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Bank Regulation and the Effectiveness of Open Market Operations

IN THIS PAPER I am occupied with whether recent changes in U.S. bank regulatory policy have made the Federal Reserve less effective as a central bank than it was. In passing, I am also occupied with how U.S. regulatory policy may change over the years immediately ahead and with whether, depending on how the policy changes, the Federal Reserve is going to end up less effective than it is at present.

For me, *effective* has a very narrow meaning: the Federal Reserve is effective to the extent that, by means of (domestic) open market operations, it can in some appropriate sense control the nominal gross national product of the United States. Instead of nominal GNP, I might, of course, have chosen real GNP as the Federal Reserve's target variable or, alternatively, the average of prices of all goods and services currently produced by resident companies. Most would agree, however, that nominal GNP responds, if perhaps with a lag, even to a fully anticipated change in the Federal Reserve's portfolio of Treasury securities or, in other words, to a fully anticipated official open market operation. And by choosing nominal GNP, I avoid the question of how its components, real GNP and the GNP deflator, respond to anticipated and unanticipated changes in the Federal Reserve's portfolio of Treasury securities.

The Federal Reserve is not limited to engaging in open market operations. It can try to influence U.S. nominal GNP by, for example,

I am obliged to members of the Brookings Panel for helpful comments and to so many other colleagues, near and distant, that I cannot list all of them. Several must, however, be singled out: Carter H. Golembe, Robert Litterman, and Neil Wallace.

changing discount rates or the required reserves ratio. We can also imagine it engaging in "open mouth" operations or, as in 1966, attempting by threat to persuade banks to do this or that. It seems to me, though, that most Federal Reserve officials and knowledgeable outsiders believe that nominal GNP should be controlled by official open market operations. That is why I define *effective* as I do.

There is another definition to be highlighted. In part because regulatory policy has been changed, differences in classes of U.S. financial intermediaries are not nearly as pronounced as they were. It is now at best extremely difficult to distinguish between the commercial banks and savings and loan associations (S&Ls) doing business in the United States, except by appeal to niceties of law that as a practical matter mean precious little. I thus think of the U.S. banking industry as being made up of all of the federally and state-chartered S&Ls (and for what little they add, the savings banks) in the United States, federally and state-chartered U.S. commercial banks, and U.S.-based commercial banking subsidiaries of foreign banking organizations. Although on occasion it will be necessary to refer specifically to commercial banks or to S&Ls, I mean both when I use the word *banks* without qualification.

In the section of the paper that follows immediately, I consider whether government regulation of banks is necessary for an effective central bank. Thereafter I review relevant recent changes in U.S. bank regulatory policy and go into whether those changes have made the Federal Reserve any less effective than it was. To conclude, I speculate about U.S. regulatory policy of the years immediately ahead and about whether the most likely changes in policy will make the Federal Reserve less effective than it is now.

In the first section of the paper I argue that there must be government regulation if the central bank is to be effective, able, that is, by means of open market operations to influence nominal GNP, and that the type of government-imposed restriction required depends on the payments technology being used.¹ That proposition is to be read as a warning, at

1. As may be apparent, the phrase "by means of open market operations" is important. Since other ways of influencing nominal GNP may exist, there is no implication that government-imposed restrictions are in general necessary. Indeed, Hall has proposed paying interest on required reserves and using the rate paid to influence nominal GNP. See Robert E. Hall, "Optimal Fiduciary Monetary Systems," *Journal of Monetary Economics*, vol. 12 (July 1983), pp. 33–50. But it is no part of my purpose to decide how best to control nominal GNP.

least by those who are ideologically disposed toward *laissez faire*. Under the *laissez faire* banking policy, nominal GNP is beyond the reach of the central bank that is limited to engaging in open market operations. To put the point another way, under the *laissez faire* policy any official open market operation is without effect.

In the second section I review and appraise recent relevant change in U.S. bank regulatory policy. And *relevant* is to be stressed because most of the changes in that policy have no bearing on the effectiveness of the Federal Reserve. Geographic restrictions come immediately to mind. They have been eased somewhat, but even if eliminated the Federal Reserve would not now be any more or less effective than it was. I therefore consider only those parts of policy governing bank interest payments to depositors and the activities in which banks (and bank holding companies) may engage. Going beyond bank regulatory policy, I also appraise the much-publicized emergence of the nonbank banks or, to use a phrase that anyone who still cares about our language should prefer, the loophole banks. I conclude that despite potentially significant changes in policy and the emergence of loophole banks, the Federal Reserve is in at least one sense not appreciably less effective than it was.

There is the possibility, though, of the Federal Reserve being unwilling to control nominal GNP. What if it is confronted by, for example, an incipient financial crisis? I am far from sure that the Federal Reserve, although a lender of last resort with responsibility for what happens to nominal GNP, can ever find itself torn. But if it can, then, as I argue in the last section of the paper, easing or eliminating government-imposed restrictions may make it less effective. In that connection, the important question is what Congress and the regulatory agencies do in the years ahead and, more specifically, how they manage the potential for riskiness in banking.

The Need for Government Regulation

In this section I argue that government regulation is necessary if a central bank is to be able to influence nominal GNP by exchanging bonds for currency or currency for bonds. (For now, that is what *effective* means: being able to influence nominal GNP.) I also argue that the type of government-imposed restriction required depends on the payments

technology being used. I do not really establish either proposition, since all I do is consider a few specific payments technologies. I am, however, seeking only plausibility. Moreover, the assumed payments technology of the first subsection would seem a good approximation of that being used currently in the United States. Its distinguishing characteristic is that, just as in the United States of the present, some purchases are made with currency.

THE SUPPLY OF CURRENCY

I find it convenient to define intermediation as making small-denomination claims out of large-denomination claims or as substituting small for large-denomination claims. To illustrate, a private-sector company buys a ninety-day bearer claim on the government, a claim with face or maturity value of \$10,000, and then sells 10,000 ninety-day bearer claims to the large-denomination government claim, each with a face value of \$1. Presently it will be necessary to go into what the buying and selling prices are. Here, though, it suffices to note that in doing what it was described as doing the private-sector company is not only intermediating but also supplying a tangible means of payment or currency, an alternative to the government-issued or official currency.

But if private-sector companies are free to intermediate or supply currency, then nothing of any consequence follows from an official open market operation.² The central bank is ineffective. The precise meaning of *free to intermediate* may be apparent: there is unimpeded (zero-cost) entry into and exit from the private-sector intermediation industry. For a central bank to be ineffective, it must also be assumed, though, that intermediation is a constant average-cost activity.³ And, further, the government's cost of intermediating must be identical to the private sector's cost. But that last assumption seems innocuous; even when there is great incentive, keeping a technology secret is near to impossible.

2. I borrow from Neil Wallace, "A Legal Restrictions Theory of the Demand for 'Money' and the Role of Monetary Policy," *Quarterly Review of the Federal Reserve Bank of Minneapolis*, vol. 7 (Winter 1983), pp. 1-7.

3. If $x > y$, then issuing x small-denomination claims, each with face value z/x , where z is the face value of the large-denomination claim, must cost more than issuing y small-denomination claims, each with face value z/y . The constant average cost is, however, for the issue of a given number of small-denomination claims, say n . So the assumption is that if issuing n claims against a large-denomination claim costs c dollars, then issuing $2n$ claims against two large-denomination claims costs $2c$ dollars.

We can suppose that any private-sector company engaged in intermediation sells its small-denomination claims, those with face value of \$1, for \$1 each.⁴ Because no interest is paid on official currency, it is therefore possible for those claims to be used along with the official currency in making purchases. The private-sector company does not, however, buy the large-denomination claim on the government for \$10,000. Rather, it pays something less, for its margin is the difference between the \$10,000 face value and the price paid. Free entry and exit tell us the equilibrium price and margin. In equilibrium the price is less than the \$10,000 face value by the cost of intermediation, that cost being defined as including a normal profit.⁵

There is a strong implication: with a private-sector intermediation industry characterized by unimpeded entry and exit, the nominal rate of interest on ninety-day large-denomination claims on the government cannot be just any number, large or small, depending, say, as Irving Fisher would have had us believe, on the expected rate of inflation. Independent of the expected rate of inflation, the nominal rate is equal to the cost of intermediating.⁶ It follows that a central bank purchase of a large-denomination ninety-day claim on the government, paid for with official currency, has no effects. For the purchase to have effects, the nominal interest rate on ninety-day claims on the government would have to change; being fixed by the cost of intermediating, it cannot.

Sketching the response of the private-sector intermediation industry to, for example, an official purchase of a ninety-day large-denomination claim on the government may help understanding. Imagine that with the purchase the nominal rate on ninety-day claims decreases, if only momentarily. With the decrease, no private-sector intermediary is earning the competitive rate of return, so there is incentive for exiting

4. The assumption, far from innocent, will be challenged. Note, though, that whatever the government may insist on, private-sector claims (currency) can in effect be used to pay taxes. Also, those claims can be regarded as perfectly safe or riskless. There is the possibility of fraud, but official currency can be counterfeited.

5. The difference between face or maturity value and the equilibrium purchase price is the quantity c in note 3.

6. That is true for any rate, not just the rate on ninety-day claims on the government. Seemingly, one gets a different ninety-day rate if large-denomination claims are, as it were, broken up by private-sector companies into claims with face values of \$10, not \$1. That, however, is not right. With private-sector intermediation, prices must reflect costs. What prevents that from being apparent is the practice of the Federal Reserve. Despite the difference in unit costs, it is willing to supply ten \$1 Federal Reserve Notes in exchange for one \$10 Federal Reserve Note.

the industry. With immediate exit a possibility, we might even suppose that the central bank purchases an exiting company's large-denomination claim and that the note-holders of that exiting company are paid off with the newly issued official currency. The private economy's portfolio is then exactly what it was, and the nominal rate on ninety-day government-issued claims of large denomination increases to what it was originally.

The argument just made also establishes that a central bank's open market sale of a government-issued claim of large denomination is without effects. Thus, with a payments technology involving the use of currency and a private-sector intermediation industry possessed of a constant average-cost production technology and without barriers to entry or exit, the central bank is ineffective, unable to influence nominal GNP.⁷

No one knows for sure how close intermediation is in reality to being a constant average-cost activity. Essentially constant average cost is, however, an appealing a priori assumption, perhaps the most appealing. And because Federal Reserve Notes are currently being used, it is therefore not implausible that a prohibition on private-sector intermediation is necessary for an effective Federal Reserve.

OTHER PAYMENTS TECHNOLOGIES

A prohibition on private-sector intermediation is not likely to be passively accepted. For any private-sector company, the appearance must be that there is considerable gain to be had from getting around the prohibition. (Remember that the effect of the prohibition is to free nominal interest rates from their cost-of-intermediation bound.) And if paying by check is not more costly than paying with currency, there is no need for private-sector intermediation. By providing third-party

7. It is possible to establish that proposition by a different argument, one much like that used to prove Modigliani-Miller irrelevance. See Neil Wallace, "A Modigliani-Miller Theorem for Open-Market Operations," *American Economic Review*, vol. 71 (June 1981), pp. 267-74. See also Christophe Chamley and Herakles Polemarchakis, "Assets, General Equilibrium and the Neutrality of Money," *Review of Economic Studies*, vol. 51 (January 1984), pp. 129-38. Chamley and Polemarchakis claim that only official purchases and sales of real capital are without effects. Supposedly, traditional official open market operations do matter. They are vague, though, as Wallace and other colleagues have pointed out in conversation, on how they get currency and bonds to coexist. And it is a reasonable conjecture that when they are explicit on coexistence, they will get the result obtained from the private-sector intermediation argument—that the claims the central bank buys or sells are irrelevant.

payments for customers, a private-sector company supplies all the small-denomination means of payment required. The incentive is therefore to make paying by check a better substitute for those purchases currently being made with currency. Perhaps we should not have been surprised by the introduction of credit cards; they allow users to write certified checks.

