



European Bank
for Reconstruction and Development

Soft budget constraints and state capitalism

Sergei Guriev

Summary

I consider the application of János Kornai's soft budget constraint (SBC) concept to the state capitalist economy. I argue that interaction of SBC with agency problems within the government bureaucracy helps to explain a major feature of state capitalism – failure to privatise underperforming state-owned enterprises (SOEs). Bureaucrats supervising the failing SOEs prefer to keep them afloat and gamble on their resurrection; in contrast, privatisation would involve recognising the loss which would result in acknowledging the bureaucrat's failure that is disincentivised by the state. This endogenously emerging preferential treatment of SOEs creates a competitive advantage against private firms; this explains why in state capitalism privatisation may result in lower rather than higher productivity and therefore remain unpopular.

Keywords: Soft budget constraints, state capitalism, János Kornai.

JEL Classification: P12, P31, P51.

Contact details: Sergei Guriev, One Exchange Square, London EC2A 2JN, UK
Phone: +44 7802 510 725; *email:* gurievs@ebrd.com.

Sergei Guriev is Chief Economist at the European Bank for Reconstruction and Development, Professor of Economics at the Institut d'études politiques de Paris (Sciences Po) and Research Fellow at the Centre for Economic Policy Research (CEPR).

The working paper series has been produced to stimulate debate on the economic transition and development. Views presented are those of the author and not necessarily of the EBRD.

Working Paper No. 206

Prepared in November 2017

1 Introduction

A comprehensive survey of János Kornai's contributions to the analysis of command and market economies cannot be accomplished within a single paper or even a whole special issue. Instead, I will focus on one specific contribution that is likely to take a special place in his intellectual legacy – as it is a concept introduced by Kornai and the one that will always be associated with his pioneering work. Obviously, I am referring to the concept of the soft budget constraint (SBC). Kornai's first paper on the SBC came out in *Acta Oeconomica* in 1980 where Kornai turned a chapter from his *Economics of Shortage* book into an academic article.¹

Kornai studied the SBC in the context of a command economy but later scholars (Dewatripont and Maskin, 1995; see a survey in Kornai et al., 2003) have shown that it is highly relevant for the market systems as well. Essentially, in market economies SBCs emerge because of the dynamic commitment problem. *Ex ante*, the creditor wants to be tough with the borrower so that the borrower has strong incentives to avoid failure. However, *ex post*, in case the borrower does fail, the creditor has incentives to restructure and refinance the debt, and even to provide new loans. The borrower of course understands the commitment problem *ex ante* and factors in the creditor's *ex post* softness in case of failure. Thus the creditor's *ex ante* "tough" stance is not credible and cannot provide strong incentives.

While the SBC mechanism applies to both command and market economies, it has dramatically different implications in these two cases. As SBCs generate inefficient effort, borrowers are more likely to fail. The whole idea of the SBC implies that this failure results in a delayed bankruptcy of the borrower or of the creditor – in a market system. For example, when subprime mortgages did not perform, this eventually resulted in bankruptcies of banks and other financial institutions holding – directly or indirectly – these mortgages. In the command economy (at least in its Soviet version), both creditors and borrowers – as well as any potential new owner of the assets – are owned by the state. There are no private owners whose equity stake can be wiped out in the process of bankruptcy. The losses have to be absorbed by the state one way or another. This is why SBCs are so central to the fate of the command economy. Eventually, the inefficiencies caused by SBCs bring the whole system down. Without private players assuming the losses, it is the state as a whole that is destined to go bankrupt at the end of the day, as the total losses overcome its fiscal capacity.²

While SBCs have been analysed in both command and market economies, there is relatively little work on SBCs in an important intermediate case: state capitalism. The latter is the system where the state owns major production assets but does not interfere in price setting directly. In such a system, shortages do not emerge but the state still controls commanding heights of the

¹In his 2014 "Soft Budget Constraint" paper (also published in *Acta Oeconomica*), Kornai recalls first introducing the SBC concept in a lecture series at Stockholm University in 1976.

