
Financial Innovation and Deregulation in Perspective

JAMES TOBIN*

*Keynote Paper Presented at
The Second International Conference of
The Institute for Monetary and Economic Studies
Bank of Japan
Tokyo, May 29-31, 1985*

Deregulation of financial industries is popular these days for the same reasons that recommend it elsewhere, the perceived gains in microeconomic efficiency from unfettered competition. However, banks and other depository institutions are not just like other industries. They supply the exchange media used in the bulk of transactions in the economy. They are the institutions through which central bank operations of monetary control are transmitted to the economy at large. We need to consider how much regulation and what kind of regulation are needed to protect and foster the payments system and to maintain the effectiveness of monetary control.

These questions arise at a time when technological and institutional innovations are changing costs, opportunities, and competitive relations in financial industries. Some of the regulations of the past are being abandoned simply because they are no longer enforceable, or because they stand in the way of new opportunities of obvious

* Sterling Professor of Economics, Yale University, Professor of Economics, University of California, Berkeley, and Honorary Adviser of The Institute for Monetary and Economic Studies, Bank of Japan.

merit.

The important trends are these:

- 1) Transactions, whether for financial assets or for commodities, are less and less expensive of time and resources. Electronic payments networks are making possible instantaneous payments via computer from one account to another.
- 2) The issuance of obligations payable on demand and transferable to third parties by check or wire is not confined to commercial banks and other depository institutions regulated by government.
- 3) Legal ceilings on interest rates payable on deposits are vanishing.
- 4) Financial supermarkets and conglomerates are blurring or erasing distinctions between banks, other depositories, mutual funds, brokers, insurance companies, investment bankers, securities dealers, and other financial agencies.

I. The Future Trade-offs: Preview of this Paper

In this industry the benefits of competition sought by deregulation are (a) provision to the public of the services of a payments system, financial intermediation, and market access at low private and social cost, and (b) availability of products that meet the diverse tastes, needs, and circumstances of lenders and borrowers. With respect to the second goal, the menu of assets and liabilities available should in particular accommodate different attitudes towards risk, allocate unavoidable social risks efficiently, and avoid adding avoidable risks. Here, as in other industries, product variety is desirable, but trivial differentiation of standard products is costly and wasteful. As the volume of financial advertising indicates, Chamberlinian "wastes of monopolistic competition" are endemic to financial industries, where product differentiation is very inexpensive.

The use of a common monetary unit of account and the adoption of generally acceptable media of exchange in this numeraire carry important positive externalities. Free market competition by itself cannot achieve and protect these social benefits. The advantages of competition and deregulation must be sought in ways that do not impair the payments system or subject it to interruptions and breakdowns. The regulations we have, however misguided or obsolete many of them may be, were imposed for good reasons born of bad experience. It does not make sense to ignore the lessons of the past and to have to relearn them the hard way.

The basic dilemma is this: Our monetary and banking institutions have evolved in a way that entangles competition among financial intermediary firms with the provision of transactions media. The entanglement is the source of risks of default and breakdown. Protection against those risks has brought the government interventions now seen to have inefficient by-products: bureaucratic surveillance, deposit

insurance, lender-of-last-resort guarantees by central banks. There is no possible complete resolution of this dilemma, but we may hope to limit its scope.

My suggestions will be these: Create several categories of intermediaries' deposit liabilities backed by specific earmarked assets. One or more of these would be payable on demand and transferable to third parties on order. Others might be savings and time deposits particularly designed for small and unsophisticated savers. The purpose is to immunize these liabilities from risks of default due to other activities of the issuing financial firms. The segregation and earmarking would make it unnecessary to safeguard these liabilities by deposit insurance. Deposit insurance would be limited to certain other liabilities, and would be limited to small amounts per depositor. Other liabilities issued in market competition among intermediaries would not be insured, and would be subject only to the general regulations governing securities markets. In that realm *caveat emptor* would rule, firms would be allowed to fail, and their creditors would be allowed to suffer from defaults.

II. The Mirage of Private Money

Contemporary literature applying general free market principles to monetary theory suggests that competitive private enterprise could supply the economy's "money". I must say that I was not surprised by this development. I had wondered about the marriage of monetarism and "invisible hand" doctrine, and I had figured that some day the exception which assigns government the responsibility to limit the supply of money would be challenged. I doubt that my fellow keynoter is any happier about the challenge than I am.