In the United States, private-sector intermediation has long been prohibited: under the National Currency Act of 1863, a 10 percent tax was imposed on private bank notes other than those issued by federally chartered commercial banks, and any statute that makes a particular activity unprofitable is de facto a prohibition.⁸ Also, a while after the note-issuing Federal Reserve System was established, the Treasury retired the last of its securities that under the National Currency Act (or the National Bank Act of 1864) could be used as backing for outstanding bank notes. If the argument of the previous section is right, we should then expect to see currency disappear, not necessarily from portfolios but as a means of payment. And we should want to consider whether, with a payments technology involving no use of currency, a government-imposed restriction is necessary for an effective central bank. To do so, we must assume that all purchases are made by check.⁹

Of course, there are checks and there are checks; there are the paper checks of the present, and there are the electronic checks that will come to dominate in a near or a far future. Over the past decade or so there has been much experimenting with point-of-sale terminals and in what has come to be called home banking. Indeed, two of the largest U.S. banks would almost certainly insist that they are not experimenting with, but are actually engaged in, home banking.¹⁰ A paper-free payments

8. As Arthur Rolnick has pointed out to me, the tax was repealed with the passage of the "deadwood bill," an appendage of the Tax Reform Act of 1976. Since January 1, 1977, the United States has thus been without the 10 percent tax on notes issued by, for example, state-chartered commercial banks. According to a Senate report on the Tax Reform Act of 1976, the Senate was advised by the Office of the Comptroller of the Currency that the tax was no longer needed. Evidently, there are various provisions of federal law under which issuing bank notes would be illegal. Unfortunately, none of those provisions are given in the Senate report. If we are lucky, we will one day find out whether counsel for the Office of the Comptroller of the Currency made a mistake.

9. For an excellent description of how payments might be made in an economy without currency (a tangible means of payment), see Eugene F. Fama, "Banking in the Theory of Finance," *Journal of Monetary Economics*, vol. 6 (January 1980), p. 42.

10. Bank of America and Chemical Bank. For a report on home banking, see "Home Banking: The Growing Infant," *American Banker*, July 23, 1984, p. 1.

technology involving the use of point-of-sale terminals and personal and super computers would thus seem right now to be technologically feasible. We sit waiting only for costs to decrease sufficiently. The price histories of various goods, pocket calculators included, provide considerable reassurance that somewhere along the way they will, but exactly when cannot be predicted with confidence.

Here, fortunately, it is of no consequence whether the checks used for payments are paper or electronic. The question is whether check-writing has become universal. Even if we assume (as above I indicated we must) that currency is not used in making purchases, it does not follow that currency, although dominated by check writing, is necessarily without value. The implication is rather that, independent of whether currency has value, a government-imposed restriction is necessary for an effective central bank.

The case of currency having no value is the easier to argue. Since an official open market operation involves exchanging currency (or, equivalently, transactions balances of banks or companies and individuals) for interest-bearing Treasury securities, such an operation must be without significant effects. Changing the supply of anything free can hardly have earth-shaking consequences.¹¹ Thus do we come to the need for a government-imposed restriction and, more particularly, a government-imposed demand for currency. A currency reserve requirement imposed by government must of necessity be binding; so, with such a requirement, currency has value and official open market operations have significant effects. Further, if considerations of equity and resource allocation are ignored, it does not matter on which companies or individuals the currency reserve requirement is imposed.¹²

Above, I suggested that even if currency is inferior to check writing for all purchases, it can still have value; that, I believe, is what economic theory tells us. If in every period there is net saving, then there must be a transfer of consumption from any one period to the next. The transfer is managed by the holding of assets, and, should there be some available, currency may be used. If it is, then it must be valuable; it must have a positive, although not necessarily constant, price. But if currency is being used to transfer consumption, then, again, the central bank is

11. Note the assumption that the central bank is the monopoly supplier of currency. With currency having no value, it is bound to be.

12. Fama considers a (paper) currency reserve requirement imposed on owners of space ships. See his "Banking in the Theory of Finance," p. 56.

ineffective.¹³ The nominal rate on currency is zero, and the nominal rates on all assets used to transfer consumption must, after risk adjustments, be identical; and as I argued earlier, with nominal rates on all assets other than currency being given by the nominal rate on currency, the central bank cannot be effective. Here, the explanation is that with nominal interest rates all being identical, the private sector does not care about the composition of its asset portfolio; and not caring, it passively accepts any change in composition, even one induced by an official open market operation.

If currency is being used as a means of payment or in making some kinds of purchases, then, as I noted previously, the effect of a prohibition on private-sector intermediation is to free nominal interest rates on other assets from the nominal interest rate on currency and, moreover, in freeing those rates, to make the central bank effective. If, on the other hand, currency is not being used as a means of payment but rather only to transfer consumption, then, as when it has no value, the analogue of the prohibition is a currency reserve requirement. With such a requirement, nominal rates on all other assets can, as it were, wander from the nominal rate on currency, and in consequence an official open market operation can influence nominal GNP.

I have argued that without government regulation, a central bank must be ineffective, unable to influence nominal GNP. If that is right, then obviously no one who counts on the Federal Reserve to influence nominal GNP (or any other aggregate) by means of open market operations should advocate the ultimate in deregulation.¹⁴

Deregulation and the Federal Reserve

I turn now to whether, with U.S. bank regulatory policy having changed, the Federal Reserve is less effective as a central bank than it

13. In discussing the case of valueless currency, I did not mention nominal interest rates. If what we mean by a nominal interest rate is (the usual simple transform of) the ratio of period $t + 1$ and period t currency prices, then, with valueless currency, all nominal rates are undefined. With valueless currency, a numeraire other than currency might well be used. Suppose it is gold. Then nominal rates on other assets are not tied in any simple way to the nominal rate on gold.

14. That I failed to consider a payments technology involving the use of currency for only a very few kinds of purchases may be held against me. My guess is that how many purchases are made per unit time with currency makes no difference. Either currency is used as a means of payment or it is not.

was. That being what is at issue, I must abandon the definition of *effective* I have been using. I begin in this section by appraising the claim that the Federal Reserve is more effective with than without restrictions on interest rates paid by banks. And in making my appraisal I use the definition of *effective* implicit in the arguments of those who have made that claim. I do not suggest a common definition. Implicit in nearly all if not all of the arguments, though, are definitions in which reduced-form multipliers appear: for example, that which tells us the effect of a *ceteris paribus* change in some market-determined interest rate on nominal GNP; or, to give another example, that which tells us the effect on nominal GNP of a *ceteris paribus* change in, say, total bank reserves. But given how I test the claim that (potentially) binding interest rate restrictions enhance the effectiveness of the Federal Reserve, it makes no difference which multiplier is used.

Using a reduced-form multiplier to measure the effectiveness of the Federal Reserve is, more likely than not, silly. To date no one has provided a compelling brief for the existence of a constraint on the rate of change of the Federal Reserve's portfolio of Treasury securities; and without a constraint, it is without significance that a multiplier gets larger or smaller. In fairness, I do have to add that zero is a very special multiplier value. But it is doubtful indeed that among those who would maintain restrictions on interest rates paid by banks there are any who believe such restrictions are necessary for an effective Federal Reserve. The point to be stressed, however, is that I cannot be blamed for a definition chosen by the advocates of bank interest rate restrictions or for using that definition, however silly, in appraising their claim.

Once having appraised the claim, I go on to what strikes me as an interesting possibility: that the Federal Reserve may not now be as free as previously it was to attend single-mindedly to controlling the target variable of choice (which here is nominal GNP) or that at some point in the future it may not be as free as it is at present. That is to say, being able in some sense to control a target variable such as nominal GNP may not suffice. To be effective, perhaps a central bank has to be not only able but also willing.

REGULATORY POLICY: INTEREST RATE RESTRICTIONS

Whether to have binding (Regulation Q-type) restrictions or limits on rates paid by commercial banks was debated during the 1960s, at least by Federal Reserve officials. There were some who favored forced

commercial bank disintermediation as the only way or, more reasonably, the quickest way of influencing the rate of inflation. They were not a majority. (In mid-1966 the Federal Reserve did change to a policy of forced disintermediation, but out of a narrow concern for S&Ls and, at one remove, the residential construction industry.) But their argument was in essence this: to spend, companies must borrow, and they borrow from banks; hence, if banks cannot lend, companies cannot spend, and aggregate demand is less than it otherwise would be. Companies must of course be interpreted as including households wanting to acquire residential housing; and banks must be interpreted as including S&Ls, which during the 1960s were important originators and holders of residential mortgage loans.

There is an obvious rejoinder to the argument just given, one that highlights its incompleteness: as financial intermediaries, banks are not necessary, only convenient; they can be bypassed, if at some cost. Or to put the rejoinder another way: if binding interest rate restrictions keep lenders from favoring banks, there is nothing, risk aside (for which they can be compensated), to prevent them from lending directly to companies wanting to borrow and spend.

It may be granted that when rate restrictions are for the first time made binding, some companies long accustomed to borrowing from banks will not find loans. Any company can be caught off guard. But more than once? Companies that have been surprised will make sure that they have borrowing alternatives. When rate restrictions are made binding a second time, the response will therefore not be what it was the first time.

Restrictions on rates paid by banks have for all practical purposes been eliminated. Now, however, we are hearing appeals, mostly from Wall Street—which must be more a state of mind than a place—to reimpose the restrictions.¹⁵ So we must look to history for what it reveals.

15. Among those who have urged the reimposition of restrictions on rates paid by banks, Wojnilower stands apart. He has made far and away the most forceful case for what he and others seek. See Albert M. Wojnilower, "Stabilize Banking: Restore Some Controls," *New York Times*, July 18, 1984, p. A23. Interestingly, though, he is also the one who has documented so well that "interruptions in the supply of (bank) credit" or "credit crunches" spawn financial innovations. See his "The Central Role of Credit Crunches in Recent Financial History," *BPEA*, 2:1980, pp. 278, 288–89. But that he can reasonably argue from history as he has and also urge the reimposition of interest rate restrictions on depository institutions is not at all clear. If financial market participants are as innovative as he has suggested, then to reimpose rate restrictions on depository institutions would be to regulate them out of existence.

The first task is to determine when, if ever, forced bank disintermediation was official policy. The second task, assuming there was a time when bank disintermediation was deliberately engineered, is to compare that time with its post–World War II complement in a search for a change in economic structure.

Dating Forced Intermediation. Authority to limit interest rates paid by Federal Reserve member banks was granted the Board of Governors of the Federal Reserve System (hereafter the Federal Reserve Board) in the Banking Act of 1933. And it wasted no time in the exercise of that authority; a maximum rate of 3 percent applicable to all types of savings and time deposits became effective on November 1, 1933. Authority to limit interest rates paid by insured nonmember commercial banks was granted the Federal Deposit Insurance Corporation (FDIC) in the establishing statute and put beyond challenge by the Banking Act of 1935. Shortly after the passage of that act, the Federal Reserve Board and the FDIC set maximum rates of 2.5 percent to be effective January 1, 1936. And, what seems most amazing now, those maximum rates were held unchanged until year-end 1956.

Not once in the twenty-one years from 1936 to 1956 did the 2.5 percent maximum rates limit the banks subject to them. Those banks experienced forced disintermediation for the first time in the fall of 1959, and then only briefly. In hindsight that disintermediation appears as an isolated instance. There could of course have been more instances, but in each of the years from 1962 to 1965 the Federal Reserve Board and the FDIC increased their maximum rates.

The increases of December 1965 had a most pronounced effect. During early 1966 insured commercial banks took advantage of them; able to raise rates actually paid, they took deposits from S&Ls, which were constrained not by maximum rates but by their portfolios of long-term fixed-rate assets. The transfer of deposits, effected with a seeming ease, badly frightened some regulatory agency officials and members of Congress, and as a result a new statute was enacted in September 1966 that among other things authorized the Federal Home Loan Bank Board to set maximum rates for insured S&Ls.¹⁶

16. In 1969, the authority of the Federal Home Loan Bank Board was broadened by making all S&Ls, the uninsured included, subject to its maximum rates. And uninsured commercial and savings banks were made subject to maximum rates established by the FDIC.