²When Kornai discussed these issues in 1980, this sounded like an abstract idea. However, the 1980s showed that this path to bankruptcy was not only plausible but also inevitable. In the last years of the Soviet Union fiscal deficits rose from zero to 30 per cent of GDP (at which point the system collapsed). As discussed in Miller (2016) and Guriev (2018), this was not driven by idiosyncratic factors such as oil price decline and anti-alcohol campaign (each responsible for only 1-2 per cent of GDP fiscal deficit) but by an inability to reform and to get rid of SBCs in several key sectors (defence, energy and agriculture).

economy – via direct ownership or via the state-owned enterprises’ (SOEs’) influence on their counterparts.³

While state capitalism is by definition more flexible and more efficient than a full-blown command economy, it is still not obvious why it should exist. Indeed, the research on state ownership and privatisation (Megginson, 2005; Guriev and Megginson, 2007) quite clearly shows that private ownership of productive assets is more efficient. Why, then, would the state stick with state ownership instead of privatising and using proceeds for whatever political tools it cares about?

There are several possible answers to this question. First, there is the famous (or notorious) “ideology, inertia, ignorance” triad by Banerjee and Duflo (2012). It is possible that the state capitalist rulers are just not able or willing to implement optimal decisions. This explanation also involves ideological biases or ignorance of the government and/or of the public regarding the higher productivity of private firms. The second explanation is that privatisation is likely to result in redundancies (simply because SOEs are likely to hoard excess labour for political reasons, see Boycko et al., 1996; Shleifer and Vishny, 1994b) – and it’s possible that compensating the unemployed involves high transaction costs. Third, SOEs are easier to use for political purposes as reallocation of their resources (for example, through hiring excess labour or overpaying contractors) is less transparent than outright subsidies to political allies.

In this paper, I consider another explanation: the agency problem within the state bureaucracy interacts with SBCs and precludes privatisation of inefficient SOEs. The argument is straightforward. The bureaucrat overseeing the SOE observes its inefficiency and knows that privatisation would result in recognising its losses – thus revealing the bureaucrat’s prior lack of effort. Hence this bureaucrat may instead choose to pretend that the SOE is in a good shape and to invest more. This gambling for resurrection is not a social welfare maximising choice but it may save the bureaucrat with some probability. The essential part of the model is that the bureaucrat’s superior is fully aware of the possibility of this scenario. However, *ex ante* there can be other outcomes so that the superior’s rational choice is to reward the bureaucrat for strong performance of the SOE and to punish for the SOE’s failures.

How does this outcome differ from what would happen in a competitive market economy? Instead of a bureaucrat using public money to refinance a failing borrower, this would be a private creditor (a private bank) who certainly has a stronger incentive to go after a failing borrower – simply because his/her own cost of capital is not zero.

The rest of the paper is structured as follows. Section 2 discusses related literature. Section 3 presents the mechanics of the SBCs in a state capitalist economy. Section 4 considers the general equilibrium effects. Section 5 concludes.

³In academic literature, this system is often described as “market socialism” referring to the works of Lange (Lange’s research and Hayek’s critique of Lange had major influence on Kornai in his early years (Kornai 2006)).

2 Literature review

Following Kornai's (1980) seminal paper, the literature has covered almost every aspect of SBCs.⁴ There are two comprehensive surveys by Maskin and Xu (2001) and Kornai et al. (2003), so I will only discuss a few papers that are directly relevant to my argument.

First and foremost, Dewatripont and Maskin (1995) provided a formal model of SBCs showing that it is essentially a dynamic commitment problem – and that it plays out very differently in centralised and decentralised systems. Second, Bai and Wang (1997) built on Dewatripont and Maskin's model and linked the soft budget constraint to the bureaucratic incentives in a socialist economy. They showed that even without externalities, the agency problem in the bureaucracy may result in “good money being thrown after bad”. This argument is very close to mine although it is modelled on a socialist economy and does not consider the general equilibrium effects. Bai and Wang also assume the government's lack of political power which is not needed in my model, where government is fully rational and can commit to enforce contracts.

Third, there is a recent literature related to the role of bank lending in market economies and non-performing loans accumulated after the crisis. This literature dates back to the work by Mitchell (1998, 2001) on transition economies but also includes later work on “zombie lending” in Japan. Caballero et al. (2008) applied the concept of the soft budget constraint to the zombie lending phenomenon, where Japanese banks rolled over loans to inefficient firms. Here the mechanism is very similar to the one considered in this paper: the banks do not like to write off the non-performing loans (because of the central bank's supervisory pressure) which in turn results in zombie borrowers being kept afloat and more efficient rivals being prevented from entering the market. The banks are not (or are not necessarily) state-owned but since they are likely to be bailed out and taken over by the central bank, the government implicitly has a stake in the banks and therefore can provide incentives for bank managers and shareholders. In this sense, the literature on banks and non-performing loans is directly relevant for our discussion of soft budget constraints in state capitalism (with a difference being that the central bank has the same leverage over all banks while in our model there can also be independent private firms).

