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Payment systems, inside money and financial intermediation

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ABSTRACT

This paper assesses the impact of introducing an efficient payment system on the amount of credit provided by the banking system. Using payment system reforms in Eastern European countries over the 1995–2005 period as a natural experiment, we find evidence that payments reforms were an important precondition for the credit boom observed in our sample countries. We also find that payment system reforms led to a shift away from cash (outside money) and towards demand deposits (inside money) as a medium of exchange and that this in turn enabled an expansion of credit in the sample countries. These findings have important implications for our understanding of financial intermediation, highlighting the nexus between banks' role as providers of payment services and as providers of credit.

> *"We'd always thought that if you wanted to cripple the US economy, you'd take out the payment systems. Banks would be forced to fall back on inefficient physical transfers of money. Businesses would resort to barter and IOUs; the level of economic activity across the country could drop like a rock."*
> Alan Greenspan, Chairman of the Board of Governors of the US Federal Reserve System, 1987–2006.

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1. Introduction

Payment systems[2] are the means by which inside money is transferred between banks.[3] Reforms to improve the efficiency of these systems have the potential to improve welfare by increasing the demand for inside money and reducing the need for outside money. The reason is that banks use inside money (deposits) to finance lending to the corporate sector and households. An economy that increases its reliance on inside money relative to outside money may therefore be able to support a higher level of investment and growth as capital is accumulated. Indeed, the extant literature has found a robust relationship between financial depth, as measured by the amount of credit extended by the banking system and the subsequent rate of growth of the economy as a whole.[4]

In this paper we investigate whether or not the efficiency of interbank payment systems and credit creation are linked. In particular we ask whether the introduction of more efficient payment systems in Eastern European countries over the 1995–2005 period has boosted banks' provision of credit to the economy. We find strong evidence that payment system reform led to sizable increases in the creation of credit in reforming countries. We also document that increases in intermediation were underpinned by a shift away from cash towards the holding of bank deposits for transactions purposes, which in turn boosted the provision of credit by the banking system.

Historically, banks have played a central role both in facilitating payments and in the creation of credit.[5] But most theories of banking ignore the interplay between the two. These theories emphasize frictions such as asymmetric information on borrowers and incomplete markets more generally as important in understanding intermediation. In an influential study, Diamond (1984) argued that intermediaries overcome asymmetric information problems by acting as "delegated monitors". Another strand of the literature, starting with Diamond and Dybvig (1983) emphasizes the role of banks in insuring liquidity needs of customers while at the same time investing in longer-term assets. However in these models and much of the subsequent literature, both a bank's assets and liabilities are real and there is no separate role for money as a medium of exchange between agents. Only very recently have economists started to provide theories of intermediation where monetary disturbances (such as shifts in the demand for cash relative to deposits) can affect the amount of credit provided by the banking system, e.g. Diamond and Rajan (2006).

On the other hand, a sizable body of empirical literature provides evidence linking monetary disturbances to business cycles. In their analysis of the Great Depression, Christiano et al. (2004) argue that the contraction in economic activity was primarily the consequence of a shock that induced a shift away from privately intermediated liabilities, such as bank deposits, and towards currency. Households accumulated currency at the expense of demand deposits that could be used to fund entrepreneurs, in turn depressing business investment and economic activity. In the same vein, Rockoff (1993) provides evidence that the Great Depression was the consequence of a drastic deterioration in the acceptance of bank money as payment medium. At the time, it was a chain of bank failures that caused the payment system to collapse; and it is thought that confidence in bank money was restored only by structural reforms to address financial risk in the banking system, such as the introduction of federal deposit insurance.

Our paper builds on a small empirical literature that has documented links between deposit taking and lending. There is evidence to suggest that information obtained through monitoring the cash flow in and out of demand deposits can be used by banks to help make credit decisions (Mester et al., 2007). Moreover, Berlin and Mester (1999) show that banks that are financed by core (transaction) deposits are able to insulate borrowers from changes in aggregate borrowing costs, because what banks pay on core deposits is relatively insensitive to economy-wide fluctuations in the cost of credit. Finally, the literature documents synergies between deposit taking and loan commitments, and hence lending

[2] The term payment system refers to the instruments, organizations, operating procedures, and information and communication systems used to initiate and transmit payment information from payer to payee and to settle payments (BIS (2001), *Core Principles for Systematically Important Payment Systems*, Committee on Payment and Settlement Systems, January).

[3] In this process the transfer of inside money (deposits) is settled through exchanges of outside money, i.e. the ultimate settlement asset, usually central bank balances.

[4] See King and Levine (1993) for an early contribution to this literature. In this paper we examine in more detail the determinants of financial depth, taking its potential to contribute to economic growth as given.

[5] Manning et al. (2009) provide an account of the historical evolution of banks and their role in providing payment services.