In passing its 1966 statute, Congress changed the purpose of maximum deposit rates and, by implication, the strategy for administering those rates. In 1933 it was widely believed that so-called excessive competition among commercial banks was in considerable part the cause of the financial crisis of 1930–33. And when the Federal Reserve Board and the FDIC were first granted authority to limit rates paid by insured commercial banks, the intent was to have those agencies limit such competition. When authority was granted the Federal Home Loan Bank Board, however, and an Interagency Coordinating Committee was established to maintain appropriate differences between the maximum rates for commercial banks and S&Ls, the intent was to protect S&Ls and thereby the residential construction industry. To prevent excessive competition (whatever that may be) among commercial banks, it suffices to keep maximum rates just above the actual average rates being paid by commercial banks. To protect S&Ls, however, it may be necessary to have binding maximum rates for commercial banks.

In sum, September 1966 appears to be a good choice for the start of the period when forced disintermediation was official policy. A slightly better choice, though, is July 1966. That is when the Federal Reserve Board and the FDIC anticipated Congress in its change of purpose: the two agencies decreased some maximum rates, thereby subjecting commercial banks to disintermediation presumably to keep them from offering depositors more than S&Ls could pay.

There are several possibilities for the date when forced disintermediation ceased to be official policy, and not one of them is plainly better than the others. The most obvious choice is October 1983, at the end of which maximum rates were for practical purposes eliminated. Between June 1970 and October 1983, though, banks, commercial banks especially, were granted more and more funding freedom. So when to end the period that interests us is, alas, a matter of judgment. A case can be made for December 1982. In November 1982 Congress created the Depository Institutions Deregulation Committee as the successor to the Interagency Coordinating Committee. With virtually no delay the new committee authorized a new liability for banks, the money market deposit account. In December 1982, it authorized another new liability, the Super NOW (negotiable order of withdrawal) account. And by its order there were to be no maximum rates for money market deposit and Super NOW accounts showing average balances of \$2,500 or more. By the end

of 1982, then, banks had become more than able to deal with money market mutual funds. That is apparent from the time series of the total assets of those funds.

There are other possible dates between June 1970 and December 1982: for example, May 1978, which is when the money market certificate was authorized. To be sure, the case for December 1982 is in a sense more persuasive. When the Depository Institutions Deregulation Committee authorized the money market deposit and Super NOW accounts, it did not tell banks to stop issuing money market certificates. At issue, however, is when banks were granted sufficient funding freedom, and my instinct is to say June 1970, at which time maximum rates for, or restrictions on, rates paid owners of large-denomination certificates of deposit with 30-day to 89-day maturities were suspended, never to be reimposed. My choice of ending date may seem eccentric, but recall that we are especially interested in the period when large commercial banks were being deliberately subjected to disintermediation.¹⁷

Testing for Structural Change. If it is right that the availability of credit, particularly from large commercial banks, matters greatly, then for the United States the post–World War II period cannot be of a piece. Banks operating in the United States were more limited by government-imposed interest rate restrictions during the subperiod July 1966–June 1970 than they were either before or after. That is especially true of the large commercial banks. And the economic relationships of that subperiod should differ from those of the surrounding subperiods.

To check on whether the economic relationships of the indicated subperiods do differ I tested for structural change using Litterman's procedure, the justification for which can be briefly stated.¹⁸ We know

17. Wojnilower has been represented by commentators as stressing the availability of credit. To illustrate, I quote from Benjamin Friedman's comments that appeared with Wojnilower's "The Central Role of Credit Crunches," p. 328: "[Wojnilower's] story of the business cycle peak . . . is one of availability effects rather than interest rate effects, and of the credit market rather than the money market." Friedman's synopsis is misleadingly incomplete. Wojnilower stresses not the availability of credit but the availability of commercial bank credit. Throughout his paper he is almost exclusively concerned with the supply of credit from large commercial banks.

18. Robert B. Litterman, "The Costs of Intermediate Targeting," Research Department Working Paper 254 (Federal Reserve Bank of Minneapolis, May 1984). The description of the test procedure given in appendix A below is a little more precise than that which follows here in the text. For a discussion of forecasting with vector autoregressions but estimated using a particular Bayesian method, a discussion which is nothing if not complete, see Thomas Doan, Robert Litterman, and Christopher Sims, "Forecasting and Conditional Projection Using Realistic Prior Distributions," *Econometric Reviews*, forthcoming.

that, with no structural change, adding observations must on average result in an improved forecast. So it is possible to test for structural change by comparing forecasts, one generated by more observations than the other. Suppose for the moment that there is only one variable. Think of $R(I)$ as being the variance of the forecast of the k th observation of the set of observations $S(I)$, where $k = 1, 2, \dots, s_1$ and where the forecast is generated by all of the observations, save for the k th, of $S(I)$. And think of $R(II)$ as being the variance of the forecast of the k th observation of $S(I)$, where the forecast is generated by all of the observations of the set $S(II)$, save for the k th observation of $S(I)$, a proper subset of $S(II)$. Then $R(II)/R(I)$ is a test statistic. The smaller is that ratio, the greater is the increase in forecast accuracy, and the less likely is it that there has been structural change or that the sets $S(I)$ and $S(II)$ come from different economic processes.

But determining only how forecasts compare, or what value of $R(II)/R(I)$ turns up, is not entirely satisfactory. Even with structural change, adding observations may (presumably as a very small probability event) increase forecast accuracy. Fortunately, the effect of adding observations can, so to say, be isolated by resort to samples of constructed observations. Whatever the representation of the economy being used, it is estimated, assuming no structural change, from $S(I)$ and $S(II)$, and residuals or errors are calculated. Then, by sampling from the errors, new sets of observations $S_1(I)$ and $S_1(II)$ are constructed, and the ratio $R_1(II)/R_1(I)$ is obtained. Repeated sampling gives $R_j(II)/R_j(I)$, where $j = 1, 2, \dots, s$, and $R(II)/R(I)$ is compared with them. An $R(II)/R(I)$ smaller than the smallest of the $R_j(II)/R_j(I)$ suggests structural change. Why else would there be so little increase in forecast accuracy? In contrast, an $R(II)/R(I)$ larger than a reasonable proportion of the $R_j(II)/R_j(I)$ suggests no structural change. Unfortunately, the implication of an $R(II)/R(I)$ larger than the largest of the $R_j(II)/R_j(I)$ is at this moment not entirely clear, and later on I come back to that difficulty.

In implementing the Litterman procedure, I used a thirteen-variable linear autoregressive representation of the U.S. economy and a method of estimation of Doan, Litterman, and Sims.¹⁹ The periods I used were, first, January 1952–June 1966 and July 1966–June 1970 and, second, July 1970–March 1984 and July 1966–June 1970.

Percentage improvements in forecasts (decreases in variance) that

19. Doan, Litterman, and Sims, "Forecasting and Conditional Projection."

Table 1. Results of a Test for Structural Change, January 1952–June 1966 and July 1966–June 1970

Percent

<i>Variable^a</i>	<i>Improvement in forecast^b</i>	<i>Measure of significance^c</i>
Real GNP	1.0	74.0
Purchases of consumer durables	1.6	4.0
Business fixed investment	1.4	100.0
Residential construction	3.5	100.0
Change in business inventories	1.6	96.0
Government expenditures	0.8	38.0
Government receipts	2.5	94.0
GNP deflator	0.0	20.0
Three-month Treasury bill rate	–2.1	76.0
S&P 500 index	0.7	86.0
Trade-weighted value of U.S. dollar	0.1	44.0
Money supply (M1)	–0.2	46.0
Total nonfinancial debt	2.5	98.0

a. The unit of time is the month. For the method of interpolation, see Thomas Doan, Robert Litterman, and Christopher Sims, "Forecasting and Conditional Projection Using Realistic Prior Distributions," *Econometric Reviews* (forthcoming).

b. Using actual observations.

c. The proportion of fifty simulations showing less improvement in forecasting than occurred when actual observations were used.

resulted from adding the observations of the period July 1966–June 1970 to those of the period January 1952–June 1966 are given for all of the thirteen variables in column one of table 1.²⁰ In that column there is a zero entry for the GNP deflator; and there are two entries perilously close to zero, that for the trade-weighted value of the dollar and that for M1, the traditionally defined money supply. Of the remaining ten entries, nine are positive. A conclusion of no crucial structural change is therefore reasonable.

Percentage improvements in forecasts that resulted from adding the observations of the period July 1966–June 1970 to those of the period July 1970–March 1984 are given in column one of table 2. Three of the entries are quite close to zero: those for the GNP deflator, the three-month Treasury bill rate, and the increment to total nonfinancial debt. Seven of the remaining ten entries are positive, and certainly that

20. What I report are the values of the $\{1 - [R_i(\text{II})/R_i(\text{I})]\}$ 100, where i is the index over variables.

Table 2. Results of a Test for Structural Change, July 1970–March 1984 and July 1966–June 1970^a

Percent

<i>Variable^a</i>	<i>Improvement in forecast</i>	<i>Measure of significance</i>
Real GNP	1.1	46.0
Purchases of consumer durables	1.3	84.0
Business fixed investment	2.9	100.0
Residential construction	1.6	100.0
Change in business inventories	1.0	70.0
Government expenditures	−2.7	6.0
Government receipts	−4.4	6.0
GNP deflator	0.2	18.0
Three-month Treasury bill rate	0.2	44.0
S&P 500 index	0.7	94.0
Trade-weighted value of U.S. dollar	−1.3	42.0
Money supply (M1)	1.9	12.0
Total nonfinancial debt	−0.3	42.0

a. See notes to table 1.

outcome is not strong evidence of structural change even though we know that there was some.²¹

The measure of significance that I used is the percentage of fifty samples of constructed observations that produced smaller increases in forecast accuracy than did the actual data. Those proportions obtained from the periods January 1952–June 1966 and July 1966–June 1970 are given in column two of table 1. Of the thirteen, one is close to zero, that for purchases of consumer durables. But that there are seven ranging from 20 percent to 86 percent is suggestive of no structural change. The problem is how to interpret the remaining five: the 100 percents for business fixed investment and residential construction; the 98 percent for total nonfinancial debt; the 96 percent for the change in business inventories; and if it is also judged as being too much like 100 percent, the 94 percent for government receipts. If the availability of credit at banks does matter greatly, it is perhaps a natural expectation that business fixed investment and residential construction, as well as pur-

21. It can perhaps be argued that since interest rate restrictions were eliminated during the period July 1970–October 1983, the evidence of no structural change casts doubt on the importance, except for banks, of those restrictions.

chases of consumer durables, should behave differently when interest rate restrictions are binding and when they are not. In fact, though, it is unclear how to interpret a 100 percent value or actual observations producing a larger increase in forecasting accuracy than any sample of constructed observations.²² What therefore seems reasonable is that column two of table 1 conveys no strong impression of structural change.

Nor is such an impression conveyed by column two of table 2, in which the proportions obtained from the periods July 1970–March 1984 and July 1966–June 1970 appear. Again, we see 100 percent for business fixed investment and for residential construction, and our suspicion about a change in economic structure deepens a little. If 94 percent is taken as being different from 100 percent, though, then nine of the thirteen entries of column two of table 2 are consistent with no such change.

It is thus not transparent that the period July 1966–June 1970, during which banks were most tightly bound by interest rate restrictions, is special in the relevant way. Economic structure may well have changed in, say, mid-1966. That is now a little less likely than it was, though, except to those who were long ago persuaded by the a priori argument that as intermediaries banks are convenient, not necessary. A dispute in economics differs from a courtroom battle; economists do not have a generally accepted rule on where the burden of proof lies. Still, it would seem that those who in effect argue that interest rate restrictions are the sine qua non of Federal Reserve control have an obligation to come up with evidence. Something more than historical narrative is required.