The general equilibrium effects of preferential financing arrangements for SOEs is also key to the “growing like China” models. Song et al. (2011) model the Chinese economy emphasising the distinction between “financially integrated” state firms that benefit from access to credit and “entrepreneurial” private firms that are more efficient but have to finance their growth through internal earnings. In their model, the government directly subsidises the state firms through providing preferential credit; they do not model the reason why this should be the case.

⁴I have checked the references to SBCs in economics literature by searching all economics papers on JSTOR. The five-year moving average of the number of papers having “soft budget constraint” or “soft budget constraints” in the text grew rapidly through the 1980s and early 1990s, peaking in 1996 and then slowly declining; then the number of such papers slightly increased in 2008-11 and then fell to mid-1980 levels by 2017. It is probably explained by the fact that the debate on the Great Recession developed its own language where “soft budget constraint” was replaced by “moral hazard” or “bailout”. It is also important that unlike the classical soft budget constraint scenario, the post-2008 bank and corporate bailouts were accompanied by the firing of CEOs and wiping out of shareholders. In this sense, the soft budget constraint may have become a victim of its own success – as the policy-makers have learned its importance.

It is also important to discuss the literature on state capitalism and privatisation. Shleifer and Vishny (1994a) describe the debate around market socialism and argue that politicisation of SOEs is unavoidable. They argue that politicians use SOEs for their political purposes in order to stay in power.⁵ This argument is different from the one in my model, where politicians are benevolent but not omniscient. Privatisation does not happen because of the agency problems in the bureaucratic hierarchy, but rather because of politicians' political incentives.

Lastly, I should refer to the empirical literature on the impact of privatisation on the privatised firms. The surveys of global experience of privatisation (Megginson, 2005; Guriev and Megginson, 2007) suggest that in the vast majority of experiences (excluding possibly Russia and the Czech Republic), privatisation has resulted in productivity growth and an increase in stock market valuations of privatised firms.⁶ The evidence from Russia is not uniformly negative either. The early panel studies of the almost-comprehensive sample of Russian firms (Brown et al., 2006) suggested that privatised firms were initially lagging behind SOEs in productivity growth. However, later analysis of the same sample (Brown et al., 2013) showed that after a few years of underperformance, privatised firms caught up and started outperforming SOEs. The change took place in the early 2000s – exactly when the Russian state switched to a conservative fiscal policy.

⁵Their argument is directly related to the idea of excess employment that is more likely to arise in state-owned rather than in privatised firms (Boycko et al., 1994; Shleifer and Vishny, 1994b).

⁶Estrin et al. (2009) provide a survey of studies of privatisation in transition economies; their findings are similar.

3 The mechanism

3.1 The setting

Consider a state-owned enterprise E that reports to a bureaucrat B who in turn reports to the principal (politician) P . P is benevolent and sets incentives for the bureaucrat to run E in the public interest (in particular, to raise productivity). However, P only has limited information regarding E 's performance. B monitors E and approves its investment – or makes decisions on its privatisation or liquidation. If E is privatised, the privatisation revenues are appropriated by P .

Productivity of E depends on E 's skill and effort. *Ex ante*, B only knows the distribution of E 's types (enterprises differ in terms of quality/skills). However, after observing its performance, B can update its beliefs accordingly.

The timing is as follows:

Period 0. P sets incentives for the bureaucrat (rewarding for E 's higher revenues). The bureaucrat exerts effort to find out the quality of E , receives a noisy signal on E 's type and decides whether to approve or reject E 's investment project.

Period 1. E undertakes investment. With certain probability it is successful; with certain probability it fails. The probability of success depends on E 's skills and effort.

Period 2. B observes the realisation of E 's investment and makes a decision whether to liquidate/privatise E or to provide additional resources (the latter choice may also include providing no additional resources). If E was successful in period 1, it is a positive signal on E 's quality hence providing additional resources is in P 's interest, so B makes this choice. If E fails, it is in the public interest to close E down (as E 's skills are inferred to be low). However, this would result in P punishing B for his poor performance. So instead of privatising E , B prefers to gamble on resurrection. This second-period “investment” is actually a disguised form of bailout at the taxpayer's expense.

Period 3. If E is not liquidated, its period 2's investment results in either success or failure. P observes this outcome and pays a bonus according to the contract signed in period 0. B 's payoff is his/her bonus set in the contract signed in period 0. E 's payoff is the amount of assets it controls by the end of period 3.

