Questioning the Soft Budget Constraint

Changlin Luo

China Economics and Management Academy, Central University of Finance and Economics

First, this paper claims that the soft budget constraint is a contradiction in terms by showing that each "soft" budget line is in fact an incorrect one. By classifying the problems that were formerly conglomerated under the name of the "soft budget constraint," we show that a "hard" budget constraint exists for each specific problem. This leads to the realization that each of these problems originally belonged in a different analytic framework, and does not need to be related to the soft budget constraint. Finally, we illustrate how the former conclusions drawn from the "soft" perspective can be adjusted to form better interpretations under the original frameworks. Hence, we conclude that there is no such thing as the soft budget constraint.

Key Words: Soft budget constraint; Dynamic commitment; Paternalism; Competitive rent seeking.

JEL Classification Numbers: H72, H77, P20.

1. AN OUTDATED HISTORICAL LEGACY

Since it was introduced by Kornai (1979a, 1979b), the concept of the soft budget constraint has gained great popularity. To better understand the concept, it is worthwhile inspecting the political and economic background in which it arose. First, like socialist economies such as China and the USSR, Eastern Europe suffered problems in all areas from production to consumption due to the highly centralized planning system. Such problems inevitably attracted the attention of economists in those countries, of whom Kornai was just one. Second, the Cold War between the Socialist Camp and the Capitalist Camp still dominated the pattern of international relations. Kornai's studies of the socialist economy naturally aroused the interest of the Western academic community, which was much freer at that time. The background described above is also reflected in Kornai's personal experience. He mainly served as a Research Professor at the Institute of

Economics, Hungarian Academy of Sciences, from 1967 until 1986, during which time he was known for his studies on the socialist economy. In 1986, he joined the faculty of Harvard University in Cambridge, Massachusetts, USA, where he was named the Allie S. Freed Professor of Economics in 1992. Against this background, it is not difficult to understand the popularity of the soft budget constraint at that time, although it is much harder to understand why it has not ceased to exist before now.

There is still no integrated framework for the analysis of the concept and related problems and, according to the view of this paper, further efforts would not produce one. Interestingly, even Kornai has admitted that there is no precise definition of the soft budget constraint. It is possible to classify the research related to the concept into two groups. The first group comprises a large set of studies on the socialist and transitional economies, which attribute certain kinds of phenomena to the soft budget constraint. However, these studies can only be counted as a historical legacy, while the nature and essence of the problems behind the phenomenon remain untouched. The second group contains several formal mathematical models that have helped to provide clarifications of the phenomenon, and studies of some of the specific problems that are traditionally covered by the soft budget constraint. Kornai, Maskin and Roland (2003) gathered all of these models together and declared them to be the theoretic formalization of the concept. A well-known contribution in this area is the work of Dewatripont and Maskin (1995). However, as the authors claimed, their model dealt with the dynamic commitment problem, which can be, but is not necessarily, related to the soft budget constraint problem.[1]

Setting aside the political and economic background outlined above, the soft budget constraint remains a strange and unsuitable concept from the perspective of classical economic theory. For the optimization problem in economics, there are only binding and non-binding constraints; no such thing as a "soft" constraint has ever existed. If the "soft" constraint proposed by Kornai is actually a constraint in the true sense, it is either binding or non-binding. If it is binding, then it should not be called "soft"; if it is not binding, it is not effective in the optimization problem and should be discarded. Hence, the soft budget constraint is not compatible with the utility maximization paradigm. It is worth mentioning that "soft budget constraint" problems are often related to paternalistic relationships, such as the relationships between the state and state-owned enterprises, the central government and local governments, etc. It is not persuasive to claim that the "altruistic" behavior of superiors toward subordinates is not utility maximizing. However, superiors are always calculating their own interests,

---

[1]Their original words are: "...our framework may be relevant for two widely-discussed issues: the soft budget constraint problem of centrally-planned economies and ..."

and any form of behavior that favors subordinates is either for the purpose of mitigating the agency problem, or, more frequently, is in the interests of both superiors and subordinates because their interests are congruent. We explore this idea further in the sections that follow.

