

Payment and Settlement Systems: Issues in Supervision and Monetary Policy

The operational efficiency of a financial system hinges critically on minimising transactions costs through the institution of a well functioning payment system. The monetary policy maker's interest in payment and settlement systems is, however, of recent origin. This underlines the potential that the on-going revolution in information technology has for improving the efficacy of settlement, especially in terms of transmission of information about funds and thus for enhancing the efficiency of financial markets. At the same time, this also reflects the very real impact that the choice of particular settlement systems have on systemic risk, especially given the increase in the risks of contagion. Besides, the choice of the payment and settlement system also carries implications for the scale and scope of alternate monetary regimes. Finally, in the case of developing countries, such as India, there is the added pressure of sheer volumes with the spread of banking in the past two decades vastly increasing the transactions settled through the banking channel.

The payments system has a multiplicity of layers where several levels of intermediation occur in the transfer of funds from one person and/or institution to another. At the base of the 'Payments Pyramid' are the non-banks (all non-depository corporations including individuals and firms) whose assets are diverse, including bank notes and deposits, which transact in both cash and non-cash modes of payments. Banks, at the intermediate level, channel the flow of funds from one set of units to another. The funds between banks flow through clearing house and settlement bank. At the apex of the pyramid is the central bank, which maintains banks' settlement accounts. While the settlement account can be maintained with any bank, there is

always a risk of default by the settling bank leading to a possible systemic collapse. Settlement accounts maintained with the central bank, on the other hand, provide the basic stability to the settlement process as the central banks cannot fail. Thus central banks are special in payment and settlement systems.

The management of change in payment and settlement systems is thus critical to the central bank not only from the point of view of operational efficiency but also from the view of monetary policy operations and supervision. This raises three critical questions:

- What should the appropriate settlement system be?
- What should be the role of the Reserve Bank in the operation of payment and settlement systems? and finally,
- What are the implications of the payment and settlement system design for the conduct of monetary policy?

There are no clear answers to any of these questions mainly because the process of change is still evolving. This also means that most economies, especially in the emerging markets, have to chalk their own course, based on international experiences and on their circumstances. In this context, the ten Core Principles for Systemically Important Payment Systems, issued by the Committee on Payment and Settlement Systems of the Bank for International Settlements (January 2001) provide a guide. These involve the creation of an effective payment system with multilateral netting on a daily basis, supported by appropriate technological platforms and legal basis. The Core Principles provide a benchmark to the road ahead but at the time, it must be emphasised that the specific national characteristics need to be taken on board in the

design, operation and supervision of settlement systems. Against this backdrop, it is now necessary to turn to the three questions posed earlier.

What should the settlement system be?

Of the three questions posed above, the first now appears to have a reasonably clear answer. In this context, there are a variety of models available. For instance, the settlement of transactions could be on gross basis or on net basis. Similarly, the timing of settlements could vary from immediate (real time) to discrete (at pre-determined intervals) to at the end of a period (deferred). The present settlement mechanism in India, for example, is essentially a deferred net settlement system (DNS) system. There is now, by and large, a common consensus in favour of a real time gross settlement system (RTGS) in which processing and final settlement of funds transfer instructions take place continuously (Table 1). The critical advantage of (RTGS) lies in reducing the *domino* risks of default. Since each transaction is

Table 1: RTGS in Select Developed Economies						
Country	Name	Owner	No. of Participants	Processing	Settlement	Members
France	TBF	Central bank	216	Real time transmission	RTGS	Open to banks
Germany	ELS	Central bank	2,773	Real time transmission	RTGS	Open to banks
UK	CHAPS	Banks	434	RTGS	Multilateral netting	Restricted
USA	Fedwire	Central bank	10,034	Real time transmission	RTGS	Open to banks

Source: RBI's Report on Currency and Finance, 1999-2000.

settled individually, single cases of default do not become systemic as happens in a net settlement system.

In India, while systemic payment risks are now virtually non-existent because of institutional reasons such as state ownership of major banks, there is an urgent need to put in place an appropriate framework of risk reduction measures with the changing economic landscape in a deregulatory environment. The Payment Vision Statement notes that the implementation of the Real Time Gross Settlement System to provide for funds settlement across bank accounts in central bank money - on a real time basis - was a key element in the Agenda for Implementation. This was also endorsed by the Advisory Group on Payment and Settlement Systems (Chairman: Shri M.G. Bhide) (2000). The Reserve Bank is now putting in place an RTGS system. Pending the institution of a full fledged RTGS system, the Reserve Bank has already operationalised a Centralised Fund Management System (CFMS), which enables fund managers of banks to obtain a national position of balances in their accounts with the Reserve Bank.

