How to inhibit destructive positive feedback in time of economic crisis:

Contracts conditioned by state of economy

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Abstract

Market economy constitutes a self-regulating system with positive and negative feedbacks. Positive feedbacks accelerate system adaptation to external changes, however, they can also cause loss of stability and auto-oscillations (crises). In this work we propose a new economic mechanism: Contracts conditioned by state of economy. This mechanism can inhibit destructive influence of positive feedbacks in time of crisis, while preserving them during normal state of economy. Thus a central regulator obtains a new precise and efficient instrument of crisis management.

1 Introduction

Free market economy adapts very well to technological innovations and to changing preferences of consumers. It constitutes a self-regulating system, which possesses positive and negative feedbacks. Negative feedbacks stabilize the system, while positive feedbacks accelerate system adaptation to external changes. However, positive feedbacks can also cause loss of stability and auto-oscillations (crises). In this work we propose a new economic mechanism, which inhibits destructive influence of positive feedbacks in time of crisis, while preserving them during normal state of economy.

Some examples of feedback

Supply-demand equilibrium gives us a classic example of negative feedback: When excess of demand over supply happens, rise of prices leads to reduction
in demand and increase in supply, and vice versa. This feedback returns market back to balance.

Positive feedbacks are usual, for example, in stock markets. When a promising new technology arises, shares of corresponding companies start growing, investors start actively buy them, causing in turn their further growth. As a result, a new technology spreads very rapidly. However an "overshot" happens rather often: The technology has already reached its full capacity, but the investors continue buying new shares, which leads to their artificial overpricing - a stock bubble. This happened, for example, in 2000 during the boom of Internet companies. When the bubble bursts, market falls and destructive wave of crisis spreads throughout the entire economy.

More examples of destructive positive feedback

- **Consumption crisis**: In time of economic instability people change the nature of their consumption dramatically, saving on consumer durables, automobiles, tourism, etc., which in turn leads to a reduction in production and aggravation of general crisis.

- **"Bank run"**: If there is a threat of a bank fall, investors start "running away", taking back their deposits, which leads to actual downfall.

- **Credit crisis**: In anticipation of a general crisis, banks become reluctant to lend money to companies for fear of their bankruptcy. As a result, the availability of credit falls sharply, its price increases, which leads to the actual destruction of many companies.

- **Panic at stock market**: In the fall of many stocks, holders start to sell them out, leading to even greater fall, so that stock prices become much lower than their real value, and many companies, deprived of the funding on the stock market become really bankrupt.

- **Moral hazard from social insurance**: Dismissing an employee during a crisis, a company may save far less money comparing to the harm it caused to the employee and society. Growth of unemployment increases burden of government budget and reduces consumer confidence, which in turn lead to crisis aggravation.

## 2 Contracts conditioned by degree of crisis

During normal state of economy positive feedbacks improve its dynamics, providing rapid growth of new industries and destruction of obsolete and inefficient companies. However during crisis positive feedbacks may deepen the crisis rapidly, leading to destruction of valuable economic resources. In order to resolve this dilemma, we propose a new economic mechanism: *Contracts conditioned by degree of crisis in the economy as a whole, or in some particular industry*. Such contracts would inhibit positive feedbacks during crisis, while preserving
them in time of normal development. Below we present several examples of such contracts.

a. Insurance of companies by their consumers

Under conditions of instability (for example, on eve of crisis) consumers change their behavior dramatically, saving on durables, automobiles, tourism, etc. The whole economy goes into different "mode of operation", depressing entire industries and regions. The same can occur due to sudden changes in the external world: For example, in time of epidemic people can dramatically limit their travel.

Obviously, these changes are temporary in nature, and it would be unproductive to retrain and move workers from the crisis industries somewhere else. On the other hand, support of these industries require huge funds, and state budget may not be able to bear such costs. Existing insurances can also break down, when simultaneously presented a myriad of insurance bills for payment.

However, a close look shows, that the necessary funds exist. They are in pockets of former customers of the crisis industries, and precisely in necessary amounts. Really, the corresponding goods and services were not purchased, and the money was saved! How to transfer these funds to the "thirsty" industries and their workers? For this purpose I propose a new mechanism: Insurance of producers by their customers.

Let me explain the idea with an example. Buying a flight ticket, we encourage certain production level of the air transportation industry. I would propose, that the consumer, simultaneously with the purchase of a ticket, would sign an insurance bond for the price proportional to the ticket price. In time of crisis people fly less and do not spend as much money on tickets. Government has a right to declare a state of emergency in the aircraft industry, giving it the right to receive a certain part of value of insurance bonds in its possession, raising the money from the former consumer. In exchange, the consumer receives shares of the airline company of equal amount.

As the airline also is a consumer of goods and services of other companies, for example, in fuel or airplane construction industry, it can spend part of the money received from bonds for the payment of insurance bonds of these suppliers, receiving in exchange their shares.

In order to accelerate payments of insurance bonds to a company, Central Bank can immediately provide the payments in exchange of the bonds, putting the debt on the consumer’ name. This debt could be repaid by the consumer automatically over time, in the form of a temporary tax, or by his own insurance bonds. In order to avoid support of obsolete branches of economy, it is reasonable to limit action of a bond by some period of time (for example, 3 - 5 years). See [1, 2] for more details.
b. Insurance of banks by their depositors

In time of crisis banks can fail because of failure of many borrowers to pay their debts. Failure of a bank is a very painful event for the society: very valuable information about credibility of borrowers and efficiency of investments, all the body of connections with depositors and borrowers, all collective experience of bank workers and experts will be lost. We really want inefficient banks to fail during normal state of economy, but we also would like to put a safety cushion for all banks in time, when even best of them meet serious difficulties. Usually governments do this, and the process may be very painful for government debt.

Here we propose an alternative solution: Depositors should take a commitment to insure their bank. Such commitments, in form of insurance bonds, should be accumulated in time in proportion of deposit or dividend amount of every depositor. In time of financial crisis, the government can give banks a right to receive a certain part of value of insurance bonds in their possession, raising the money from the current and former depositors. In exchange, the depositor will receive shares of the bank of equal amount.

c. Insurance of borrowers by their creditors (banks)

When a company borrows money from a bank, the bank should provide it with funding pro rata during the crisis as well, in exchange for shares of the company (using insurance money obtained from the bank depositors, as above, and a mechanism similar to one in preceding paragraph.)

d. Crisis guarantees to workers by their employers

By dismissing an employee during crisis, a company may save some money, but the resulting harm to the employee and to the society can be much greater. It would be useful to discourage companies from firing workers based on short-time interest during economic crisis. This goal can be achieved by obligation of a company to pay substantial compensation (say, 1 -2 annual salaries) to each worker fired during crisis. This fee should not be covered by any other kind of insurance. In order to survive, the company can instead issue new shares and sell them to the former customers, as in paragraph “a”, and / or to a bank, from which it took loans in normal times, and / or to (former) shareholders.

3 Conclusions

We have proposed a new cushion mechanism of economic crisis, which helps to preserve employment, and leads at the same time to redistribution of property rights. A great advantage of this approach over the traditional methods of crisis management is the ability to move money fast from the area of excess to the area of shortage, blocking the crisis at early stage, before the waves of instability spread over entire economy.
A common feature of our proposition is that the portion of insurance bonds, permitted to realization, is regulated by government in accordance to the extent of crisis. In this way government obtains a very delicate and efficient instrument of crisis management. Analysis of the proposed mechanism and development of its details require further research.

References