A pair of actors can always be found in the "soft budget constraint" problem. The first actor, which Kornai referred to as the BC-organization, has a budget constraint: its expenditures must be covered by its initial endowment and wealth. Another actor is always ready to cover all or part of the deficit of the BC-organization, and is referred to as the S-organization. Because the BC-organization always receives help from the S-organization when it is in difficulty, we call the former the Subordinate and the latter the Superior. In Kornai's view, the degree of softness of the Subordinate depends crucially on the effectiveness of the Superior's help; hence, it is obvious that the soft budget constraint problem will not arise in a circumstance where the Superior does not exist. In contrast, one of the purposes of this article is to show that the "soft" problem does not exist even in the presence of the Superior. Several steps are used to illustrate this point. First, we claim that the soft budget constraint is a contradiction in terms by showing that each "soft" budget line is in fact an incorrect one. By classifying the problems that were formerly conglomerated under the name of the "soft budget constraint," we show that a "hard" budget constraint exists for each specific problem. This leads to the realization that each of these problems originally belonged in a different analytic framework, and does not need to be related to the soft budget constraint. Finally, we illustrate how the former conclusions drawn from the "soft" perspective can be adjusted to form better interpretations under the original frameworks. Hence, we conclude that there is no such thing as the soft budget constraint.

2. A NAIVE MISTAKE

In one of his best-known figures illustrating the soft budget constraint, Kornai depicted the consumer's final choices P_1 and P_2 to the northeast of the "soft" budget line (Figure 1). The "original budget constraint" in the figure is what Kornai called the soft budget constraint. It was labeled "soft" because the final choices did not fall into the southeast, namely, the budget set, which would never happen if the budget line was "hard enough." In spite of this, Figure 1 naturally raises two further questions. First, could the final choice be drawn in the interior of the budget set, just like P_3? Second, could the choice be depicted a little further away, as from P_1 to P_4?

If the answer to the first question is negative, then the original budget line cannot be called "soft." If the answer is positive, or P_3 is chosen, it implies that the consumer did not spend all of his wealth; however, given that
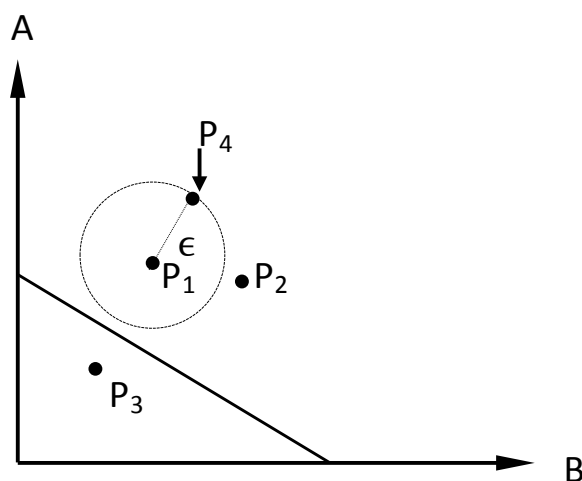
FIG. 1. The Original Budget Constraint

the preference is monotonic, this cannot happen according to the classical theory of consumption framework. The only remaining possibility requires making use of the soft budget constraint "paradigm"; i.e., the choice made by the consumer must have been distorted by the objective of his Superior. For example, Kornai (1986) once tried to re-clarify the concept of the soft budget constraint in a paper titled *The Soft Budget Constraint*, in which he described the process of reallocating profits and losses across firms under central commands. In fact, the Superior might demand that the wealthy Subordinates subsidize the poor ones. The gross effect of this reallocation process is to shift the original budget line toward the origin in Figure 1, until it intersects P_3.