REGULATORY POLICY: PERMISSIBLE ACTIVITIES

There is more to be said about restrictions on interest rates paid by banks. Even if the supply of bank credit matters little, such restrictions may make for a more effective Federal Reserve. I put off making the argument, however, until after having considered restrictions on the

22. Very recently, Litterman told me that in just-completed experiments he found that the proportion of the $R_j(II)/R_j(I)$ less than $R(II)/R(I)$ can be sensitive to what the true β is assumed to be. Estimating with a looser prior (in the sense of Doan, Litterman, and Sims) he eliminated each 100 percent in column one of tables 1 and 2. That may seem like good news to those who were skeptical about the efficacy of interest rate restrictions. According to Litterman, though, we now have to wonder a little about his test procedure.

activities of banks and bank holding companies. In considering these restrictions, I get into bank risk and the effectiveness of the Federal Reserve, and the essence of the argument about interest rate restrictions, to be elaborated later on, is that they may limit the riskiness of banks.

Of late there have been many changes in the restrictions limiting banking organizations in their choices of activities. Two are, in a way, of special significance; they justify counting S&Ls as banks, which is what I have been doing all along. The first took place in 1980 when Congress, in passing the Depository Institutions Deregulation and Monetary Control Act, authorized S&Ls all over the country to offer NOW accounts. The second took place in 1982 when the Garn-St Germain Depository Institutions Act was passed, and S&Ls were authorized to make limited amounts of commercial loans. But there have been other changes, some made by federal and some made by state instrumentalities.

The Bank Holding Company Act of 1956 empowered the Federal Reserve Board to determine, although with statutory guidance, the activities in which regulated bank holding companies might and might not engage. Over the years, it has made more and more activities permissible and, as well, more and more activities impermissible. Those activities so far determined to be permissible or impermissible are listed in appendix B. Not that a bare-bones list of permissible activities is fully revealing; an activity can be deemed permissible but subject to restrictions. Still, using the appendix, sufficiently interested readers can form their own rough impressions of how far the Federal Reserve Board has come in creating a potential for risky bank holding companies and, should the fates of bank and nonbank affiliates be linked, risky commercial banks.

My impression is that few of the activities determined by the Federal Reserve Board to be permissible, whether for all regulated bank holding companies or only for those that have applied to do specific things, involve appreciable risk. To illustrate, making real estate appraisals does not involve such risk, nor does buying and selling equities for customers' accounts. Among regulated commercial bank holding companies, and commercial banks as well, the search has in recent years been for fee-generating activities requiring by the conventional wisdom relatively small amounts of capital. And if a relatively small amount of required capital can rightly be equated with slight risk, then the Federal Reserve Board has not been confronted with all that many troubling requests.

Obviously, running an S&L just rescued from failure may be a high-risk activity; so may dealing in precious metals or writing options. But, again, the appearance is not of a Federal Reserve Board having deliberately decided to let regulated commercial bank holding companies splash about in treacherous waters.

In early spring 1984 the FDIC put out for comment a regulation that, if adopted, will allow nonmember (commercial) banks to underwrite so-called investment-quality equities and bonds. The comment period ended at mid-year, though, and the new regulation is still to be adopted. We therefore have to wonder how serious the FDIC ever was, except about prodding an indecisive Congress. Whatever its inclination, the FDIC has been hardly more aggressive than the Federal Reserve Board. The same can be said of the Office of the Comptroller of the Currency. Indeed, if contrasted with state legislatures, all three agencies appear more as rabbits than lions.

The handiworks of three state legislatures make the point. A while back, the California legislature adopted an extremely permissive statute governing investments by state-chartered S&Ls and, more particularly, made it legal for those institutions to have equity participations in real estate developments. In early 1983 the South Dakota legislature authorized out-of-state bank holding companies acquiring state-chartered commercial banks to use their new affiliates to sell insurance nationwide. And finally there is the New York legislature, which in mid-1984 passed an Omnibus Banking Act. By that act, state-chartered banks will soon be able to, among other things, own and manage existing real estate and real estate developments and also make loans with equity kickers; and some will be able, subject to the prudent-man rule, to hold equities and fixed-income claims directly.

It is not, however, to be taken for granted that our bold state legislatures are leading the way to a bankers' paradise. The Federal Home Loan Bank Board has already altered very considerably the California statute authorizing equity participations in real estate developments for state-chartered S&Ls. With the adoption of the statute, the Bank Board was inundated with applications for insurance issued by the Federal Savings and Loan Insurance Corporation (FSLIC). Alarmed at the prospect of real estate developments being financed with federally guaranteed loans, it first delayed in processing the applications and then, getting more serious, announced new conditions for getting FSLIC

insurance that in effect undid much of what the California legislature had done. To be sure, the Bank Board may be sued, the charge being in effect a lack of respect for state legislatures and regulatory agencies;²³ until it has been, though, and successfully, the California legislature will not have gotten far.

As of year-end 1983 three regulated commercial bank holding companies—as it happens, three of the largest of those with U.S. headquarters—had applied to the Federal Reserve Board for permission to proceed with their acquisitions of state-chartered South Dakota commercial banks and their plans for becoming nationwide insurance companies. After what looks to the outsider as a farcical delay in accepting one of the applications, the Federal Reserve Board tabled all three; that was early in 1984, and they are still gathering dust. So what has the South Dakota legislature accomplished? And what will the New York legislature have accomplished? That the Federal Reserve Board, the FDIC, and the Federal Home Loan Bank Board will simply oblige the New York legislature is certainly not assured. The simple truth would seem to be that dual banking, once a sleek and complacent cow, has grown scraggy and, with more abuse, will grow yet scaggier. Evidently, many members of Congress, including some of great influence, feel that they cannot be as indulgent as many of their predecessors were. It must be that, the threat of oblivion aside, we live in perilous times.

Thus, as I read the recent past, there has been no considerable weakening of restrictions on what banking organizations may do. There could be in the future, but with Continental Illinois National Bank and Trust Company having gone bust, that has become, at least for the moment, less likely.

FROM BEYOND THE PALE

When Congress amended the Bank Holding Company Act in 1970, it provided a new definition of the word *bank*. Thereafter, any association

23. In July 1984 the Federal Home Loan Bank Board issued a proposed regulation that, if adopted, will make it tougher than at present to become a manager or director of an S&L insured by the FSLIC. The regulation is more limiting than regulations applying to state-chartered S&Ls, and state regulators, still remembering how the Bank Board dealt with those insurance applications of state-chartered California S&Ls, are currently muttering about a legal challenge.

that accepted demand deposits and made commercial loans was to be regarded as a bank.²⁴ And still today any association that accepts demand deposits or makes commercial loans but does not do both is legally something other than a bank. It is a nonbank bank or, for me, a loophole bank.

As has been so since 1956, any association owning a commercial bank is, under the Bank Holding Company Act, a commercial bank holding company and, as such, subject to regulation by the Federal Reserve Board. A company owning a loophole bank is not a commercial bank holding company, nor subject to regulation. It is an unregulated commercial bank holding company.

Who in the private sector first came to appreciate that there might be opportunity in the word *and* being different from *or* is not known. In the late 1970s, however, something of a rush to establish loophole banks began. By the end of 1983 there were, by the usual way of counting, fifty unregulated commercial bank holding companies in existence.²⁵ And what a heterogeneous fifty they were. To single out a few, there was a retail furniture chain, a one-time specialist in the manufacture of pens (since gone out of banking), and an industrial conglomerate of impressive proportions. Also included in the fifty were mutual fund managements, giant consumer finance houses, and, last but hardly least, some of the recently born financial-services conglomerates.²⁶ For me, however, because I consider S&Ls to be banks, there were not fifty unregulated bank holding companies in existence at year-end 1983 but more, including a manufacturer of steel products and, even more interesting, a giant

24. There is a very readable discussion of the change in definition in John J. DiClemente, "The Meeting of Passion and Intellect: A History of the Term 'Bank' in the Bank Holding Company Act," Staff Memorandum 83-1 (Federal Reserve Bank of Chicago, 1983). As DiClemente points out (p. 7), it is explicitly stated in the Garn-St Germain Depository Institutions Act of 1982 that no S&L insured by the FSLIC is to be considered a bank. When, under the 1982 act, S&Ls were given authority to make commercial loans, there was perhaps a danger that regulation of association holding companies would pass from the Federal Home Loan Bank Board to the Federal Reserve.

25. For an only very slightly out-of-date listing, see "Cross Industry Ownership of U.S. Commercial Banks," *American Banker*, December 16, 1983, pp. 30-31.

26. See "The Perils in Financial Services," *Business Week*, August 20, 1984, pp. 52-57, for a brief discussion of how recent entrants into banking have fared. Not surprisingly, the main theme is how poorly many of those companies, new also to insurance and stock brokering, have done in the property and casualty insurance and brokerage businesses. It is, however, of some relevance that accounting profits or cash flows of companies in those businesses can change greatly even from year to year.

retailer whose catalogue was long ago the *Playboy* magazine of farm boys.

Under the law an owner of one S&L or, under very special circumstances, more than one is not subject to regulation by the Federal Home Loan Bank Board. Few seem to mind, though; the fussing has been mostly about loophole banks and, by implication, their owners, the unregulated commercial bank holding companies. The Federal Reserve Board has gone to extraordinary lengths to get those companies into its fold. It evidently sees them as being, by their very existence, quite a serious problem. Yet it does not seem ever to have stressed that an increased number of loophole banks will in any direct way make open market operations less effective.²⁷ For one thing, existing loophole banks have to hold required reserves, and barring some strange development, new loophole banks, if ever there are any, will too. Presumably the Federal Reserve Board is worried that unregulated commercial bank holding companies, being beyond its reach, can be as risky as they please and therefore threaten the stability of the banking industry. A mere fifty unregulated commercial bank holding companies, all owners of banks with piddling footings, cannot cause much trouble. But a legal loophole may be like a hole in a dike.

THE RESPONSIBILITIES OF THE FEDERAL RESERVE

I come back now to what I described as an interesting possibility: that the Federal Reserve is less effective than it was, not because it is any less able in whatever sense to control nominal GNP, but because it is less likely to want to; or if it has not already become more susceptible to distraction, that it will become so over the years immediately ahead.

27. In his "The Meeting of Passion and Intellect," p. 34, DiClemente suggests that "any proposal [to acquire what will be a loophole bank] which has the effect of making monetary control more difficult is unlikely to be approved absent compelling public benefits." He cites the Federal Reserve's decision on the application of First Bancorporation of Salt Lake City to acquire Beehive Financial Corporation and thereby the latter's wholly owned industrial bank subsidiary, Beehive Thrift and Loan Company, both also located in Salt Lake City [*Federal Reserve Bulletin*, vol. 68 (April 1982), pp. 253-55]. In approving the application, the Federal Reserve made Beehive Thrift subject to Regulation D and Regulation Q. For nearly all loophole banks, however, there has been no question of the applicability of those regulations, nor in the future will there be. Still, the Federal Reserve continues to fuss about loophole banks and their unregulated owners. It must have a deeper concern.

What I had in mind was that deregulation can make a banking industry less stable, that is, riskier or more prone to crisis, at least when government-provided deposit insurance is improperly priced, as it is in the United States. In considering the changes made in restrictions on the activities of banking organizations doing business in the United States, I did not find the scope for risk taking to have been increased appreciably. That there may be more changes in the future cannot be ignored, however, and again there is more to be said about interest rate restrictions having been eliminated. Moreover, if the Federal Reserve is right in its concern about unregulated commercial bank holding companies, then until Congress redefines what a bank is and thereby puts a stop to the proliferation of such companies, the banking industry must become ever riskier.

