disfavored by price distortions into bankruptcy may entail economic losses--a government concerned with that loss is obliged to help them. As already discussed, this creates severe incentive distortions. Second, artificial domestic shortages caused by foreign exchange restrictions and import restrictions have to be eliminated, especially in raw material and intermediate goods. This measure will make bottlenecks less likely. Third, domestic competition has to be encouraged both by breaking up monopolistic enterprises and by encouraging new entries, especially in those industries where trade liberalization cannot achieve a competitive supply structure.

5.12 Unless these structural measures are undertaken, loss-making enterprises that are major foreign exchange earners or major suppliers of raw material and intermediate goods are not credibly threatened by bankruptcy, since the government has an ex-post incentive to help these enterprises. The most straightforward method to eliminate major price distortions as well as domestic shortages is trade liberalization and price liberalization. The 1990 Polish reform, which undertook almost full price liberalization and trade liberalization, is a very significant step in this regard.

5.13 Of course, instead of undertaking structural measures the government may try to build a reputation for being "tough"; to convince firms that it will not help them ex-post even though it is socially optimal to do so. However, this is likely to be a wasteful strategy. Since ex-post soft budget constraints are optimal, the prior belief of firms is likely to be that the government cannot afford to be "tough"; hence, firms would require a substantial amount of convincing. Within the framework developed in the previous section, changing firms' beliefs would require a long period where enterprises do not undertake restructuring but nevertheless find out ex-post that they cannot obtain support. Until workers and managers are convinced, restructuring would not take place and the economy would lose both dynamic efficiency gains and its consumer surplus.

C. Creating Incentives for Autonomous Adjustment

5.14 The necessity of widespread restructuring in industry makes the task of tightening the budget constraint more difficult. The problem that governments face is the following. On the one hand is the attempt to harden the budget constraint. That would preclude all financial subsidies to enterprises. On the other hand, if investment funds were available, there are firms that could restructure and gain viability. Denying them access to funds may cause unnecessary liquidations, resulting in an inability to transform industry. The government instead needs a strategy that would induce the closing down of inefficient firms--that is, firms that would not become profitable even with restructuring--and make funds available to firms that can become profitable after restructuring.
5.15 Eliminating subsidies and introducing competition do not necessarily induce inefficient firms to exit by themselves. Given asymmetric information among enterprises, financial institutions, and the government, and restrictions on capital ownership, it is safe to assume that workers and managers would prefer to obtain funds and attempt to restructure, even if the probability of success is low. The alternative would be to accept income decline, unemployment, and hardships. Hence, unprofitable enterprises have incentives to present themselves as potentially profitable. Therefore, financial institutions are saddled with the task of sorting out good firms from bad ones.

5.16 To avoid the situation where financial institutions support inefficient enterprises while reducing resources available for efficient enterprises, it is necessary to provide adequate incentives for inefficient enterprises to exit voluntarily. The strategy for industrial restructuring must incorporate incentives compatible between financial institutions and enterprises.

5.17 To achieve incentive compatibility, first it is essential to have government policy that is at least neutral between restructuring and exit. Currently, enterprises can get investment subsidies if they demonstrate that rehabilitation is feasible, while they get no support if they develop retreat plans. Providing effective adjustment assistance for affected workers, while significantly reducing investment subsidies for rehabilitation, will correct this incentive distortion. At the minimum, restructuring should not be subsidized against exit.

5.18 Second, removing the restriction on capital ownership is also essential. Investors who provide funds for restructuring must have adequate control during restructuring as well as entitlement to the associated risk and returns. Currently, whether enterprises are self managed or state managed, the government bears the ultimate financial consequences of adjustment or absence of adjustment. Non-state entities, including workers, are not fully entitled to the increase in value of successfully restructured enterprises nor to the capital value of exit.

5.19 One strategy pursued by the Polish government to tighten soft budget constraints is to demand high dividend payments on the capital that the state has contributed, as discussed in Section III. High dividend payments may reduce barriers for labor mobility by reducing the capital rent available for workers. This is because workers may wish to stay in enterprises with high profitability, even if the marginal productivity of labor is below market wage, only because they are entitled to capital rent.