On the second question, a shift from P_1 to P_4 with a length of $\varepsilon(>0)$ must be permitted; otherwise, P_1 must have been bounded by a "hard" budget line, which is negated by the "soft" theory. The remaining reasoning is immediate: as the shift from P_1 to P_4 is viable, so is any shift in the upper-right direction of length $k\varepsilon$, where k is a positive integer. It is obvious that when k tends to infinity, the final choice must also tend to infinity, which means that infinite resources have been consumed — hence, a contradiction.

These answers lead us to conclude that the soft budget constraint is a contradiction in terms, which is, to our understanding, a result of Kornai's mechanical dogmatism. Kornai's original mistake was in creating the soft budget constraint in the first place. No sooner had he drawn a budget line than he found that the consumer's expenditure had exceeded the budget line. He immediately concluded that the budget line must be soft, without checking whether the conclusion was correct. This was the very begin-

ning of the improper economic term. The term "mechanical dogmatism" refers to Kornai's mechanical copying of the budget line from the classical economic to the new "soft" environment, and declaring it "soft" once he recognized its ineffectiveness. In the following, we provide some examples to explain how Kornai drew these "soft" budget lines.

(1) The budget line is defined as the set of all of the break-even consumption bundles in a given period. If there is a Superior to make the expenditure exceed the endowment, then the soft budget constraint problem arises.

(2) There is a set of all possible operation patterns in which the firm is on the verge of insolvency. The existence of a Superior who is ready to support the operations even when the firm is insolvent makes the budget constraint soft.

(3) For bank loans, tax liabilities and accounts payable, the budget line is the set of all patterns of pay-back that clear off the liabilities before the deadline. If the actor can be exempted from punishment even if he fails to meet his liability, then the budget line is said to be soft.

(4) Consider a circumstance in which several Subordinates are competing for subsidies from a Superior, and the budget line is a pre-determined partition rule. The soft budget constraint problem arises when this rule is negotiable *ex post*.

All of the mistakes listed above stem from Kornai's failure to clearly identify the actor's endowment, which determines the height of the budget line. The endowments that determine the size of the budget set over a given time span include the actor's economic, political and social resources, etc., while factors such as economic and political institutions are irrelevant. Ignoring any of the endowments listed above will result in the same mistakes as those made by Kornai. It is worth mentioning that the term of the decision is important here, as it is worthwhile making some temporal sacrifice to realize a long-term goal. We exclude this possibility here because it is of no theoretical significance. Political and social resources are more often ignored than economic resources. In the first case listed above, it is quite possible that Kornai underestimated the importance of the Subordinate to the Superior. Imagine that a young girl regularly receives a given amount of pocket money from her mother at the beginning of each week. Although her parents are strict with the rule, her uncle loves her so much that he is always ready to help when she has overspent. The question then is what is the height of her budget line? It is of course higher than the regular amount given by her mother, and the actual height is determined by the generosity of her uncle. Even though her uncle is willing to give her everything she needs, the height is bounded from above, because at most she can spend her uncle into bankruptcy. It hence determines an insurmountable budget constraint, while the "soft" constraint in this example is determined by the

regular amount of her pocket money, which is obviously wrong. Theoretically, the political and social resources in a given economy are scarce, and have their shadow prices in the equilibrium. Hence, the Second Theorem of Welfare Economics tells us that the height of each actor's budget line can be calculated once the allocations of all of the economic, political, social and other resources are given.

3. A "PSEUDO-STATEMENT"

In this section, we show that the soft budget constraint is in fact a "pseudo-statement," a term from literary criticism that refers to utterances that are not subject to factual verification but which are valuable in "organizing our attitudes." To this end, we first show that all problems under the name of the soft budget constraint essentially belong to different analytical frameworks, and then, for each specific problem a "hard" budget constraint is found.