Currency is the physical embodiment of the monetary unit of account defined by the sovereign. Currency is the sure and perfectly liquid store of value in units of account. It is legal tender, for the payment of taxes and for the discharge of private obligations enforceable in courts of law for payments in units of account. Consequently it is generally acceptable in payments.

I find it difficult to imagine a system in which there is no governmentally issued store of value in the unit of account. Some discussions of "private money" in the literature seem to suggest that the government can define the "dollar" as the unit of account without printing and issuing any dollars. Private agents could issue promises to pay dollars, and these would circulate. But what are they promising to pay? Of course, if the government sanctified the issues of a particular bank or private firm or individual by agreeing to accept them in payment of taxes and by granting them legal tender status, those issues would be currency. The sovereign would be delegating its *fiat* to the favored private institution. History suggests that such an institution would eventually be nationalized and made politically responsible, like the Bank of Eng-

land. The idea of a disembodied fiat unit of account, with embodiments of it freely and competitively supplied by private agents, seems to me to be a fairy tale.

Private monetary issue makes more sense for commodity money. The government can define a dollar in terms of gold or silver, or plywood or wheat, or some combination of goods. The commodity itself can circulate, especially if coinage by the state or by any other credible government or agency puts it in a form of readily ascertainable weight and quality.

Experience suggests that societies will also find it convenient to handle transactions with promises to pay the numeraire commodity. Whose promises? Just those of competing private agents? Of unregulated private agents? Once again, the government cannot escape the question what IOUs it will accept from citizens in payment of taxes and other obligations, or avoid deciding whose IOUs will be regarded as discharging private debts. Neither can the government take a *laissez faire* attitude toward the ability of private issuers of such IOUs to redeem their promises, especially if the government gives them the cachets of acceptability and legal tender.

Free market enthusiasts may say that the judgments of private agents will price, i.e. discount, issuers' IOUs in proper relationship to their quality and their backing. Rational market pricing may not be feasible, even conceptually, because self-fulfilling prophecies are involved. Reserve ratios that suffice when there is "confidence" will not avail when there is not. In any case, a payments system, like any other communications network, derives efficiency from universality, standardization, and predictability. It is not efficient to have competing currencies with varying rates of exchange between them.

Some writers have envisaged commodity moneys without stocks of the commodities held to back the currenties, whether private or governmental. They appeal to an analogy of the unit of account to a unit of measurement: as a yard is the length of a certain stick at the Bureau of Standards, so the dollar was by definition a certain weight of gold or silver or both. It could be similarly defined in commodities again. It is not a good analogy. Those agents, private or public, who promise to pay on demand "dollars" so defined must have stocks on hand to enable them to fulfill their promises. That is the only way to assure the defined equivalence.

I conclude that there must be store-of-value embodiments of a monetary unit of account, and that basically these will be and should be designated and supplied by the central government. Once this is done, private initiatives will generate all kinds of promises to pay basic currency, on demand and at future dates. The question is how much and how those initiatives should be regulated by the state. I have an uneasy suspicion that in the general enthusiasm for deregulation we are in danger of re-establishing the conditions and problems which generated financial regulations in the first place.

III. Bank Deposits as Inside Money

Paper currency and coin are not very convenient media of exchange, except for small items of consumption, vending machines, and certain transactions among total strangers. Where they are useful in large payments, it is for discreditable reasons, tax avoidance or crime. Currency is too bulky for large legitimate transactions, awkward because it comes only in a few denominations, vulnerable to loss or theft, unsuitable for remittance by mail. It is in fact used for a very small fraction of transactions weighted by value. This is true whether currency and coin are fiat money or governmental promises to pay on demand commodities in which the monetary unit is defined.

Some writers complain of the government's monopoly in currency supply. Whatever inefficiencies there may be in payments systems, they surely would be mitigated very little by allowing private issue of currency and coin. Maybe some banks would put out notes in more, and more convenient, denominations that the government does. Against that gain would be the difficulty of handling and sorting different kinds of notes and coins.