What should be the role of the Reserve Bank in the operation of payment and settlement systems?

The answer to the second question is less clear. Indeed, a key issue in the design of the payment and settlement system is the extent of the role of the central bank. Central banks could be involved in the payment and settlement operations in three ways: in an operational capacity, payment system overseers or as catalysts or

facilitators of market or regulatory evolution. The question is whether moral hazard problems arise when the central bank combines the roles of a regulator as well as the payment system provider.

The Core Principles posit a three-fold role for central banks. First, there should be a clear articulation of the objectives of the payment and settlement systems put in place. Second, the central bank should oversee compliance with the Core Principles, either directly (if it is also the provider) or by oversight (in case it does not operate the systems itself). Finally, central banks are required to co-operate with other central banks and designated authorities in ensuring the safety of payment and role for central banks settlement systems. In terms of the debate over the demarcation of the role of the central bank in terms of payment system provider and regulator, the Core Principles, therefore, do not mandate position. The paper on policy issues for central banks in retail payments issued by the Committee on Payment and Settlement Systems also does not take a stance in this regard. The public policy goals of central banks are relatively loosely defined to require them to put in place the necessary legal and regulatory framework and to “...foster competitive conditions wherever possible...”. In most cases, the roots of central bank involvement lie in the different institutional structures and traditions of each economy (Table 2).

Table 2: Central Bank Settlement and Clearing Services for Retail Payment Systems

Country	Systems based on central bank settlement services			Systems not using central bank settlement services
	Name	Settlement Basis	Does central bank provide clearing services?	
France	SIT	Net	No	International debit and credit card systems
Germany	RPS	Net	Yes	In part, <i>giro</i> networks and credit card payments
	Bilateral inter-bank clearing	Net	No	
UK	BACS	Net	No	Credit & debit card systems
	C&CCC	Net	No	
	LINK	Net	No	
USA	Federal Reserve ACH	Net	Yes	In some instances, credit card networks, ATM networks and multilateral cheque clearing arrangements
	Private retail systems using Federal Reserve settlement services	Net	No	
	Bilateral clearing	Net	No	

Source: Committee on Payment Systems, March 2003.

The Reserve Bank, like many central banks in emerging market economies, has taken the initiative of payments reforms in both the operational and supervisory capacities, having inherited the functions of the clearing houses set up at the turn of the 20th century, on its foundation. The need for payments reform was, in fact, underscored by the Chakravarty Committee as early as the mid-1980s. The National Payments Council was constituted as the apex body to co-ordinate reforms in payment and settlement in May 1999. The Mission Statement of the Reserve Bank's Payment Vision Statement emphasises the need to establish a modern, robust, efficient, secure,

and integrated payment and settlement system for the country. This essentially involves a three-pronged strategy of i) developing an institutional framework to oversee the payments systems, ii) operationalising information technology applications and iii) instituting satellite-based and terrestrial-based communications infrastructure and providing for adequate bandwidth. In this context, three critical issues arise.

The first issue is the precise role of the Reserve Bank. The Advisory Group on the Payment and Settlement System (Chairman: Shri M.G. Bhide) recommended that though the RBI should gradually come out of its role as a payment system provider except for settlement of funds after drawing lessons from a cross-country survey on payment system objectives, their management and the relevant legal backing obtained in these countries to draw appropriate lessons from it. A movement towards the segregation of the operation and regulation of payment systems has already been set in motion. The MICR cheque clearing systems in centers other than the four major metropolitan centers are being entrusted to a suitable commercial bank. Similarly, the newly set-up Clearing Corporation of India would be responsible for the settlement in the securities and foreign exchange markets.

Secondly, there is no specific provision in the Reserve Bank of India Act, 1934 empowering it to supervise payment and settlement systems barring the preamble, which enjoins the operation of the currency and credit system to the national advantage. It is in this context that the Committee on Technology Upgradation in the Banking Sector (Chairman: Dr. A. Vasudevan) recommended that the Reserve Bank Act should be amended to accord it regulatory and supervisory powers on payment

and settlement systems. The Bhide Group recommended that Section 17 (6) of the RBI Act needs to be amended to empower RBI for establishment and regulation of multiple payment system.

A survey of international practices shows that while most central banks have statutory powers, some have explicit laws to provide the overall composite legal basis for such functions, while others have laws for specific activities (such as clearing). There is thus no set course to follow.