5.20 However, such a strategy also has its drawbacks. Even if we assume that capital rent constitutes an important exit barrier for redundant workers, imposing dividend requirements on the accounting value of state-contributed capital cannot properly appropriate rents. This is because some enterprises have a large share of their own funds invested, or because the "market" value of capital is significantly different from its accounting value. Furthermore, this strategy can endanger the solvency of many enterprises. As demonstrated in the last section, the distortion due to soft budget constraints becomes larger when the likelihood of enterprise insolvency is high. Consequently, as long as some bailout expectations remain, a higher dividend requirement can actually worsen the distortions from the soft budget.

D. The Role of Commercial Banks and the Financial System

5.21 It was argued above that the government should retreat from the business of providing investment funds, including those targeted for restructuring, and delegate these functions to the financial sector. This process has already started in Poland and Hungary. Moreover, once most tax and subsidy schemes are eliminated, financial institutions will become the main agents dealing with loss-making enterprises. These developments raise the question of how vulnerable the financial sector will be to the danger of maintaining soft budget constraints.
5.22 In Section III C we argued that commercial banks even in market economies have biases for refinancing inefficient enterprises but that such biases are stronger in socialist economies due to additional distortions. Governments therefore have to take corrective measures to reduce or eliminate these distortions. Otherwise commercial banks may be able to enforce financial discipline no better than the government.

5.23 First, the government has to develop effective supervision and regulation of the banking system. In particular, banks have to develop a substantial capital base so that they do not take excessive risks at the expense of the taxpayers. Both Poland and Hungary are in the process of developing a supervisory and regulatory framework, a process that will undoubtedly take some time.

5.24 In particular, the government has to encourage commercial banks to settle bad loans inherited from the national bank. Commercial banks in both Hungary and Poland have simply inherited the loan portfolio of the central bank without any evaluation of the market value of these loans. Consequently some commercial banks may already be insolvent.

5.25 Second, the control rights of commercial banks with respect to loss-making enterprises have to be strengthened. In both Hungary and Poland creditors can initiate bankruptcy proceedings against enterprises. This threat of bankruptcy and the consequent loss of jobs should encourage some financial discipline by enterprises. However, in many cases, liquidation through bankruptcy would be too extreme a response to the financial problems that enterprises face and also wasteful in terms of protecting the claims of the creditors. In cases where the value of the firm as a going concern, conditional on restructuring, is higher than would be its liquidation value, the threat of liquidation is not credible and therefore would play no role in disciplining firms. In particular, arrangements through which creditors can threaten the enterprises, either by the removal of managers or similar intermediate measures that just fall short of liquidation, may be required. Such measures require the creditors to have access to control rights, even temporarily.

5.26 In some market economies, commercial banks can obtain control rights over enterprises by buying their shares in the stock market. Even if such a buyout does not actually occur, the mere fact that it is possible allows commercial banks to take significant control. This option is, however, closed for self-managed or state-managed enterprises. Instead, one option is to allow commercial banks to transform self-managed or state-managed enterprises into share-holding companies.

5.27 Another option is to create a bankruptcy reorganization mechanism that explicitly guarantees creditors the right of control. In some countries, bankruptcy proceedings grant substantial control to creditors, ranging from monitoring an enterprise's day-to-day operations to the right to change its management. Such a framework may prove useful in limiting the adverse effects of conflicts between creditors and debtors and introducing intermediate steps between liquidation and continued operation.

5.28 Third, the state's equity investment has to be provided on a competitive basis. State investment in socialist economies often has taken the form of a financial contract requiring a fixed and often low dividend rate. This shows that unless supported by a competitive mechanism, the government's capacity is limited in differentiating risk and in setting appropriate return among enterprises and over time. State equity investment has been essentially investment subsidies.

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27/ This problem of inheriting bad loans could have been partly resolved if loans had been assumed voluntarily by commercial banks or if they had been auctioned. Absence of reliable information about the value of these loans in the aftermath of economic reform and the necessity of quick transition to the two-tier banking system probably would have made that route difficult to take.
5.29 Industrial restructuring accompanying an economic reform program may require a sizeable new equity infusion into industry. The government of Poland is now establishing the Bank for Restructuring the Economy (BRE), which is expected to start operations by May 1990. The BRE will be able to lend funds (since the main target enterprises are those in financial trouble, lending is actually close to equity investment) or buy shares in state enterprises that are in financial difficulties. The Hungarian government supports rehabilitation by equity investment and conversion of debt into equity both through its State Development Institute (SDI) and the Rehabilitation Fund. However, the expansion of state equity investments can easily undermine financial discipline.