Demand deposits, bank's promises to pay currency on demand or on order to third parties, are more convenient than currency itself. Historically commercial banks exploited this opportunity to obtain funds to meet business borrowers' demands for commercial loans. The banks' incentive was the interest gap between deposits, which were competing with zero-interest currency, and loans. Many of the deposits come from the same businesses to whom the banks on occasion lend. Commercial banks serve as intermediaries for businesses with temporary surpluses, seasonal or cyclical, to lend to businesses with temporary deficits. The lending depositors and borrowers change roles frequently. Commercial banks administer this circulation of deposits credit. In addition, they transfer some saving — not very much in the United States — from household depositors to the business and public sectors.

Obtaining loanable funds via demand deposits, banks borrow very short to lend longer, and borrow liquid to lend illiquid. The risks in such intermediation do not fall solely on the managers and shareholders of the banks; their leverage is immense. Even if bank managers act with normal perspicacity in the interests of their stockholders, even if all temptations of personal gain are resisted, sheer chance will bring some failures — insolvency because of borrowers' defaults or other capital losses on assets, or inability to meet withdrawals of deposits even though the bank would be solvent if assets' present values could be immediately realized. The probability is multiplied by the essential instability of depositor confidence. News of withdrawals triggers more withdrawals, *saive qui peut*, at the same bank, or by contagion at others. For these reasons the banking business has not been left to free market competition but has been significantly regulated:

1) Minimum reserves of currency or other liquid assets held against deposits have been legally specified. The original purpose was to protect depositors, in particular to prevent imprudent erosion of reserve ratios by competition among banks. Paradoxically, once fractional reserves are required, they are not available to be paid out on depositors' demand. Required reserves have turned into an instrument of central bank monetary control.

2) The function of protecting banks and depositors against illiquidity falls to the central bank as "lender of last resort". By lending \$7 billion to one troubled bank, Continental Illinois, the Federal Reserve showed how seriously it takes this responsibility. To put this number in perspective, recall that normal lending by the Fed to the whole banking system rarely exceeds \$1 billion. Thus the "lender of last resort" function can seriously distort the customary use of central bank instruments for purposes of monetary control. In the instance cited, the Fed offset its extra lending by open market sales of similar magnitude. They offset it arithmetically; whether the net effect was economically neutral depended also on the psychologies of banks and public, difficult even for central bankers to assess.

3) Regulations govern the capitalizations, accounting, asset portfolios, types of liabilities, deposit interest rates, ownership, and other business activities and interests of banking firms. They are enforced by periodic reports, inspections, and audits. New firms can enter the industry only with government charters. It is mainly these regulations that critics advocate relaxing or repealing in the name of competition and efficiency.

4) Governmental deposit insurance has been by far the most effective measure to prevent bank failures. In the U.S. it virtually eliminated the unstable run, the contagious panic. However, it has not been altogether successful, especially during recent years of heightened competition, international in scope, among banks and other financial enterprises. These years were also characterized by severe gyrations of economic activity, prices, interest rates, and foreign exchange rates. The United States authorities found it necessary to extend the insurance guarantees to all deposits of large banks, even though the statutory protection covered only the first \$100,000 of each account.

Deposit insurance, like other regulations, has been criticized on grounds of efficiency. It diminishes the incentives of the insured institutions themselves to assess and limit risks, throwing more of a burden on bureaucratic surveillance by regulators, reinforced by the insurance agency itself. It also diminishes whatever incentive depositors themselves might have for assessing the riskiness of banks where they might deposit funds. Deposit insurance, moreover, is a massive extension and delegation of the government's monetary fiat — a blank check, so to speak, which might be an enormous obligation in certain contingencies. The federal deposit insurance agencies have reserves less than 1% of the deposits they have guaranteed. Any big bank

failure would wipe them out and require Congress to appropriate additional funds.

It is important to provide economic agents a convenient substitute for currency, usable in payments and riskless as a store of value in the unit of account. It is important to protect the society's payments system from interruptions and breakdowns due to bank failures. The problem is that this provision and this protection cannot be accomplished by unregulated competition for checkable demand deposits and loans. Bank deposits are *inside* money, which has the macroeconomic advantage that no net national saving is tied up in its accumulation. However, the accident of history that made the principal medium of exchange inside money also made it vulnerable to events that impair the value and liquidity of the assets backing the money. Striking a balance between competitive efficiency and the protection of depositors seems to be increasingly difficult and costly. That is why some other ways of meeting the problem deserve consideration.

