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Debt enforcement and the value of money

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Abstract

This paper presents a framework in which fiat money has value in equilibrium even though a risk-free higher-return asset can be equally used as a medium of exchange. In a limited-commitment environment, agents may prefer to borrow a low-return asset because that results in a larger borrowing capacity. Thus, a monetary equilibrium in which money is dominated in rate of return exists.

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1. Introduction

The usual approach to address the coexistence of fiat money and higher-return assets is to highlight the features that favor the use of money in exchange, and thereby make money more liquid than the alternative assets.¹ This paper presents a framework in which money has value in the presence of a risk-free higher-return asset, even though money does not display any advantage as a medium of exchange. Instead, the use of money is associated with credit frictions. When debt enforcement is not fully feasible, the low return on money dampens incentives to default.

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¹ The coexistence of money and risk-free higher-return assets, usually referred to as the rate-of-return dominance puzzle, has long been viewed as challenging for the theory of money (Hicks, 1935; Hellwig, 1993; Wallace, 1998; Lagos et al., forthcoming).

Therefore borrowing money results in a larger borrowing capacity than borrowing an asset with a higher rate of return. A demand for money loans may arise, leading to the positive price of money in equilibrium.

I adopt a model à la [Lagos and Wright \(2005\)](#) in which two sequential markets open every period. The first market motivates the use of a medium of exchange and the second market allows agents to rebalance their asset holdings. There are buyers who live two periods. In order to purchase consumption, newly-born buyers must resort to bankers to borrow. There are two assets: money and a real asset which displays a higher rate of return. The buyers' key choice is whether to borrow money, the real asset, or both.

In the model, bankers are able to enforce debts owed by buyers who participate in the second market. However, default on debt by buyers who abscond is feasible, and thus bankers must make sure that repayment incentives are fulfilled. The limited enforcement capacity of bankers entails that defaulters must skip the second market, and are therefore unable to rebalance asset holdings. Since money depreciates over time more than the real asset, borrowing money entails less capacity to smooth consumption in case of default. This causes the size of a money loan that is compatible with repayment incentives to be higher, in real terms, than the size of a real-asset loan. Borrowing money, however, is more costly than borrowing the real asset since bankers ask to be compensated for the depreciation of the loaned assets. As a result, agents face a trade-off: they can opt for a more sizeable money loan at a higher interest rate, or for a smaller, but less expensive, real-asset loan. If borrowers highly value consumption, they are willing to take out a money loan, and a credit-constrained monetary equilibrium exists. In this equilibrium buyers borrow money and, once they are able to rebalance asset holdings, they save the real asset; hence both assets are used as media of exchange.

In the literature on the rate-of-return dominance, the value of money generally stems from some asymmetry between money and alternative assets which renders money advantageous as a medium of exchange.² The use of high-yielding assets in trade can be limited by legal restrictions ([Bryant and Wallace, 1980](#); [Wallace, 1983](#)), private information about their quality ([Alchian, 1977](#)), the volatility of the assets' return ([Lagos, 2010](#); [Jacquet and Tan, 2012](#)), or pricing mechanisms that select allocations contingent on the buyer's money holdings ([Zhu and Wallace, 2007](#); [Hu and Rocheteau, 2013](#)).³ Money can also be used if the supply of the alternative asset is scarce (e.g., [Geromichalos et al., 2007](#)). Unlike this literature, in this paper money and the competing asset have different rates of return but are otherwise identical. Thus, in contrast to the idea that money is valued despite being a dominated asset, this paper suggests that money might be valued precisely because of its poor return.

In the cited literature a liquidity premium associated with the usefulness of money in facilitating exchange usually arises. The full return on money thus comprises its fundamental return and its liquidity return. Agents choose a portfolio of both assets, money and the higher-return asset, such that they are indifferent, at the margin, between one unit of either asset. Thus, a rate-of-return equality condition by which money and the higher-return asset yield the same full return, with money carrying a liquidity premium and a lower fundamental rate of return, typically holds in equilibrium. By contrast, in this paper money does not display an advantage in exchange.

² One exception is [Lagos \(2013\)](#) who shows that if fiat money is heterogeneous in some extraneous attribute it can coexist with risk-free bonds owing to self-fulfilling beliefs.

³ [Aiyagari et al. \(1996\)](#), [Li and Wright \(1998\)](#) and [Ferraris and Mattesini \(2014\)](#) build on the legal restrictions theory of money demand. [Williamson and Wright \(1994\)](#), [Rocheteau \(2011\)](#) and [Lester et al. \(2012\)](#) study information frictions in exchange.

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