3.1. The dynamic commitment problem

For illustrative purposes, consider a specific problem in which the economic activity persists for two periods, from date 0 to date 2. The Subordinate makes a choice between good and bad projects at date 0, which is not observable to the Superior. If the good project is chosen, the project finishes at date 1 and both of the Superior and Subordinate get positive payoffs. If the bad project is chosen, it must either be refinanced or liquidated at date 1. Let the payoffs of liquidation be negative, then the Superior makes the decision on whether to refinance by weighting the payoffs. Although the Superior cannot observe the types of projects at date 0, he has a subjective probability distribution for the set of all possible types. Furthermore, he can make a commitment at date 0 on whether to refinance the bad project at date 1; this commitment can be violated at date 1 and the decision on refinancing remade. This circumstance usually raises the problem of credible commitment. The Superior might commit not to refinance bad projects *ex ante* at date 0, but find it is worth refinancing *ex post* at date 1 because the setup cost at date 0 is sunk. Expecting this possibility, Subordinates might choose bad projects, given that they know the Superior's subjective probabilities.[2]

According to Kornai, the dynamic commitment problem is the most typical of the soft budget constraint problems. The choice of a bad project breaks the "soft" budget constraint, which is determined by the condition that the net worth of the Subordinate must never be nonnegative. It is

---

[2]For the detailed process of establishing a mathematical model, please refer to the paper by Dewatripont and Maskin (1995).

obvious that the net worth of a bad project is negative in the absence of the Superior; hence, the budget constraint is named "soft." However, this "soft" constraint is incorrect, while the correct one is determined by the condition that the expected net worth of the Subordinate at date 0 must be nonnegative. The Subordinate chooses a bad project because the expected net worth is positive when the commitment is not credible. If the commitment is credible and bad projects are not worth refinancing at date 1, Subordinates will always choose good projects because bad projects result in negative expected payoffs.

It follows that there is no soft budget constraint in the dynamic commitment problem, which is merely a special topic in game theory. The soft budget constraint theories that belong to this framework are mainly built on the works of Shaffer (1989) and Dewatripont and Maskin (1995).

3.2. The transaction cost problem

Kornai argued that the existence of information and enforcement costs always gives rise to the soft budget constraint problem. The intuitive reason is that the actor, expecting the high cost of enforcing contracts, might choose to be in arrears with taxes, bank loans and other payables. Nevertheless, tax bureaus, banks and suppliers have already anticipated this behavior and developed optimal coping strategies. For example, taking into account the actual enforcement cost, a tax authority might set a cutoff value, T, below which the defaulted tax is spared, otherwise it is enforced. It is intuitive that if the defaulted amount is small enough, then costly enforcement is not worthwhile. Hence, the budget constraint that all payables should be cleared is a false constraint, while the true one is that the defaulted amount should never exceed T. A slight overstepping of this "hard" constraint will induce immediate enforcement action from the authority. It is worth noting that not all cases of tax allowance and debt forgiveness result from the transaction cost problem; for example, tax exemptions are enjoyed by state-sponsored enterprises (Claessens and Peters, 1997; Coricelli and Djankov, 2001) and firms payables are paid by governments to avoid economic downturns when the links between firms are tight (Perotti, 1993). We classify them into the following categories.

3.3. Paternalism

In paternalistic settings, it is frequently observed that Subordinates receive various types of help from the Superior. At the heart of this relationship is that their interests are closely aligned. For example, state-owned enterprises are supposed to deliver a given percentage of their profits to the central government, yet when they suffer a loss, they easily qualify for grants from the central government to keep them free from bankruptcy. To Kornai, there is a soft budget constraint that demands that the