It is generally agreed that the Federal Reserve has a responsibility, although poorly defined, to deal with incipient and actual financial crises. But can having to deal with a financial crisis, looming or already arrived, reasonably be equated with having to let nominal GNP change other than as the Federal Reserve would wish? On that there is bound to be dispute. Or am I so sure of that only because I am myself of two minds?

One bank being in trouble, experiencing what is often euphemistically referred to as a liquidity problem, cannot be thought of as distracting. The Federal Reserve can lend to one bank, or several, and, composition aside, keep its portfolio of assets what it otherwise would have been. An increase in borrowed reserves is offset by a decrease in unborrowed reserves. Or, coming back to the Federal Reserve's portfolio, discount window loans are substituted for Treasury securities, as they were when Continental Illinois Bank was foundering.

With a great many banks near the edge, however, the Federal Reserve could be required or could be perceived as being required to maintain more or less constant nominal interest rates. (Presumably the banks would all have to be substantially unhedged.) Or there might be a great many commercial and industrial companies near the edge. But there is a response: even if it has to keep nominal interest rates unchanged, the Federal Reserve cannot be other than faithful to its responsibility for a well-behaved nominal GNP; for when a true financial upset or crisis occurs, the danger is deflation, and maintaining unchanged nominal interest rates is therefore being responsible. What we come to, then, is whether a financial crisis can force the Federal Reserve to keep nominal

rates unchanged or, if possible, to push them lower when inflation is the real or imagined long-term danger.

In 1966 the Federal Reserve was, in a manner of speaking, forced to a less restrictive open market policy by a threatened collapse of S&Ls. Whether it was confronted by an incipient financial crisis is arguable; there was no sudden revelation of large loan losses. In 1970 the Federal Reserve was forced to change policy again, to once more become easier than it would have wanted to be, by the failure of Penn Central. That failure could, I believe, have resulted in a classic financial upset. Yet, as I remember, the Federal Reserve was only briefly distracted; in a matter of months its policy was much as it had been before the failure. Thus, recent history leaves us wondering. The Federal Reserve being forced off course for a sufficiently long period of time may be at best only an abstract possibility.

It is tempting to argue from the Federal Reserve's traditional stand on regulation that it sees being torn by its two responsibilities as all too real a danger. If no less willing than the FDIC or the Office of the Comptroller of the Currency to, for example, authorize new activities for commercial banks, it is fanatical about having responsibility for regulation. Consider how Chairman Volcker successfully resisted the reorganization of bank regulation intended by the Task Force on Regulation of Financial Services.²⁸ We do not, however, have to think of the Federal Reserve as being power mad. Another explanation for its rigid insistence on being a regulator is an appreciation that how tightly commercial banks and parent holding companies are regulated influences the probability of a financial upset and thereby the probability of its having, perhaps at a crucial moment, to disregard cumulating inflationary pressures. Of course, to get from that appreciation to the Federal Reserve as regulator, it is necessary to assume that the FDIC and the Office of the Comptroller of the Currency, oriented differently from the Federal Reserve, cannot be expected or trusted to regulate with the objective of keeping the Federal Reserve from having to serve as lender of last resort.

28. For an interpretation of what must have been quite a battle, see "Volcker Apparently Blocks Effort to Cut Fed Authority Over Banks," *Wall Street Journal*, January 26, 1984, p. 31. See also "New Banking Agency Would Be Formed Under Proposal to Streamline Regulation," *Wall Street Journal*, February 1, 1984, p. 6. For a general discussion of the problem of organization, see Andrew S. Carron, "Banking on Change: The Reorganization of Financial Regulation," *The Brookings Review*, vol. 3 (Spring 1984), pp. 12-21.

What the Federal Reserve believes is not, however, simply to be accepted as gospel, and I am left not knowing what to conclude. Again, can there be real conflict between what most regard as the Federal Reserve's responsibility to maintain an unchanging average of dollar prices and, as required, to serve as lender of last resort? The answer may well be no. But an increased rate of inflation is not the only cost of a financial crisis. I therefore go on now to consider how even such deregulation as we have had may make for a riskier banking industry.

‘‘EXCESSIVE’’ COMPETITION

As has been noted, it was widely accepted in the 1930s that the financial crisis of 1930–33 was caused in large part by an excess of commercial bank competition. Before the crisis, some banks, competing for deposits, pushed offering rates ever higher and, to offset each cost increase, acquired still more risky loans. Then they were caught out. Or so the explanation goes. Economists have generally been skeptical. But with no restrictions on rates paid by banks and with deposit insurance provided by government but paid for with premiums not dependent on bank risk, an increasingly risky banking industry is much more than a possibility.

That phrase *excessive competition* is not a happy one. What is to be argued can be put better: the bank that is most inclined to risk default forces all the others in its market to follow its lead. Imagine a bank that, for whatever reason, wants to plunge. With no effective restrictions on rates paid to bank depositors, it increases its offering rates and, as must be assumed, its deposits; and it acquires relatively high-risk assets seeming to promise extraordinary returns. But what does a rival bank do, faced with such an aggressive bank? Watch as its deposits decrease? Or follow the aggressive bank? Watching or sitting idly by can easily be equated, rightly or wrongly, with going out of business. The rival bank is much more likely to follow. Until interrupted by a bad draw, some banks can thus make all others more and more default prone, but only if bank liabilities are insured by government and premiums do not vary with default risk. There is precious little solace in that qualification, though, since neither the FDIC nor the Federal Home Loan Bank Board nor the Federal Reserve has yet come to risk-dependent premiums. The elimination of restrictions on rates paid by banks is not to be viewed as an unmixed blessing.

For some months, proponents of deregulation have been saying that the failure of Continental Illinois Bank is not to be attributed to deregulation. In a sense, that is right; large losses in activities only recently made permissible are not what caused it to fail. It failed because it made too many loans that, in the event, were bad. What some proponents of deregulation have perhaps forgotten, though, is that the elimination of restrictions on rates paid to bank creditors qualifies as deregulation. The failure of Continental Illinois can therefore be attributed to deregulation, although not of recent years. It was in 1970 that restrictions applying to rates paid on large certificates of deposit were eliminated; but the bank could not have followed the course it did if those restrictions had continued to be, at least on occasion, binding.

What the Future Holds

With Penn Square Bank having failed only a couple of years ago, with the only thinly disguised failure of Continental Illinois Bank even clearer in memory, and with international loans worth but fractions of their original (expected) present values so prominent in the portfolios of the largest U.S. banks, it is perhaps too easy to see the future as bleak. I believe, though, that it is bleak and most likely will remain so. Unless deposit insurance policy is changed appropriately, the financial upset of the present could well be the first (and least depressing) of many. I also believe that we cannot count on deposit insurance policy being changed for the better anytime soon. The desirable alternative is, I believe, to make supervision of banks more effective.

GOVERNMENT INSURANCE TERMS

Today there is much greater awareness that government-provided deposit insurance can mean trouble if premiums are the same for all insured banks. Officials of the FDIC have long been particularly impressed with the danger inherent in improperly priced deposit insurance; one can go back a way and find them arguing that as deregulation proceeds, banks will become freer and freer to take advantage of government deposit insurance and that banks therefore have to be made subject to greater market discipline. In 1982 the FDIC undertook to

change deposit insurance policy on its own. When Penn Square Bank failed, the FDIC did not do the expected; instead of merging Penn Square into an ongoing bank, it paid off depositors, but of course none more than the statutory insurance maximum, \$100,000. So more than a few suffered (or in the end will suffer) losses. Thus did the FDIC make a point of extreme significance: being fully insured was not to be taken as a fact of life. If not in so many words, the FDIC has denied that its intent in paying off was to make that point, but in the interval between the failure of Penn Square and the failure of Continental Illinois it paid off the creditors of quite a few failed banks, admittedly all small, some of which could, however, have been merged.

With the failure of Continental Illinois Bank, the FDIC's attempt to end full insurance coverage for all bank depositors and thereby subject banks to market discipline came to an abrupt end. Since announcing that no creditor of Continental Illinois or of its parent would lose so much as a dime, it has been soundly criticized for treating large and small commercial banks differently, and almost certainly much time will pass before it starts in again where it left off when Continental Illinois came crashing down on it.

One wonders whether the FDIC should ever have begun its attempt to make effective the statutory insurance maximum. After all, funds can be parceled out among different banks at slight cost. Switching to a large bank, one so large that in the event of failure its creditors could not, as a practical matter, be paid off, is another possibility. And what if somehow a statutory maximum could be made effective? The threat of a bank run would become real again; banks could once again be likened to dominoes. There is the possibility that Congress will decree risk-dependent insurance premiums and perhaps even spell out how the risk components of premiums are to be determined. But until the experts have reached a consensus on how deposit insurance should be priced, Congress is not, I believe, going to do anything of the sort. Nor are the insuring agencies going to introduce risk-dependent premiums on their own. (For what it is worth, the FDIC and Federal Home Loan Bank Board could, however, both soon begin charging penalty premiums for "poor management.")

Of all the possible changes in deposit insurance policy, one stands out as practical and at least vaguely sensible: the insuring agencies might require every insured bank to have subordinated debt. It is not clear to me how requiring subordinated debt would approximate the optimal

insurance contract, for the optimal contract has so far eluded me. The practicality of the change in policy is what makes it appealing. Required subordinated debt would, I suspect, have to be short term, but banks could be allowed to consider their outstanding subordinated claims as capital. Were they to be so allowed, a subordinated debt requirement might be more acceptable than it otherwise would be, for the regulatory agencies, having recently gotten statutory authority, are engaged now in imposing capital-to-asset ratios greater than those that heretofore were acceptable.

Hopeful of being wrong, I recall my conjecture: over the foreseeable future, deposit insurance policy is going to remain essentially unchanged. We must keep in mind that the FDIC emerged from the crisis of the early 1930s to guarantee the survival of thousands of small independent commercial banks. Now, once again, many such banks face doubtful futures, and that Congress will do anything it believes might make their demise even more likely seems most doubtful. Furthermore, most if not all S&Ls are quite content with the insurance policy of the present. For S&Ls, full insurance coverage for all except possibly subordinated creditors is still a happy fact of life. The future could be filled, then, with more or less blatant attempts to exploit the federal government's insurance guarantee. That recent episode with the state-chartered California S&Ls, referred to earlier, may indicate what lies ahead. It may also indicate how reregulation is going to be managed: whenever a new way of exploiting the government's guarantee comes to the attention of the officials of one or the other of our insuring agencies, new ad hoc restrictions will be imposed. The prospect is certainly not pleasing, for although the smothering of profit-inspired creativity may be necessary, what the future would seem to demand more than anything else is improved bank supervision.

I should like to know how Penn Square Bank and Continental Illinois Bank and also Empire Savings and Loan Association of Mesquite, Texas, could have got to where they did. There may be others who are puzzled too. A bank, even after having launched itself on a risky course, can have a run of good luck. And it may not be easy for an examiner to blow the whistle if, despite the obvious riskiness of the course, the bank seems to be paying off handsomely. It may also not be easy for a \$30,000-a-year bank examiner to deal with a bank's \$300,000-a-year chief executive officer. But what we apparently come to in the end is that,

except in certain rare circumstances, regulatory officials are extremely reluctant to use their enforcement powers.

As I indicated, I am puzzled. Yet, believing that deposit insurance policy is not going to be changed appropriately and that restrictions on rates paid bank creditors are not going to be reimposed, I see more effective official policing of bank loan portfolios as essential for the future. It is not that bank examiners are superior to bankers in appraising risks. Indeed not. How many examiners are on record as knowing beforehand that a decrease in the price of oil was in the offing? The point is that an examiner is more likely than the profit-maximizing banker to insist on, say, loan diversification.

Referring to bank examiners, I perhaps reveal myself as being terribly old fashioned. With new communication and record-keeping technologies, it is most unlikely that individuals are still required to monitor banks. That is the wonder. How could the failed banks of the recent past get to where they did? The new technologies do, nonetheless, justify a certain hope for the future.