We assume limited liability for all players: neither B nor E can have negative payoff (that is, cannot be fined or go to jail).

3.2 Equilibrium

In the setting above, the equilibrium depends on the parameters such as the relationship between E 's effort and probability of success and the *ex ante* distribution of the SOEs' types. However, there exists a range of parameters where the equilibrium is as follows. In period 0, P sets a high bonus for B in case of SOE's success (and zero bonus in case of failure).⁷ In period 1, E expects a bailout in case of failure and under-exerts effort. In period 2 in case of success, E obtains new investment from B . In case of failure, B also provides new investment in order to increase the probability of getting the bonus (indeed, if B liquidates E in period 2, he does not get the bonus in period 3 with certainty). In period 3 if the project is a failure, B does not get a bonus. However, if E is successful, B does receive a bonus.

In this equilibrium, soft budget constraint emerges because of the principal-agent problem between bureaucrat and politician. It would be socially optimal to close down the failed SOEs in period 2 (as the failure is a signal of inferior quality and therefore of unlikely future success). However, the bureaucrat prefers to prolong the underperforming SOE's life as he cares about his own compensation.

⁷Another way to understand this contract is to interpret the bonus as B 's efficiency wage and zero payment in case of failure as B 's being fired.

4 General equilibrium effects

The model above implies that SOEs in a state capitalist setting are likely to underperform their private peers in terms of efficiency but are also more likely to survive when they fail to produce profits.

Consider a general equilibrium setting where SOEs coexist with private firms. Let us assume that the latter have hard budget constraints. So when the private firms fail, they liquidate their assets (which are then purchased by more efficient firms).

The SOE bailout mechanism described above means that SOE managers are *ex ante* more willing to pay higher prices for capital and labour than their private peers. Therefore by the end of period 3, the surviving SOEs are more likely to be larger and more profitable than surviving private firms.⁸

This result can explain why an empirical analysis of productivity and profitability of state versus private firms may show the underperformance of private ownership. This is not because the private firms are run less efficiently – it is just because the SOEs are more likely to be bailed out so they can afford to expand (eventually at the expense of the taxpayer).

The general equilibrium analysis points to yet another source of inefficiency of state capitalism. In addition to suboptimal effort invested in running an SOE, the state capitalism system essentially imposes a “bailout tax” on private firms. The private firms have to pay more for capital and labour to compete with less efficient SOEs that rely on a bailout from the state in case of failure. Notice that this bailout emerges endogenously in this model due to the moral hazard problem within the state’s bureaucratic hierarchy.

⁸Notice that for the sake of simplicity we consider a finite horizon game. Therefore some SOEs do get liquidated in period 3. In an infinite horizon setting, even inefficient SOEs can survive forever – until the state as a whole goes bankrupt.

5 Conclusion

It is striking how János Kornai's 1980 idea of SBCs continues to deliver important insights about the modern world. While the use of the term has been in decline in the last 10 years, it is not because it has lost relevance, but because it has gone mainstream and merged with other concepts such as dynamic inconsistency and moral hazard. Yet, it is useful to come back to the root of SBCs – the analysis of an inefficient command economy and comparisons between command and market economies. In this context, the concept of SBCs is very helpful for understanding the mechanics of a system that rose to prominence in the last two decades: state capitalism.

While multiple studies have shown that privatisation generally delivers higher firm-level productivity, governments in many countries are strikingly stubborn in keeping their assets in state ownership even when these assets are not run efficiently. In this paper I show that this can be explained by the agency problem between the government and its bureaucrats responsible for overseeing the SOEs. These bureaucrats have incentives to hide SOEs' inefficiencies – to pretend that they have done their own job (of supervising the SOEs) well.

This mechanism implies that even inefficient and failing SOEs get bailed out rather than liquidated. This in turn results in an unfair competitive advantage over the private firms. In general equilibrium, state-owned firms end up larger and more profitable than their private counterparts – even though the average private firm is run better than an average SOE. The observed outperformance of SOEs relative to private firms may of course further consolidate the public opinion *against* privatisation.

As a consequence, privatisation may be delayed further until it has to be carried out for fiscal reasons. Indeed, as costs of bailing out inefficient SOEs results in large fiscal deficits, at some point the government will simply have to start selling its assets. Unfortunately, this outcome may suppress privatisation revenues – due to high interest rates (caused by budget deficit) and the fire-sale effects. This in turn may undermine the political legitimacy of privatisation – the lower the privatisation revenues, the less popular privatisation is. The lack of political legitimacy of privatisation may result in lower security of property rights which in turn can reduce private owners' incentives to invest and further decrease privatisation's legitimacy.

