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The evolution of cash transactions: Some implications for monetary policy☆

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Abstract

This paper considers the implications for monetary policy of a decreasing demand for outside money. It finds that even perpetual declines in the demand for base money pose no threat to the traditional methods employed for conducting monetary policy. The effects of such reductions in the demand for central bank liabilities, however, do depend on how monetary policy is conducted. Four monetary policy regimes are analyzed. With a policy of nominal-interest-rate targeting, a secular decline in the volume of cash transactions unambiguously leads to accelerating inflation. A policy of maintaining a fixed composition of government liabilities leads to accelerating (decelerating) inflation if agents have sufficiently high (low) levels of risk aversion. Inflation targeting produces falling nominal and real interest rates, while a policy of fixing the rate of money growth can easily lead to indeterminacy and endogenous oscillation in interest rates. It is argued that a policy of fixing the composition of government liabilities has several advantages if it is known that agents are not too risk averse and that the asymptotic demand for base money is small. If this information is not known, then interest-rate or inflation targeting

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have an advantage because their consequences are not sensitive to such environmental features.

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0. Introduction

It has long been thought that monetary policy affects the macroeconomy by inducing variations in the supply and demand of outside money.[1] Recently, however, the traditional sources of the demand for outside money have been in pronounced decline. For example, continuous technological improvement in electronics and communication systems has made possible the development of several new, noncash means of payment. As the use of these new payment instruments has grown, there has been a noticeable shift away from the use of cash in transactions. According to *The Nilson Report* (1997), cash accounted for 20% of the dollar volume of U.S. payments made by consumers in 1990 and 18% in 1996, and is projected to account for only 16% in 2000 and 12% in 2005.[2] At the same time, many countries have eliminated reserve requirements on most or all intermediaries, and those that have not done so (such as the United States) have permitted financial innovations that render reserve requirements virtually inconsequential.[3] As a result, it seems entirely possible that the demand for base money may virtually or entirely vanish in the not-too-distant future.[4]

These developments necessitate the reopening of some age-old questions in monetary economics: What does a declining demand for base money – and,

[1] For example, Lindsey and Wallich (1989, p. 231) assert that 'variations in the supply of reserves relative to the demand for them, with associated impacts on the cost of reserves, other interest rates, and the stock of money, are the initial channels through which most central banks of developed capitalist countries use their policy instruments to affect the macroeconomy.'

[2] Cash is used, and will continue to be used in the foreseeable future, for most small consumer transactions. Such transactions constitute the majority of all transactions, but their total dollar value is relatively small (see Nilson, 1997).

[3] See Sellon and Weiner (1996).

[4] At present, these statements apply only to the domestic demand for base money. Foreign holdings of dollars have increased, and probably will continue to increase for some time. However, as superior payments technologies become more generally available on a worldwide basis, presumably the same forces that have led to a declining demand for base money in the United States also will lead to a declining demand for dollars abroad.