Conclusion

U.S. bank regulatory policy has changed but not so drastically or fundamentally as to make the Federal Reserve incapable of influencing nominal GNP. If *effective* is defined using a reduced-form multiplier, then the Federal Reserve is not less effective than it was, even though restrictions on nominal interest rates paid by banks have been eliminated. So far as I am concerned it is still open whether, as a result of deregulation, the effect on nominal GNP of a change in the Federal Reserve's portfolio of Treasury securities is noisier than it was. If permanently noisier, then, on any sensible definition of the word, the Federal Reserve is less effective than it was. But I did not confront the possibility of a noisier effect directly.

Nor, on any sensible definition, is deregulation in the years immediately ahead likely to make the Federal Reserve much, if any, less effective. Most of the deregulation to which we can reasonably look forward (for instance, a weakening or elimination of geographic restrictions) is irrelevant to the Federal Reserve's ability to influence nominal GNP.

But one caveat must be recorded. With some small to very small probability, banks will one day be allowed to underwrite insurance and equities and bonds; and underwriting, whether of insurance or equities and bonds, is a relatively risky bank activity. Above, I suggested that when serving as lender of last resort the Federal Reserve may on occasion find itself having to accept more inflation than it otherwise would. There may well be nothing in that; I am myself quite unsure whether more inflation than desired could ever result from the Federal Reserve being distracted by a financial crisis, incipient or actual. Yet, even if not, no financial crisis is costless. And I rather suspect that until deposit insurance policy is changed, we will pay for having first deregulated, even though only a little, by bearing the costs of recurring crises. To put the point another way, those who are interested in the consequences of deregulation should look to how the riskiness of the banking industry has been affected.

APPENDIX A

*Litterman's Test for Structural Change*²⁹

CONSIDER the vector autoregressive representation $X(t) = \beta X(t-1) + u(t)$, where $\text{var } u(t) = \Sigma$. There are observations $X(t)$ for the discrete points in time $t_1, \dots, t_m, t_n, \dots, t_T$. Let β_I, Σ_I be the structure generating the observations for t_1, \dots, t_m or, equivalently, the observations of the regime I period; and let β_{II}, Σ_{II} be the structure generating the observations for t_n, \dots, t_T , the observations, that is, of the regime II period.

The question is whether the economic structures of the regime I and regime II periods are essentially alike. Is the condition $\beta_I = \beta_{II}$, with $\Sigma_I \neq \Sigma_{II}$, approximately satisfied? Litterman has proposed a way of deciding that.

Suppose that the task is to forecast the out-of-sample observation for t_h , where $h = 1, 2, \dots, m$. One can do that using the above autoregressive representation estimated from all the observations for t_1, \dots, t_m except that for t_h ; or, alternatively, one can use the same representation,

29. Litterman, "The Costs of Intermediate Targeting."

but estimated from all of the observations for t_1, \dots, t_T other than that for t_h . As Litterman has noted, with economic structures that are essentially alike, the second forecast should be, in some accepted sense, better than the first.

Litterman's reasoning suggests the following procedure. For any t of the set t_1, \dots, t_m , say t_h , the autoregressive representation is estimated using all of the observations for the regime I period other than that for t_h . Then, with the representation as estimated, a forecast of the observation for t_h is made, where $h = 1, 2, \dots, m$. With all m forecasts having been made, the root mean squared errors (RMSEs) for the several components of X are calculated. The RMSE for the i th component is $R_i(I)$, where the I in parentheses is a reminder that the forecast was based on an estimation using only observations for the regime I period.

The second step in the Litterman procedure involves, first, estimating the autoregressive representation using the observations of the regime I period, except that for t_h , and those of the regime II period. Then a forecast of the observation for t_h is made, $h = 1, 2, \dots, m$, and the RMSEs for all of the components of X are calculated. The RMSE for the i th component of X is $R_i(II)$, where the II in parentheses is a reminder that the forecast was based on an estimation using the observations of the regime II period as well as those of the regime I period, with the exception of that for t_h .

A comparison of $R_i(I)$ and $R_i(II)$ bears on how alike are the economic structures of the regime I and regime II periods. There is, for example, the extreme outcome $R_i(I) > R_i(II)$ for all i . It is a weak confirmation of the null hypothesis that the economic structures of the two periods are alike.

The numbers in the first column of tables 1 and 2 of the text are the values of the $\{1 - [R_i(II)/R_i(I)]\}100$ for the thirteen variables of the vector autoregressive representation that was used to test for structural change. Thus, zero is the critical value. A first-column entry greater than zero indicates that using the observations of the regime II period makes for a better forecast and hence, as was suggested immediately above, is consistent with no change in structure. In contrast, a first-column entry less than zero indicates that using the regime II period observations makes for a worse forecast and so hints at a change in structure.

That the extreme outcome $R_i(I) > R_i(II)$ for all i was referred to as "weak confirmation" will have surprised no one. Even with structural

change, an increase in sample size can result in an improved forecast. Litterman has proposed dealing with the difficulty of rival explanations for better forecasts by resort to Monte Carlo simulations. The autoregressive structure is estimated using all of the observations. Then assuming that errors are normally distributed, but with $\Sigma_1 = \Sigma_1$ and $\Sigma_2 = \Sigma_{II}$, where 1 and 2 denote the regime I and regime II periods, new observations are constructed for a sample of errors, and RMSEs are obtained in precisely the way previously described. Let $R_i^p(I)$ and $R_i^p(II)$ be the simulation analogues of, respectively, $R_i(I)$ and $R_i(II)$. A second subscript can be introduced, though, to serve as an index of samples. Thus, for all i , repeated sampling from the assumed distributions of errors generates the sets $R_{ij}^p(I)$ and $R_{ij}^p(II)$, $j = 1, 2, \dots, s$.

The ratio $R_{ij}^p(II)/R_{ij}^p(I)$ is a measure of the improvement in forecasting resulting from an increase in sample size. And comparing the ratios $R_i(II)/R_i(I)$ and $R_{ij}^p(II)/R_{ij}^p(I)$ for all i and j amounts to testing the null hypothesis. (Recall that the $R_{ij}^p(I)$ and $R_{ij}^p(II)$ were calculated on the assumption $\beta_I = \beta_{II}$ or, in other words, from observations generated by the autoregressive representation estimated using all actual observations.) Certainly $R_i(I)/R_i(II) > R_{ij}^p(I)/R_{ij}^p(II)$ for all i and j is inconsistent with the null hypothesis. But $R_i(I)/R_i(II) < R_{ij}^p(I)/R_{ij}^p(II)$ for some i and j may be consistent.

Another and, according to Litterman, better way of isolating the effect of increased sample size is by randomly choosing from the actual errors of the regime I and regime II periods. As he has observed, so choosing "generates a distribution [of changes in forecast variances] that is robust with respect to deviations from the normality assumption."³⁰ And indeed, in the Monte Carlo simulations actually done, the sampling was from actual errors.

Repeated samples generate sets of RMSEs, denoted $R_{ij}^*(I)$ and $R_{ij}^*(II)$, $j = 1, 2, \dots, s$. And the numbers in the second columns of tables 1 and 2 of the text summarize how the ratios $R_i(I)/R_i(II)$ and $R_{ij}^*(I)/R_{ij}^*(II)$ compare. In the experiment that was done, $s = 50$, and any second column entry is, for the appropriate value of i , the proportion of the fifty simulations satisfying $R_i(I)/R_i(II) < R_{ij}^*(I)/R_{ij}^*(II)$. A middling value (a 0.4, for example, or even a 0.9) is consistent with no structural change. But a zero must give pause; it suggests structural change. The improve-

30. Ibid., p. 17.

ment in forecast obtained by adding actual observations is less than the minimum of the improvements obtained by adding constructed observations.

The other extreme value, unity, is perplexing. It need not suggest structural change; a value of unity can result if the true economic structure is nonlinear. There is, however, another possible explanation for unity showing up, an explanation consistent with structural change although only of a particular sort. Take structural change to be a fact. The actual observations of the regime II period may be such that, when combined with the actual observations of the regime I period, they produce a better estimate of the true β of the regime I period than do the actual observations of the regime I period. Should they do so, the result is a relatively large improvement in forecast.

APPENDIX B

*Permissible and Impermissible Activities for Commercial Bank Holding Companies*³¹

Activities Permitted as “Closely Related to Banking”³²

BY REGULATION

1. Making or acquiring loans or other extensions of credit for own account or account of others, such as would be made by mortgage, finance, credit card, or factoring companies [(b)(1); 57 FRB 512 (June 1971)].³³

2. Operating as an industrial bank or industrial loan company [(b)(2); 57 FRB 513 (June 1971)].

31. Through March 1984. Adapted from Golembe Associates, *Bank Expansion Quarterly*, vol. 34 (First Quarter 1984), pp. 40–45.

32. See section 4(c)(8) of the Bank Holding Company Act, in which the phrase appears; or see the excellent introduction to U.S. bank regulatory policy, Carter H. Golembe and David S. Holland, *Federal Regulation of Banking 1983–84* (Washington, D.C.: Golembe Associates, 1983), pp. 146–47.

33. Citations to (b)(1), (b)(2), and so on refer to subsections of Regulation Y section 225.25, which is the revision that became effective February 6, 1983. Citations such as 57 FRB 512 (June 1971) indicate the volume number, page number, month, and year of the *Federal Reserve Bulletin*.

3. Servicing loans or other extensions of credit [(b)(1); 57 FRB 513 (June 1971)].

4. Conducting trust or fiduciary activities [(b)(3); 57 FRB 513 (June 1971); 60 FRB 447 (June 1974)].

5. Acting as investment or financial adviser to the extent of (1) serving as advisory company to a mortgage or real estate investment trust, (2) serving as investment adviser to mutual funds, (3) providing portfolio investment advice to other persons, (4) furnishing general economic information, general statistical forecasting, and industry studies, and (5) providing financial advice to state and local governments on matters such as issuing securities and financing real estate projects [(b)(4); 57 FRB 513 (June 1971); 58 FRB 149 (February 1972); 58 FRB 571 (June 1972); 59 FRB 701 (September 1973); 66 FRB 984 (December 1980); *Board of Governors v. Investment Company Institute*, 450 U.S. 46 (1981)].

6. Leasing personal and real property provided the transaction is the functional equivalent of an extension of credit, i.e., a full payout lease [(b)(5); 57 FRB 513 (June 1971); 57 FRB 725 (September 1971); 62 FRB 930 (November 1976)].

7. Making equity or debt investments in corporations designed to promote community welfare or rehabilitation [(b)(6); 57 FRB 513, 515 (June 1971); 58 FRB 572, 595 (June 1972); 62 FRB 639 (July 1976); 64 FRB 45 (January 1978); Federal Reserve Board staff letter BHC-180 (June 25, 1979)].

8. Providing data processing and data transmission services, data bases, or facilities (including data processing and data transmission hardware, software, documentation, and operating personnel), or access to such services, data bases, or facilities by any technologically feasible means, where the data to be processed are financial, banking, or economic [(b)(7) and S225.123(e); 57 FRB 513, 515 (June 1971); 61 FRB 245 (April 1975); 68 FRB 505 (August 1982); 68 FRB 552 (September 1982)].

9. Acting as agent for sale of insurance (including property and casualty insurance) directly related to certain extensions of credit or the provision of other financial services by a bank or bank-related firm; and acting as agent for sale of any insurance in communities not exceeding 5,000 population, provided the principal place of banking business of the

bank holding company is located in a community having a population not exceeding 5,000 [(b)(8); 57 FRB 674 (August 1971); 58 FRB 800 (September 1972); *Alabama Association of Insurance Agents v. Board of Governors*, 533 F.2d 224 (5th Cir. 1976), *rehearing denied*, 558 F.2d 729, *cert. denied*, 35 U.S. 904; 65 FRB 924 (November 1979); 66 FRB 987 (December 1980); 67 FRB 629 (August 1981); S601 of the Depository Institution Act of 1982 (Public Law 97-320)].