How can these doomsday scenarios be avoided? Given that they seem to be intrinsic to the state capitalist system, one solution is to avoid state capitalism in the first place. The other is of course to address the agency problems in managing SOEs. This can be achieved via improving SOEs' transparency and corporate governance. Lastly, SOEs should face hard budget constraints: preferential subsidising and bailing out state-owned (relative to private) firms should be outlawed (as it is in the EU regulations on state aid). Certainly, bureaucrats will try to circumvent such regulation but the stricter the regulation, the costlier and hence the rarer the bailouts.

References

- C.-E. Bai and Y. Wang (1996), “Agency in Project Screening and Termination Decisions: Why is Good Money Thrown after Bad?”, *William Davidson Institution Working Paper Series*, No. 43, University of Michigan.
- A. V. Banerjee and E. Duflo (2011), *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*, Public Affairs.
- M. Boycko, A. Shleifer, and R. W. Vishny (1996), “A Theory of Privatisation”, *The Economic Journal*, 309–319.
- J. D. Brown, J. S. Earle, and S. Gehlbach (2013), “Privatization”, in M. Alexeyev, and S. Weber (Eds.), *The Oxford Handbook of the Russian Economy*, 161–185, Oxford University Press.
- J. D. Brown, J. S. Earle, and A. Telegdy (2006), “The Productivity Effects of Privatization: Longitudinal Estimates from Hungary, Romania, Russia, and Ukraine”, *Journal of Political Economy*, 114(1), 61–99.
- R. J. Caballero, T. Hoshi, and A. K. Kashyap (2008), “Zombie Lending and Depressed Restructuring in Japan”, *The American Economic Review*, 98(5), 1943–1977.
- M. Dewatripont and E. Maskin (1995), “Credit and Efficiency in Centralized and Decentralized Economies”, *The Review of Economic Studies*, 62(4), 541–555.
- S. Estrin, J. Hanousek, E. Koenda, and J. Svejnar (2009), “The Effects of Privatization and Ownership in Transition Economies”, *Journal of Economic Literature*, 47(3), 699–728.
- S. Guriev (2018), “Gorbachev vs. Deng: A Review of Chris Miller’s *The Struggle to Save the Soviet Economy*.”, *Journal of Economic Literature*, forthcoming.
- S. Guriev and W. Megginson (2007), “Privatization: What Have We Learned?”, in F. Bourguignon, and B. Pleskovic (Eds.), *Beyond Transition*, 249–295, Proceedings of the 18th Annual Bank Conference on Development Economics, World Bank Group.
- S. Guriev and A. Rachinsky (2005), “The Role of Oligarchs in Russian Capitalism”, *The Journal of Economic Perspectives*, 19(1), 131–150.
- J. Kornai (1980), “‘Hard’ and ‘Soft’ Budget Constraint”, *Acta Oeconomica*, 25(3/4), 231–245.
- J. Kornai (2006), *By Force of Thought: Irregular Memoirs of an Intellectual Journey*, Cambridge, Mass.: MIT Press.
- J. Kornai (2016), “The System Paradigm Revisited: Clarification and Additions in the Light of Experiences in the Post-Socialist Region”, *Acta Oeconomica*, 66(4), 547–596.
- E. Maskin and C. Xu (2001), “Soft Budget Constraint Theories: From Centralization to the Market”, *Economics of Transition*, 9(1), 1–27.
- W. L. Megginson (2005), *The Financial Economics of Privatization*, Oxford University Press on Demand.

- C. Miller (2016), *The Struggle to Save the Soviet Economy: Mikhail Gorbachev and the Collapse of the USSR*, UNC Press Books.
- J. Mitchell (1998), “Strategic Creditor Passivity, Regulation, and Bank Bailouts”, *CEPR Discussion Paper*, No. 1780, London.
- J. Mitchell (2000), “Theories of Soft Budget Constraints and the Analysis of Banking Crises”, *Economics of Transition*, 8(1), 59–100.
- A. Shleifer and R. W. Vishny (1994a), “Politicians and Firms”, *The Quarterly Journal of Economics*, 109(4), 995–1025.
- A. Shleifer and R. W. Vishny (1994b), “The Politics of Market Socialism”, *The Journal of Economic Perspectives*, 8(2), 165–176.
- Z. Song, K. Storesletten, and F. Zilibotti (2011), “Growing Like China”, *The American Economic Review*, 101(1), 196–233.