net worth of the state-owned enterprise cannot be negative. However, the central government is the owner of all state-owned enterprises, hence the heights of their budget lines depend on the central government's objectives. If making profits is the only objective, although suffering losses in a few periods is tolerated, firms that never make a profit must be closed. The budget constraint here might refer to a cutoff value in a comprehensive performance measure over a given length of time, below which the firm will be closed. This constraint is "hard" because the losses suffered in earlier periods will largely limit the firm's options in later periods. It is worth mentioning that the constraint here is an inter-temporal one, and the government's expectation of firms' profitability is rather crucial in determining the cutoff value of the measure. If a given state-owned (or private) enterprise is crucial for economic stability, the cutoff value defined above may be very low. This is usually referred to as the "too big to fail" problem. The pocket money example in the second section is essentially the same problem. Two prominent cases of paternalism in practice are the relationships between the central bank and commercial banks (Berglof and Roland, 1995; Aghion, Bolton and Fries; Mitchell, 2000; Farhi and Tirole, 2012), and between the central government and local governments (Moesen and Van Cauwenerge, 2000; Jin and Zou, 2002, 2003, 2005; Shen, Jin and Zou 2012).

3.4.   Competitive rent seeking

A new group of problems arises when there is more than one Subordinate. This set of problems is studied in the competitive rent-seeking model first formulated by Krueger (1974). Consider the case in which the central government is to distribute a given amount of subsidy to a number of local governments (Zhang and Zou, 2012; Shah, 2014). It is routine work for the central government to make a draft budget at the end of the previous year that determines the partition of the whole subsidy. To Kornai, this draft is a budget constraint, which is soft if it is negotiable afterwards. Although Kornai is right that the original budget plan is beyond recognition after a series of bargaining processes, he is mistaken in naming any plan a "soft" budget constraint just because he fails to make clear the distribution of all resources among local governments that are essential to their bargaining power. Given a distribution of the political, economic, social and all other resources, the non-cooperative game theory predicts that there is a unique partition of the subsidy as a Nash Equilibrium. This partition cannot be softened. For example, if a local government's share is relative less than his bargaining power, then a variety of actions will be taken to retain the share it deserved. Some specific examples of allocating subsidies can be found in works by Gao and Shaffer (1998) and Earle and Estrin (1998).

4. CONCLUSION

Several conclusions can be drawn from the foregoing analysis. First, each "soft" constraint is in fact a wrong one. Second, a "hard" budget constraint exists in each specific "soft" problem. Third, each of these problems has an analytic framework to which it originally belongs; hence, it is not necessary to label such problems under the term "soft budget constraint." It is concluded that there is no such thing as the soft budget constraint, and its existence is merely a result of Kornai's naïve mistake. The use of the term in today's literature can only be regarded as a historical legacy. Furthermore, the conclusions that were drawn under the framework of the soft budget constraint are either false or need to be adjusted under their original frameworks. The most straightforward conclusion is that the problem of hardening a constraint is misleading, if not irrelevant, because there is no "soft" constraint. In fact, "hardenings" of budget constraints differ in essence because the problems themselves differ: in the dynamic commitment problem, "hardening" might refer to reinforcing the credibility of commitments; in the transaction cost problem, it can be regarded as reducing information and enforcement costs; in a paternalistic setting, it always refers to a better designed incentive mechanism; and in the competitive rent-seeking problem, it can be regarded as allowing more resources to be allocated by the price system, i.e., to limit the proportion of social and political resources as much as possible.

Kornai (1986, 2003) summarized three kinds of effect of the soft budget constraint, each of which can easily be shown to be either irrelevant or better explained in its original framework. The first effect is called the weakness of price responsiveness, which is irrelevant because the budget constraint faced by an actor is a "hard" one. The second effect is that the existence of a soft constraint lowers efficiency, for which we offer some new explanations: the information asymmetry phenomenon in the dynamic commitment problem; the waste stemming from rent-seeking activities; or the inefficient incentive scheme under the paternalistic relationship. The third effect is the excess of demand. Although it is intuitive that the consumer's demands for goods and services will increase when some bills are paid by others, we need another explanation because the "soft" constraint does not exist. As most political and social resources are devoted to unproductive activities, the excess demand can be explained by the fact that there are too many political and social resources in the society, which increases the demand for goods and decreases their production.