The Reserve Bank has prepared a draft Payment Systems Bill, relating to the four broad areas of payment systems regulation, regulatory powers to the Reserve Bank for regulation of payment systems, provision of legal basis for clearing services and for netting of clearing settlements and powers to frame regulations. The recent Committee on Payment Systems (Chairman: Dr. R.H. Patil) recommended that the Act should empower the Reserve Bank to regulate/supervise payment systems/services of entities which are not banks and financial institutions and such other entities which are not under the direct regulatory / supervisory purview of the Reserve Bank, cover electronic and other similar technology driven systems as well as paper based systems, provide a legal basis for payment, clearing, settlement, (netting and gross) and finality of the settlements arrived at and accounted for and chalk out a clear demarcation between the role of the Reserve Bank as operator and regulator of the Payment and Settlement Systems. In order to have focussed attention on the regulation of payment and settlement systems, it is recommended that a separate Board for Payment Systems (BPS) be constituted within the Reserve Bank, on the lines of Board for Financial Supervision (BFS), to provide directions to the operating wings of the Reserve Bank.

What are the implications of the payment and settlement system design for the conduct of monetary policy?

This question is even harder to answer because the relationship between payment systems and monetary policy is still evolving in even the most advanced economies. There are, again, two broad views. The first, somewhat cataclysmic view is that central bank money could eventually disappear once debit and credit cards substitute cash in transactions demand and settlements take place through private networks which do not need to take recourse to central bank systems (Friedman¹, 1999 and King² 1999). William MacDonough³ of the Federal Reserve Bank of New York points out that "...A few years ago I might have discounted the potential of these new networks but no longer...". The alternate view is that while the monetary base would certainly shrink, the demand for cash would diminish but survive and central banks could always insist on central bank clearing (Goodhart⁴, 2000; Freedman⁵, 2000 and Woodford⁶, 2000 and 2001). This would still allow the central banks to modulate the

¹ Friedman, Benjamin M (1999), *"The Future of Monetary Policy: The Central Bank as an Army with only a Signal Corps?"*, International Finance 2.

² King, Mervyn (1999), *"Challenges for Monetary Policy: New and Old"*, Bank of England Quarterly Bulletin, 39.

³ MacDonough, William (1998), "Managing Change in Payment Systems", paper presented in the Global Conference on *Managing Change in Payment Systems*, BIS.

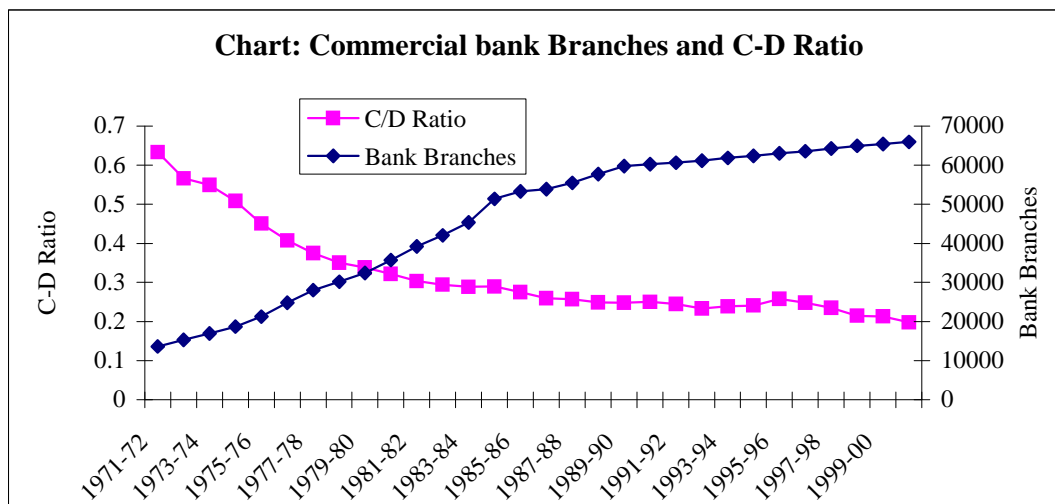
⁴ Goodhart, Charles A.E. (2000), *"Can Central Bank Survive The IT Revolution?"*, London School of Economics, June.

⁵ Freedman, Charles (2000), *Monetary Policy Implementation: Past, Present and Future - Will the Advent of Electronic Money Lead to the Demise of Central Banking?*, Bank of Canada, June.

⁶ Woodford, M (2000), *Monetary Policy In a World Without Money*, NBER Working Paper 7853.