IV. Deposited Currency

Perhaps we need means of payment like currency but without its disadvantages. *Deposited currency* — 100%-reserve deposits — payable in notes or coin on demand, transferable by order to third parties, secure against loss or theft, would be a perfect store of value in the unit of account. One way to provide it would be to allow individuals to hold deposit accounts in the central bank, or in branches of it established for the purpose and perhaps located in post offices.

A more likely alternative, given current sentiment for privatization is this: Any bank or depository institution entitled to hold deposits in the central bank could offer deposited-currency accounts to customers. One question, of course, would be how to pay the costs of managing such accounts. The government could subsidize them by paying some interest on the 100%-reserves. The argument would be that the payments system is a public good which taxpayers at large should provide. Or user charges could be levied; after all, individuals bear most of the costs of the use of ordinary currency in transactions and can afford to pay something for the greater convenience of checkable deposits.

It might be argued that no interest should be paid on these deposits, just as none is paid on ordinary currency. Banks and other depositories could compete for these deposits in terms of their charges and services. On the other hand, the government could pay the banks a low interest rate, indexed perhaps to the Treasury bill rate. The banks could then compete for the business in interest payable to depositors as well as in services and service charges. Since interest-bearing deposits would be more popular, the Treasury might save taxpayers money by making them possible. In any case, no institution would be licensed to retail currency in deposit form without

meeting certain standards of service and convenience, and without participation in a common national clearing network.

V. Banks and Segregated Funds

Present deposit insurance in the U.S. protects not only means-of-payment deposits but all other deposits in eligible institutions, including non-checkable savings accounts and time deposits. Similar obligations of mutual funds and other debtors not covered by deposit insurance are not guaranteed. It is not clear why all kinds of liabilities of covered institutions should be insured, except that the assets are so commingled that withdrawals of non-insured deposit liabilities would imperil the insured deposits. That indeed is why the insurance guarantee was *de facto* extended beyond the statutory limit.

This problem could be avoided by segregating and earmarking assets corresponding to particular classes of liabilities, permitting a depositor in effect to purchase a fund which could not be impaired by difficulties elsewhere in the institution's balance sheet. In this way, a bank would become more like a company offering a variety of mutual funds, just as those companies — which are not insured — are becoming more like banks.

The 100%-reserve deposit proposed above would be one such fund, but there could be others. For example, many households of modest means and little financial sophistication want savings accounts that are safe stores of value in the unit of account. These can be provided in various maturities without risk by a fund invested in Treasury securities. They can be provided as demand obligations either by letting their redemption value fluctuate with net asset value or by crediting a floating interest rate to a fixed value.

These options need not displace, but could supplement, standard insured savings deposits and time certificates. The total amount of these, wherever deposited, insured to a particular person (identified by social security or tax identification number) would be strictly limited to the \$100,000 in current legislation.

Perhaps an even more important addition to the menu of assets, especially for small and unsophisticated savers, would be savings accounts or certificates indexed to cost of living. The index should be purged of terms-of-trade effects and indirect taxes, contingencies against which the nation as a whole cannot be insured. (This reform in the index should apply to all public or publicly sanctioned indexations, including those in collective bargaining contracts protected by statute.) To enable financial intermediaries to offer indexed liabilities in safe, convenient and flexible form, the government would have to issue some indexed securities.

The advantage of the "segregated funds" approach is to limit the scope of inter-

mediaries' liabilities that need to be protected by deposit insurance, and by the same token the scope of intermediaries' assets that need to be continuously scrutinized and regulated. If there were a clear and clean line between the two kinds of intermediary activity, *caveat emptor* could apply to the uninsured and less regulated business, where banks and depository institutions would be vigorously competing with each other and with other market participants. If some of them fail from time to time in the process, that would not impair the value or even the liquidity of the segregated funds they were administering. We could expect the business of managing liabilities, certificates of deposit and the like, and seeking profitable lending opportunities to continue to occupy the managerial and entrepreneurial skills of banks and other financial firms. But we would not have to undergo a monetary crisis every time big depositors become suspicious of a large bank, or save either those depositors or the bank from the consequences of mistakes or misfortunes.

VI. New Transactions Technology and Monetary Policy

Withdrawals and payments to third parties can easily be made from any demand account, and there is no good reason to restrict this convenience. Some demand accounts will be *deposited currency* or other segregated funds. Some will not be. Of these, some will be insured and others not. Some will have fixed unit-of-account values; others will not. In the brave new world of electronic payments, all can be linked in a computerized payments network.

