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On the inherent instability of private money ☆

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ABSTRACT

A primary concern in monetary economics is whether a purely private monetary regime is consistent with macroeconomic stability. I show that a competitive regime is inherently unstable due to the properties of endogenously determined limits on private money creation. Precisely, there is a continuum of equilibria characterized by a self-fulfilling collapse of the value of private money and a persistent decline in the demand for money. I associate these equilibrium allocations with self-fulfilling banking crises. It is possible to formulate a fiscal intervention that results in the global determinacy of equilibrium, with the property that the value of private money remains stable. Thus, the goal of monetary stability necessarily requires some form of government intervention.

1. Introduction

Substantial changes in financial regulation, together with significant advances in information technology, have revived the debate on the role of private agents in the provision of payment services, especially because of the increased role of nonbank private firms in the supply of alternative payment instruments. For instance, financial innovations in the form of privately issued electronic money have increasingly gained the attention of economists and regulators alike. As a result, there has been renewed interest in the fundamental properties of a purely private monetary system. A primary concern is whether private agents are able to provide a stable monetary framework in the absence of government intervention.

Some economists have argued that many forms of government intervention in the monetary system can be a source of instability and that private markets are capable of providing a sound monetary framework. Others have argued that government control over the monetary system is necessary for achieving stability. In particular, there has been much emphasis on two polar views. Friedman (1959) has argued that the government should be the sole issuer of currency because private creation of government money substitutes will necessarily lead to excessive volatility in the supply of money and, consequently, an unstable monetary system. At the other extreme, we have the argument made in Hayek (1976) that private agents through private markets can effectively achieve desirable outcomes, even in the field of money and banking. According to this view, there is no reason to believe that any form of government intervention is necessary for the establishment of a stable monetary system.[1]

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[1] See also King (1983) and Friedman and Schwartz (1986) for a critical examination of some proposals for monetary reform.

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In this paper, I study the properties of a purely private monetary system and investigate whether it is possible to achieve a stable monetary framework under perfect competition. I show that a purely private monetary system is inherently unstable due to the properties of endogenously determined limits on private money creation. Precisely, there exist multiple equilibrium allocations characterized by a self-fulfilling collapse of the value of privately issued liabilities that circulate as a medium of exchange. In view of this intrinsic instability, I formulate a fiscal intervention that results in the global determinacy of equilibrium, with the unique equilibrium involving a stable value of private money (i.e., the ensuing equilibrium allocation is stationary). Thus, my results indicate that a competitive private monetary system requires a specific form of government intervention to ensure stability.

The important characteristics of the model are as follows. Buyers and sellers meet bilaterally in each period, and a seller is willing to produce for a buyer provided that the latter has something of value to offer in exchange. A buyer is able to access a production technology only when he is *not* searching for a trading partner, so he must rely on some store of value to trade with a seller. In this economy, the most productive investment projects are long-term, so buyers cannot directly use the proceeds from investment projects as a means of payment. Neither can a buyer credibly use claims on these technologies to trade with a seller because the pair will never meet again. This characteristic of the physical environment, combined with a lack of commitment, also rules out the use of personal credit.

Although buyers and sellers trade bilaterally in dispersed locations, each one of them has an opportunity to periodically visit a centralized location. However, arrivals at and departures from the centralized location are imperfectly coordinated (in particular, a buyer does not overlap with any seller in the centralized location, and vice versa), so a buyer–seller pair cannot use the centralized location to settle debt. In this economy, a subset of agents, referred to as bankers, is permanently settled in the centralized location, so they can issue a transferable payment instrument that can be used to settle bilateral transactions because it can be redeemed in the centralized location. The problem is that agents do not observe the amount of collateral pledged as reserves to secure these privately issued claims. Combined with a lack of commitment, this gives nonbank agents a reason to distrust bankers.

The key economic decision in the model is the nonbank public's willingness to hold privately issued claims, referred to as notes, for transaction purposes. When an agent decides whether to obtain privately issued notes in exchange for something he is able to produce, he worries about whether the private agent who has issued them is willing to redeem them on demand. The willingness of the issuer to redeem his notes depends on the profitability of the note-issuing business. If the present value of the flow of income derived from the note-issuing business is sufficiently large, then the issuer is less inclined to renege on his promises, given that this decision will lead other agents not to trust him in future transactions (so he will no longer be able to issue notes that are widely accepted as a means of payment). Thus, to determine whether an issuer is willing to keep his promise, agents must form beliefs regarding the flow of income derived from the note-issuing business. I show that, under perfect competition, there exist multiple beliefs that are consistent with an equilibrium outcome, including a class of beliefs that is characterized by a self-fulfilling collapse of the value of private money. I associate this class of equilibrium allocations with self-fulfilling banking crises.

It is important to emphasize that the reason for the existence of multiple self-fulfilling equilibria involving a collapse of the value of private money is different from that giving rise to self-fulfilling inflationary equilibria in outside-money economies, such as those characterized in Wallace (1980), Woodford (1984), and Lagos and Wright (2003).[2] As described above, in my analysis, the key element generating multiplicity of equilibrium is the distrust of banks (i.e., note-issuing agents), which requires traders to form beliefs regarding the continuation value of the note-issuing business to determine the acceptability of private notes as a means of payment. In other words, if we refer to the continuation value of the note-issuing business as the franchise value, then the key element giving rise to multiple equilibria is the nonbank public's beliefs regarding the evolution of the franchise value.

The existence of multiple equilibria due to endogenous limits on note issue is not invariant to the structure of the banking system. In particular, I show that a monopolistic banking system results in a unique equilibrium allocation, even though the decision to accept private notes in transactions requires agents to form beliefs regarding the evolution of the franchise value of the monopolist bank, as in the competitive banking system. This means that a monopolistic banking system is consistent with monetary stability.

Depending on parameters, the unique equilibrium allocation under monopoly is exactly the same as the stationary allocation under perfect competition (with a constant value of private money), which is surprising given the existence of market power in the banking sector. To understand this result, it is important to keep in mind that even in a competitive banking system each banker obtains a strictly positive franchise value to induce the voluntary convertibility of private notes, which results in a lower rate of return on bank liabilities than what would be obtained under full commitment. The monopolist bank would be willing to pay a higher return on its liabilities than the level consistent with a competitive regime under limited commitment in order to raise the revenue from the sale of notes, maximizing its profits despite an increase in the cost of funds. Because a higher return on bank liabilities would lead the monopolist bank to strategically suspend convertibility, it is necessary to reduce the return to the competitive level (under limited commitment) to make it consistent with voluntary convertibility. Depending on parameters, I also find that the return on bank liabilities under monopoly is lower than the return under perfect competition, so the stability of the banking system comes at a cost to the nonbank public.

[2] See also Zhu (2003) and Jean et al. (2010).