-do- (2001), *"Monetary Policy in Information Economy"*, Symposium by the Federal Reserve Bank of Kansas City.

price and quantum of primary money to harness liquidity conditions in the financial market conditions to the macroeconomic objectives. An associated question in this regard is whether the persistence of the central bank monopoly over currency and related payment and settlement systems is economically efficient. The case for the central bank is, by and large,

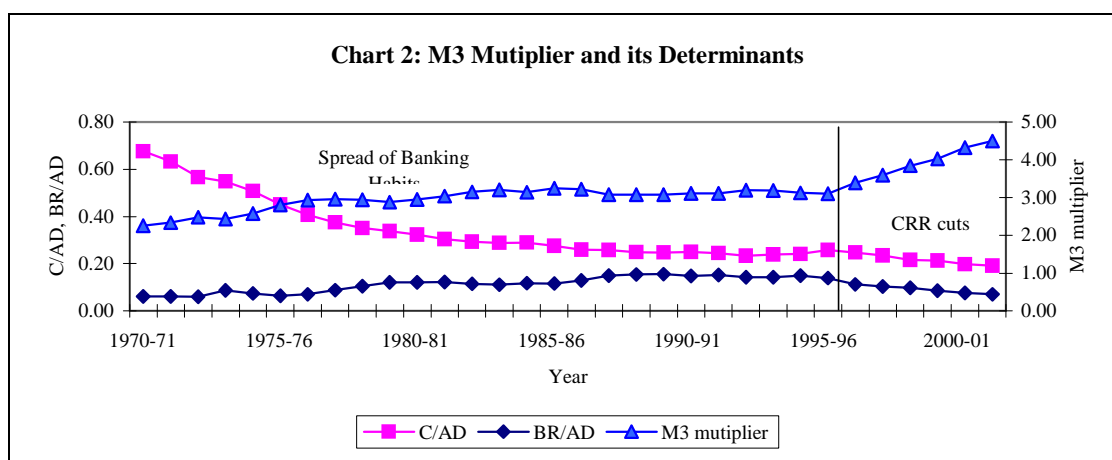


justified on the ground that the imperatives of macroeconomic stability in this case are more important than microeconomic efficiency.

In the Indian case, the ratio of share of cash in broad money has declined steadily with the spread of banking habits especially following the nationalisation of the banking system (Chart 1). The size of the Reserve Bank balance sheet, in relation to GDP, however, remained relatively high because of high reserve requirements and the growth in bank deposits as a result of the switchover to the banking channel. It is only in the late 1990s that the growth rate of the monetary base began to decelerate as the cash reserve ratio was reduced by almost 10 percentage points. The demand for

cash balances could, thus, shrink to the extent e-monetisation takes place in future in India, curtailing the monetary authority's balance sheet, reducing seignorage revenues and limiting open market operations. This also means that a rupee of reserve money has an increasingly larger monetary impact than before, as the money multiplier floats up (Chart 3). It is in this context that the RBI's Report on Currency and Finance 2001-02 pointed out that the monetary policy transmission mechanism in the future would have to grapple with the ongoing revolution in the payment and settlement system.

At the same time, since currency still remains an important part of transactions demand and reserve requirements, even at 4.75 per cent of net demand and time liabilities of commercial banks, remain relatively high in comparison to international standards, the size of the Reserve Bank balance sheet remains sufficiently large for monetary policy operations. In this connection, the recent Working Group on Electronic Money (Chairman: Shri Zahir Cama) recommends that multi-purpose e-money may be permitted to be issued only against



payment of full value of central bank money or against credit only by the banks. The issuance of e-money on credit basis should, however, be strictly regulated and closely

monitored. While the possibility of entities other than the central bank issuing independent media of exchanges was apparently remote in India at this point of time, the Reserve Bank needed to continually keep track these developments for preserving integrity of the financial market. It is nevertheless to pertinent to ask two final questions at this stage:

- Would the e-monetisation of the economy call for a redefinition of monetary and financial aggregates?
- Would the present change in payment and settlement systems require changes in the operating procedures of monetary policy?

The Working Group on Money Supply (1998), which went into the first issue, reported that as long as the transactions took place through the banking channel – for example, a credit card payment is essentially a loan from a bank – the spread of e-monetisation would not call for a redefinition of monetary aggregates.

As regards the second question, the demand for liquidity in a gross settlement system is obviously higher since each transaction is settled independently. For example, suppose a debit to a bank account cannot be settled for the want of balances in account, because it awaits a credit, which is later in the queue. In order to resolve this type of gridlock, it is necessary to ensure sufficient availability of intra-day liquidity facilities from the Reserve Bank. The present plan is to ensure this through a collateralised repo basis keeping in view the resultant liquidity conditions and the overall economic impact.