10. Underwriting credit life and credit accident and health insurance directly related to credit extensions by the bank holding company system [(b)(9); 59 FRB 20 (January 1973); 62 FRB 537 (June 1976); S601 of the Depository Institutions Act of 1982 (Public Law 97-320); 69 FRB 815 (October 1983)].

11. Operating courier services for time-critical bank or financially related instruments, documents, records, and processing media [(b)(10); 59 FRB 892 (December 1973); *National Courier Association v. Board of Governors*, 516 F.2d 1229 (D.C. Cir. 1975); 61 FRB 588 (September 1975)].

12. Providing management consulting advice to nonaffiliated banks and nonbank depository institutions [(b)(11); 60 FRB 223 (March 1974); 60 FRB 446, 470 (June 1974); 68 FRB 237, 248 (April 1982); 69 FRB 926 (December 1983)].

13. Issuance and sale of travelers checks [(b)(12); 65 FRB 250 (March 1979); 67 FRB 912 (December 1981)].

14. Issuance and sale at retail of money orders and similar consumer-type payment instruments (\$1,000 maximum face value), and sale of U.S. savings bonds [(b)(12); 63 FRB 414, 416 (April 1977); 65 FRB 250 (March 1979); 67 FRB 912 (December 1981)].

15. Performing real estate appraisals [(b)(13); 66 FRB 975, 984 (December 1980)].

16. Arranging equity financing, which involves arranging for the financing of commercial or industrial income-producing real estate through the transfer of the title, control, and risk of the project from the owner/developer to one or more investors [(b)(14); 68 FRB 647 (October 1982); 69 FRB 34 (January 1983); 69 FRB 225 (March 1983); 69 FRB 646, 651 (August 1983)].

17. Conducting securities brokerage and margin lending activities [(b)(15); 69 FRB 105 (February 1983); 69 FRB 718 (September 1983)].

18. Underwriting and dealing in obligations of the United States,

general obligations of states and their political subdivisions, and other obligations eligible for that purpose to member banks, including certain money market instruments such as bankers acceptances and certificates of deposit [(b)(16); 62 FRB 928 (November 1976); 64 FRB 222, 223 (March 1978); 65 FRB 363 (April 1979); 68 FRB 249 (April 1982); 69 FRB 465 (June 1983)].

19. Providing advice concerning foreign exchange operations, policies, and procedures and arranging for the execution of foreign exchange transactions [(b)(17); 69 FRB 221 (March 1983)].

20. Acting as futures commission merchant for futures contracts covering bullion, foreign exchange, U.S. government securities, negotiable U.S. money market instruments, and certain other money market instruments (futures commission merchant activities also cover the provision of options on certain futures contracts) [(b)(18); 63 FRB 951 (October 1977); 68 FRB 514 (August 1982); 68 FRB 651 (October 1982); 68 FRB 776 (December 1982); 69 FRB 216, 220 (March 1983); 69 FRB 733 (September 1983); 69 FRB 871 (November 1983); 70 FRB 53 (January 1984)].

BY ORDER

1. Operating a “pool-reserve plan” for the pooling of loss reserves of banks with respect to their loans to small business [57 FRB 1037 (December 1971)].

2. Operating a savings and loan type business in Rhode Island [58 FRB 313 (March 1972); 58 FRB 417 (April 1972); 66 FRB 665 (August 1980); see also entry 11 below].

3. Operating a guaranty (stock) savings bank in New Hampshire [61 FRB 901 (December 1975); 66 FRB 590, 594 (July 1980); 66 FRB 917 (November 1980)].

4. Buying and selling gold and silver bullion and silver coin; dealing in exchange and silver futures and arbitraging gold and silver internationally [September 27, 1973, order re Standard and Chartered Banking Group, Ltd., 38 Fed. Reg. 27552, October 4, 1973; 67 FRB 635 (August 1981)].

5. Operating an Article 12 New York Investment Company [63 FRB 595 (June 1977)].

6. Providing consumer-oriented financial management courses, counseling, and related financial materials [65 FRB 265 (March 1979)].

7. Providing check authorization, verification, or guarantee services for subscribing merchants [65 FRB 263 (March 1979); 66 FRB 64 (January 1980); 67 FRB 740 (September 1981)].

8. Executing unsolicited purchases and sales of securities as agent solely on the order and for the account of customers [67 FRB 635 (August 1981)].

9. Performing commercial banking functions at offshore locations; such functions include funding domestic operations through the offshore wholesale money market [68 FRB 251 (April 1982); 69 FRB 36 (January 1983)].

10. Offering NOW accounts, provided they are subject to the same federal interest rate limitations and reserve requirements that apply to a federally insured depository institution [68 FRB 253 (April 1982); but see *First Bancorporation v. Board of Governors*, 728 F.2d 434 (10th Cir. 1984)].

11. Operating a savings and loan association, provided the powers of the S&L are no broader than the powers of bank holding companies and the S&L acquired is threatened with financial harm [68 FRB 316 (May 1982); 68 FRB 382 (June 1982); 68 FRB 656 (October 1982); 69 FRB 554 (July 1983); 69 FRB 812 (October 1983); 70 FRB 149, 157 (February 1984); 70 FRB 593 (July 1984)].

12. Providing futures advisory services to both futures commission merchant (FCM) customers and non-FCM customers [70 FRB 369 (April 1984)].

13. Issuance and sale of variably denominated payment instruments with a maximum face value of \$10,000 [70 FRB 364 (April 1984)].

14. Brokering options on securities issued or guaranteed by the U.S. government and its agencies and on money market instruments; brokering options in foreign currency on exchanges regulated by the SEC [70 FRB 53 (January 1984); 70 FRB 368 (April 1984)].

15. Operating a chartered bank that does not both take demand deposits and make commercial loans [69 FRB 556 (July 1983); 69 FRB 923 (December 1983); 70 FRB 371 (April 1984)].

16. Executing and clearing options on bullion and foreign exchange on commodity exchanges regulated by the Commodity Futures Trading Commission [70 FRB 591 (July 1984)].

**Activities Prohibited as “Not Closely Related to Banking” or
“Not a Proper Incident Thereto”³⁴**

1. Insurance premium (equity) funding—that is, the combined sale of mutual funds and insurance [58 FRB 905 (October 1972)].

2. Underwriting life insurance that is not sold in connection with a credit transaction by a bank holding company or a subsidiary thereof [58 FRB 905 (October 1972)].

3. Real estate brokerage [58 FRB 427 (April 1972); 58 FRB 905 (October 1972)].

4. Land investment or development [58 FRB 428 (April 1972); 58 FRB 905 (October 1972); 61 FRB 325 (May 1975)].

5. Real estate syndication [58 FRB 905 (October 1972); Federal Reserve Board letter re BankAmerica Corp. (April 4, 1972)].

6. Management consulting [58 FRB 674, 676 (July 1972); 58 FRB 905 (October 1972)].

7. Property management services generally [FRB 652 (July 1972); 58 FRB 905 (October 1972); 64 FRB 415 (May 1978)].

8. Underwriting mortgage guaranty insurance [60 FRB 681 (September 1974); 60 FRB 727 (October 1974)].

9. Operation of a travel agency [62 FRB 148 (February 1976); *Association of Bank Travel Bureaus v. Board of Governors*, 568 F.2d 549 (7th Cir. 1978)].

10. Operation of a savings and loan association [63 FRB 280 (March 1977); Federal Reserve Board letter re National Detroit Corporation/Landmark Savings & Loan (March 16, 1981); 68 FRB 316 (May 1982); 68 FRB 382 (June 1982); 68 FRB 656 (October 1982); 70 FRB 593 (July 1984)].

11. Underwriting home loan life mortgage insurance [66 FRB 660 (August 1980)].

12. Contract key entry services [66 FRB 666 (August 1980)].

13. Underwriting property and casualty insurance and adjusting claims and making appraisals relative thereto [64 FRB 506 (June 1978); *NCNB Corp. v. Board of Governors*, 599 F.2d 609 (4th Cir. 1979)].

14. Dealing in platinum and palladium and other commodities [Sep-

34. Bank Holding Company Act, section 4(c)(8).

tember 27, 1973, order re Standard and Chartered Banking Group, Ltd., 38 Fed. Reg. 27552, October 14, 1973].

15. Issuance of market rate intrastate notes [68 FRB 198 (March 1982); see also 12 C.F.R. S217.17.156, S250.221].

16. Underwriting group mortgage life insurance (credit life insurance directly related to real estate loans)[68 FRB 319 (May 1982)].

17. Pit arbitrage (an activity conducted in connection with futures commission merchant functions) [68 FRB 776 (December 1982)].

18. Issuance and sale of money orders with a face value of \$50,000 or higher [Federal Reserve Board letter, April 28, 1983].

19. The publication and sale of personnel tests and related materials [70 FRB 462 (May 1984)].

Comments and Discussion

Robert E. Hall: John Kareken's paper concerns four related questions about the Federal Reserve's control over prices and output:

1. What regulations are necessary to give the Federal Reserve control over nominal GNP? Are things changing in a way that lessens control?
2. Does the elimination of controls on interest paid on deposits diminish the Federal Reserve's influence?
3. Does the widening range of permissible activities of banks threaten the Federal Reserve's control?
4. Do interest-rate decontrol and deposit insurance threaten the stability of banking and thus, indirectly, the Federal Reserve's control?

Kareken's answers are that the Federal Reserve has as much control over nominal GNP through open market operations as ever, but the rising instability of banks may interfere with the best use of the power. I agree completely with both conclusions.

Kareken poses the questions in terms of control over nominal GNP. I see this as a convenient way to say "control over real activity in some short run and the price level in the long run." I applaud his sidestepping of the controversial question of how long it takes for monetary action to influence prices. But I would take a stronger stand than he does that the ultimate job of the Federal Reserve is to control the price level.

On the issue of the regulations needed to make open market operations effective, I think Kareken takes too narrow a view. In his world, the Federal Reserve can issue only what he calls currency, meaning Federal Reserve notes and reserves. Neither pays interest. As he notes, banks would love to issue their own currency. If they are allowed to, they can in effect carry out their own open market operations. In an economy without regulations but with zero interest on currency and reserves, the

price level is indeterminate and the nominal interest rate must equal the cost of intermediation. Plainly, the Federal Reserve has no control.

But this conclusion is an artifact of the assumption of zero interest on currency and reserves, which in turn is the outcome of Kareken's adoption of the peculiar "Minnesota convention" of calling reserves currency. Nothing stops the Federal Reserve from paying interest on reserves; recently, the Senate Banking Committee approved a bill, just defeated on the floor, to do exactly that.

Kareken's statement that a prohibition on private-sector intermediation is necessary for an effective Federal Reserve is quite wrong. The Federal Reserve can stay ahead of any private creation of financial instruments just by paying more interest on reserves. It is quite unnecessary to have any regulations against private currency or private reserves. The anti-free-market tone of the paper is mistaken.¹

On the position taken by Albert Wojnilower that interest rate decontrol has lessened the Federal Reserve's control of disintermediation, Kareken is negative on two grounds. First, as a matter of theory, arbitrage in credit markets should keep the real effects of disintermediation to low levels. Here, he is in conflict with Bernanke's work on the depression, which identifies strong real effects from the absence of such arbitrage.² Second, he finds little evidence of added effectiveness of monetary policy during the period 1966–70, when interest rate controls were binding.

With respect to the effect on monetary policy of elimination of controls on permissible activities, it is hard to disagree with Kareken's negative conclusion. The pillar of monetary control under today's structure, required reserves against transaction deposits, has remained intact through all recent changes. Loophole banks have the same reserve requirements as real banks. And whether or not banks can sell insurance, own real estate, or underwrite securities has no obvious connection with the control issue.