On the initiative of the payer, payments will be made at time of purchase or settlement, or scheduled to be executed at a designated future time. They will be made from stations connected to banks and to the central bank, located at banks themselves but also in stores, offices, and homes. I suppose plastic cards will be used, as at interactive teller stations today. When the payment is executed, the accounts of payer and payee at their banks or other intermediaries will be debited and credited, and so will their banks' accounts at the central bank. There will be no float, either for depositors or for banks, and no opportunities for adventurous check-kiting cash management as recently practiced by E. F. Hutton. The immense volume of socially wasteful transactions in the United States now induced by efforts to profit from float would be eliminated. The new technology permits a greatly accelerated version of the European giro system, a more efficient flow of information than the check system.

In this payments system, it will be natural and almost inevitable that banks allow overdrafts up to established credit lines like those now defined by bank credit cards. Extensive use of overdrafts may be the principal monetary innovation of the new system for the United States. A transaction will be completed if and only if it would not result in an overdrawn balance beyond the pre-arranged limit. Likewise the

central bank, on whose computerized "books" the clearings between banks and other institutions take place, would need some tough rules about overdrafts, including those that arise and are supposedly reversed during one business day.

The likely extensive use of overdrafts would make it necessary to revise the present base for calculation of bank reserve requirements. Evidently it will not be practical to stick solely to reserve requirements against liabilities. If *deposited currency* accounts are set up, there would be of course 100%-reserve requirements against them. But other types of deposits will also be transferable through the network, and overdrafts will be allowed in those accounts. I propose gearing reserve requirements to the corresponding bank assets, including overdraft advances. Assets covered by capital liabilities would be exempt from required reserves, as would be assets covered by liabilities which are neither insured nor eligible for transfer through the network. Any financial institution or firm which wants to use the network for transfer of ownership of its liabilities or equities would have to become a "bank" subject to reserve tests and associated regulations.

The central bank will still have effective monetary control in the new system. In the United States, and in many other monetary systems, the fulcrum of monetary control is the reserve test. Monetary control via reserve tests is effective if and only if the government, via the central bank, monopolizes and controls the aggregate supply of eligible reserve assets, the monetary base. This the central bank does by open market operations and by setting the rates and other terms on which it will lend reserves to the banks. I am assuming also, of course, that the "banks" subject to reserve tests are in aggregate weighty enough participants in financial and capital markets so that central bank operations affect the quantities, prices, and interest rates determined in those markets.

So far as I can see, nothing in the system of the future that I have sketched vitiates the conditions for effective control via reserve tests. Monetary aggregates will not be very interesting statistics, for the same reasons that deposits will not be entirely suitable as the base for reserve requirements. They will not be useful targets either. But variation of the Fed's instruments, open market operations and discount rates, will still affect the monetary base and will be transmitted to macroeconomic variables of importance.

VII. Interest-bearing Money

Payment of market-determined interest rates on deposits, as I have argued elsewhere, diminishes the sensitivity of demand for money to the level of nominal market rates. In old-fashioned textbook terms, it makes the "LM" curve steeper. If the rates the central bank charges on its loans and pays on reserves deposited with it

are also indexed to market rates, the "money multiplier" too is made less sensitive to interest rates. Consequently, variations of central bank instruments will have bigger effects on national income than in previous regimes where these nominal interest rates are fixed by legislation or administrative decision. So will shocks in the demands for deposits by the public and for reserves by banks. I think, moreover, that those demands will be more volatile in the new regime; when there is little to gain from sharp-pencil cash management, people will accept without prompt correction large swings in their cash balances.

The lesson I draw for the conduct of monetary policy is that it should be more accommodative in the new regime; that is, the supply of reserves should be more responsive to interest rates. Thus accommodation by the central bank would replace the accommodation now built in to the system by the control of deposit interest rates and of rates on reserves and central bank lending. This replacement is appropriate for macroeconomic reasons, while the abandonment of the interest rate controls is justified on grounds of microeconomic efficiency.

The subject of this Second International Conference is timely and important. It invites pragmatic and ingenious economic architecture. The well-rehearsed differences of view about macroeconomic theory and monetary policy probably do not apply to the problems of concern to us at this meeting. I have set forth some preliminary thoughts, and I expect to learn a great deal from the papers and discussions to follow.