Similarly, the conclusions on economic transition, bank regulation and fiscal decentralization from the perspective of the soft budget constraint can be adjusted or re-explained accordingly. We omit their detailed explanations here.

REFERENCES

Aghion, P., Bolton, P., and Fries, S., 1999. Optimal design of bank bailouts: the case of transition economies. *Journal of Institutional and Theoretical Economics /Zeitschrift für die gesamte Staatswissenschaft* **155**, 51-70.

Berglöf, E. and Roland, G., 1995. Bank restructuring and soft budget constraints in financial transition. *Journal of the Japanese and International Economies* **9(4)**, 354-375.

Claessens, S. and Djankov, S., 1998. Politicians and firms in seven Central and Eastern European Countries. World Bank Policy Research Working Paper.

Coricelli, F. and Djankov, S., 2001. Hardened budgets and enterprise restructuring: theory and an application to Romania. *Journal of Comparative Economics* **29(4)**, 749-763.

Dewatripont, M. and Maskin, E., 1995. Credit and efficiency in centralized and decentralized economies. *The Review of Economic Studies* **62(4)**, 541-555.

Earle, J. S. and Estrin, S., 2003. Privatization, competition, and budget constraints: disciplining enterprises in Russia. *Economics of Planning* **36(1)**, 1-22.

Farhi, E. and Tirole, J., 2012. Collective Moral Hazard, Maturity Mismatch and Systemic Bailouts. *American Economic Review* **102**, 60-93.

Gao, S. and Schaffer, M., 1998. Financial discipline in the enterprise sector in transition countries: How does China compare? CERT discussion paper.

Jin, J. and H. Zou, 2002. How does fiscal decentralization affect aggregate, national, and subnational government size? *Journal of Urban Economics* **52(2)**, 270-293.

Jin, J. and H. Zou, 2003. Soft budget constraints and local government in China. In Rodden, Eskeland, & Litvack (Eds.), Fiscal decentralization and the challenge of hard budget constraints. MIT Press.

Jin, J. and H. Zou, 2005. Fiscal decentralization, revenue and expenditure assignments, and growth in China. *Journal of Asian Economics* **16**, 1047-1064.

Kornai, J., 1979a. Resource-constrained versus demand-constrained systems. *Econometrica: Journal of the Econometric Society* **47**, 801-819.

Kornai, J., 1979b. Economics of Shortage. North-Holland Publishing Company.

Kornai, J., Maskin, E., and Roland, G., 2003. Understanding the soft budget constraint. *Journal of economic literature* **41(4)**, 1095-1136.

Krueger, A. O., 1974. The political economy of the rent-seeking society. *The American Economic Review* **64**, 291-303.

Mitchell, J., 2000. Theories of soft budget constraints and the analysis of banking crises. *Economics of Transition* **8(1)**, 59-100.

Moesen, W., Van Cauwenberge, P., 2000. The status of the budget constraint, federalism and the relative size of government: A bureaucracy approach. *Public Choice* **104(3-4)**, 207-224.

Perotti, E. C., 1993. Bank lending in transition economies. *Journal of Banking & Finance* **17(5)**, 1021-1032.

Schaffer, M. E., 1989. The credible-commitment problem in the center-enterprise relationship. *Journal of Comparative Economics* **13(3)**, 359-382.

Shah, A., 2014. Localization and corruption: panacea of Pandora's Box? *Annals of Economics and Finance*, forthcoming.

Shen, C., J. Jin, and H. Zou, 2012. Fiscal decentralization in China: history, impact, challenges and next steps. *Annals of Economics and Finance* **13**, 1-51.

Zhang Q. and H. Zou, 2012. Regional inequality in contemporary China. *Annals of Economics and Finance* **13**, 113-137.