5.30 One key alternative is to transform or privatize loss-making enterprises (self managed or state managed) into companies where the state’s participation is limited to that of a minority shareholder (e.g., one-third). The transferability of shares, as well as the participation of non-state investors, would significantly help reduce the incentives for the state to subsidize inefficient enterprises.
### Table 1: ENTERPRISE SUBSIDY AND TAX (Hungary: 1985)

<table>
<thead>
<tr>
<th>Value Added g/f</th>
<th>Subsidy</th>
<th>Tax</th>
</tr>
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<tbody>
<tr>
<td>1 Mining</td>
<td>59 bFr</td>
<td>3.6 bFr</td>
</tr>
<tr>
<td>2 Electricity</td>
<td>19</td>
<td>0.0</td>
</tr>
<tr>
<td>3 Metallurgy</td>
<td>10</td>
<td>11.7</td>
</tr>
<tr>
<td>4 Engineering</td>
<td>104</td>
<td>8.8</td>
</tr>
<tr>
<td>5 Building Material</td>
<td>14</td>
<td>0.3</td>
</tr>
<tr>
<td>6 Chemical</td>
<td>49</td>
<td>11.3</td>
</tr>
<tr>
<td>7 Light</td>
<td>46</td>
<td>8.7</td>
</tr>
<tr>
<td>8 Food</td>
<td>16</td>
<td>30.0</td>
</tr>
<tr>
<td>9 Miscellaneous</td>
<td>5</td>
<td>0.1</td>
</tr>
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</table>

Total 323 75.0 (23.0) 185.0 (57.3)

Source: Statistical Yearbook

g/ Numbers in brackets are ratios to value added.

### Table 2: CURRENT AND CAPITAL SUBSIDIES TO 26 LARGE LOSS-MAKERS (Hungary)
(Commitments in 1985 and 1986)

<table>
<thead>
<tr>
<th>Current Subsidies</th>
<th>Capital Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refloating Fund</td>
<td>Debt Writeoff</td>
</tr>
<tr>
<td>3.7 bFr</td>
<td>21.0 bFr</td>
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<tr>
<td>(7%) g/f</td>
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<tr>
<td>Tax Exemptions</td>
<td>State Equity Allocation</td>
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<tr>
<td>1.8</td>
<td>17.1</td>
</tr>
<tr>
<td>(3%) g/f</td>
<td></td>
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<tr>
<td>Interest Loss</td>
<td>Debt Rescheduling and New Lending</td>
</tr>
<tr>
<td>7.3</td>
<td>1.7</td>
</tr>
<tr>
<td>(13%)</td>
<td></td>
</tr>
</tbody>
</table>

Total 12.9 (23%) Total 39.8

Source: Ministry of Finance

g/ Ratio to value added
### Table 3: Breakdown of Sectoral Output by Pricing Scheme
1987, in % of Sales of

<table>
<thead>
<tr>
<th></th>
<th>Centrally-Determined</th>
<th>Noncentrally-Determined</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Competitive Pricing</td>
<td>Fixed or Maximum Prices</td>
</tr>
<tr>
<td></td>
<td>(CIF) Reference</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Mining</td>
<td>70</td>
<td>9</td>
</tr>
<tr>
<td>Electricity</td>
<td>80</td>
<td>10</td>
</tr>
<tr>
<td>Metallurgy</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Machinery</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Construction Material</td>
<td>40</td>
<td>16</td>
</tr>
<tr>
<td>Chemicals</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Light Industry</td>
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<td>-</td>
</tr>
<tr>
<td>Miscellaneous Industry</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Food Industry</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>Total Industry</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agriculture (basic)</td>
<td>-</td>
<td>60</td>
</tr>
<tr>
<td>Water Management</td>
<td>-</td>
<td>85</td>
</tr>
<tr>
<td>Transportation/Telecommunication</td>
<td>-</td>
<td>75</td>
</tr>
<tr>
<td>Trade (price margin)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Material Production</td>
<td>10</td>
<td>20 (20)</td>
</tr>
</tbody>
</table>

*Note:* Number in bracket is the percentage in 1985.

Source: Data provided by the Hungarian authorities.
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