Finally, Kareken delves into what I see as the liveliest policy issue, namely deposit insurance and bank stability. As he points out, we have created a monster by letting banks borrow unlimited amounts with

1. See my "Optimal Fiduciary Monetary Systems," *Journal of Monetary Economics*, vol. 12 (July 1983), pp. 33–50.

2. Ben S. Bernanke, "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression," *American Economic Review*, vol. 73 (June 1983), pp. 257–76.

federal guarantees. Continental Illinois Bank has demonstrated that these guarantees apply to all the liabilities of big banks. Only heroic stretching of the rules by federal regulators has blocked the plans of clever California entrepreneurs to finance risky real estate deals through insured deposits, where the shareholders capture all the upside profits and the taxpayers absorb all the downside losses.

I am not sure I agree with Kareken's solutions to this problem, which are increased requirements for uninsured subordinated liabilities and better government examination of bank assets. The pressures that made us bail out the uninsured creditors of Continental Illinois would be no less intense after banks were required to change the legal form of part of their liabilities. And there is no better example of policy inconsistency than bank examination. When it comes time to close a bank because an honest evaluation gives zero net worth, the government will always think up a good excuse for keeping it open.

I think a better general direction is to declare that the nontransaction liabilities of banks are not special—their holders face the same risks as holders of corporate liabilities in general. A default on certificates of deposit should be handled just like the bankruptcy of any corporation—an act of Congress should be required for a bailout. For transaction deposits, a foolproof system could be based on 100 percent reserve requirements in Treasury bills (or interest-bearing reserves).

If we do not do something about bank instability pretty soon, then Kareken is fully justified in his concern that keeping banks out of trouble may seriously interfere with monetary stability, even in a growing, healthy economy.

James Tobin: Deregulation, combined with technological and entrepreneurial innovation, is dramatically changing the structure of banking and related financial industries. John Kareken is concerned with the macroeconomic implications of these developments, as is appropriate in this panel. The competitive and political struggles for dominance or survival in the new environment are very exciting for the participants and the financial press. But the facile conclusion that the Federal Reserve is losing control of macroeconomic events demands the kind of skeptical analytical inspection Kareken gives it.

Are Federal Reserve Operations Still Effective? After all, “wolf” has been cried before. Federal Reserve control survived the development of

the Federal Funds market, the emergence of Eurodollars, the erosion of Regulation Q, the growth of money market funds, and the invention of numerous inexpensive ways of substituting reserve-free assets paying higher interest rates for conventional means of payment. In these and similar cases, past, present, and future, the Federal Reserve might have to make one-shot adjustments of its portfolio to compensate for changes in the demand for high-powered money. More durably important, the Federal Reserve might find that because of changes in the relation of such demand to interest rates, GNP, and other macro variables, larger or smaller open market operations are needed to achieve its policy objectives. But as Kareken correctly observes, neither of those modifications of its operating environment means that the Federal Reserve has lost control; neither the size nor the variability of the Federal Reserve's securities holdings is a constraint or policy objective per se. During the past ten to fifteen years of rapid regulatory, institutional, and technological change, the Federal Reserve's grip on the economy seems, if anything, to have tightened, for better or worse.

Kareken is particularly concerned to refute the view that the Federal Reserve's control of the macroeconomy depends crucially on its power to force disintermediation or induce re-intermediation, a power that in turn was thought to depend on deposit interest rate ceilings. I think he is essentially right on this point, although my understanding of the new econometric test for structural change is too weak to enable me to derive from his statistical results extra credence in his argument.

Probably the demise of interest ceilings alters the sectoral impacts of monetary policies, distributing them more generally and concentrating them less on residential construction. But that does not spell loss of control in the aggregate. Nowadays whether a saver-lender holds a time certificate in a bank that in turn holds commercial paper or the saver-lender holds the paper directly does not have much macroeconomic significance. Shifts between intermediaries and open markets may, of course, alter various monetary aggregates and distort the information they contain. But so much the worse for them as targets of monetary policy. Kareken, I notice, never mentions them; his test of central bank effectiveness is more meaningful: ability to affect nominal GNP.

The Never-Never Land of Private Fiat Moneys. The ability of the Federal Reserve to control nominal GNP is, according to Kareken, safe so long and only so long as the government (1) can and does prohibit

private “intermediation” and (2) imposes, as by reserve requirements, demand for its own currency.

It is not clear to me whether or not Kareken means these two conditions to be identical, the second a particular manifestation of the first. The first main section of his paper is an excursion to a never-never land of *laissez faire* banking and currency issue. In that land a central bank can do nothing private agents cannot and will not undo. Perhaps Kareken set forth on this trip because he initially conjectured that deregulation is taking us part way to the polar destination he describes. If so, he thought better of the conjecture as he went along. This first section provides no clues to the consequences of the trends actually in process in the United States. Those changes fall far short of enabling private agents to manufacture base money. Nevertheless Kareken’s ruminations in this part are provocative. At least they provoke me.

Kareken, like his colleague Neil Wallace, asserts that the only reason governmental promises to pay its own currency in future are worth less than the promised currency is that the payment will come in unwieldy denominations. Protecting its monopoly, the government forbids private intermediation to repackage its promised payments. Kareken says, for example, that 1,000 privately issued ninety-day bearer bills for \$10 each, backed in aggregate by a \$10,000 ninety-day Treasury bill, would be worth \$10,000 right now. The large bill itself would sell at a discount equal to the costs of this “intermediation.” Those costs would fix nominal interest rates, given that currency itself and small-denomination time bills would bear no interest. Those bills would be as acceptable as currency in payments. If there were no restrictions on such private intermediation, government currency would have no scarcity value. Central bank exchanges of currency for future currency would be futile—still another Modigliani-Miller theorem.

No one can say for sure that this could never happen. What societies choose as generally acceptable media of exchange is a matter of arbitrary social convention. If Treasury bills, of whatever denomination, were generally acceptable, then they would be money, trade at par with currency, and be generally acceptable!

Yet I suspect that the sheer deferral of the obligation in time, irrespective of its denomination, would still give rise to a discount. I am not aware of any prohibition of private issue of small-denomination *time* obligations backed by Treasury securities. The prohibitions Kareken

cites are against the private issue of *demand* obligations in currency form. There is a risk that those private time obligations could not in fact be redeemed at par on demand until maturity; this makes them an imperfect substitute for currency. (There is, of course, no governmental insurance of private liabilities in this *laissez faire* world.) Once again, there will be no such risk if everyone agrees there is none, but the potentiality of risk in the absence of such consensus makes the consensus fragile. Note, by the way, that even if discounts on large Treasury bills reflected only the costs of change-making intermediation, there is a risk that those costs might vary within the maturity of the bills.

Observed levels and volatilities of nominal interest rates cannot be explained by these “intermediation” costs. Neither can the term structure of rates; since costs of breaking up large denominations are independent of maturity they would result in a downward-sloping term structure. Finally, does Kareken believe that a consol would have infinite value if only its coupons were in convenient amounts?

Answers to these skeptical remarks, I guess, will take us to Kareken’s second condition, government-imposed demand for its own currency via legal reserve requirements. I agree that regularly tested adherence to legal reserve requirements is the key element in the existing system of monetary control in the United States. Nevertheless I think that Kareken greatly exaggerates the consequences of elimination of these requirements—not that I would favor such a radical move.

In some national monetary systems assets other than currency, even certain private liabilities, are eligible to satisfy reserve requirements; in some cases they have actually been required in addition to or in place of currency. But this has not made them the equivalent of currency in value or function.

Even without legal reserve tests, banks and other private intermediaries operating a payments system, whether paper or electronic, would have to settle clearing imbalances with one another. They will adopt certain media for such clearings, and they will want to hold some reserves in those media as precaution against coming up short. Those media will be in effect high-powered money, and doubtless there will be a market in overnight loans of such assets, like the Federal Funds market today.

Bankers’ banks, or perhaps a dominant private bank that becomes essentially a central bank, will be a natural locus of clearing settlements, and their liabilities will be the natural medium. Lending and open market

operations by those banks or that bank will be effective without the help of legal reserve requirements. A government central bank would have no trouble monopolizing this role and making government base money the high-powered money of the system.

I have great difficulty imagining a thoroughly *laissez faire* system of fiat moneys with a common unit of account. What would a “dollar” be if it were not defined by government currency or other official liabilities or by designation of particular private obligations as legal tender in payments to the government and in settlements of private contracts?

For these reasons I do not believe that without legal reserve requirements nominal interest rates will be driven down to the costs of “intermediation” and become impervious to central bank operations.

How Market Interest on Deposits and Reserves Affects Monetary Policy. I return to more relevant issues. First, what is the effect of allowing banks and other intermediaries to pay market interest on deposits, given that reserve requirements and tests remain intact, or indeed are extended to all institutions that accept similar deposits?

The answer, I think, is pretty clear. An open market operation of given size has more effect on nominal GNP and on interest rates than in the previous regime. This does not necessarily mean that the Federal Reserve has more control, because the other side of the same coin is that financial shocks affecting the demand for base money or reserves also have bigger effects on nominal GNP and interest rates. In a sense the Federal Reserve has more power but may hear louder noise. Anyway the Federal Reserve will need to reconsider its old and, of course, optimizing solution to Poole- or Brainard-type uncertainties. Since the new structure is a less accommodative one than the old, the presumption is that the new optimal policy rule will be more accommodative than the old—unless evidence accumulates that in the new regime financial shocks are less probable relative to real demand shocks than they were before.

The propositions of the previous paragraph are based on the fact that the abandonment of ceiling rates on deposits makes the LM curve—or more precisely the LH curve, where H stands for high-powered money—steeper. The reason is very simple, especially if we go along with Kareken’s assumption that intermediation—this time not just making change but real-world intermediation between deposit liabilities and banks’ loans and investments—is a constant-cost activity. The differential between deposit rates and other market rates is then constant,

independent of the level of interest rates. Thus, variation of nominal GNP itself must do most of the job of equating demand for high-powered money to its supply. This conclusion is strengthened if interest rate effects of banks' demands for net free reserves are nullified by indexing the Federal Reserve's discount rate to market rates and by paying a similarly indexed rate on reserves, or just on excess reserves. These matters unfortunately were not treated in Kareken's paper.¹

Deregulation, Bank Risks, and Bail-Outs. Second, Kareken suggests that even if deregulation and the changing financial scene do not deprive the Federal Reserve of its ability to control nominal GNP, they may weaken the Federal Reserve's will to take and to maintain a restrictive anti-inflationary stance. Costly competition for deposits, combined with a deposit insurance system that transfers risk to taxpayers, will lead banks to take more risk and to get into trouble more often. The most careless banks will set the tone and force the more prudent to join the chase. I am not sure that this scenario is consistent with long-run rationality by bank managers in view of what happens to their reputations and their banks even when their depositors, and maybe also their stockholders, are bailed out. But the scenario rings true to recent history. Kareken might have added that the new regime, characterized by greater swings in interest rates, is likely to make maturity intermediation, which used to be the main business of bankers, more perilous than before.

Anyway, as the story continues, the Federal Reserve's anti-inflationary ardor may be cooled by fears of the consequences for bank liquidity and solvency of increases in interest rates. Also the Federal Reserve may be more frequently called upon as lender of last resort and be compelled to inject reserves via the discount window regardless of the current macroeconomic situation.

In my opinion, as in Kareken's, monetary policy need not be distorted by last-resort lending. Deposits drained from a suspect bank go directly or indirectly to other depositories and augment their reserves. This redistribution is expansionary, because the healthy beneficiaries of the shift are prepared to lend out new reserves pretty much in their normal fashion, although their precautionary demand for net free reserves may be temporarily enhanced by the example of their unfortunate competitor.

1. The propositions are developed at length in my "Financial Structure and Monetary Rules," *Kredit und Kapital*, vol. 16 (1983), pp. 155-71.

Meanwhile, extraordinary borrowing at the Federal Reserve limits the contractionary effects of the deposit loss on the troubled bank; it does not have to sell as many assets as the deposit-gaining banks are enabled and prepared to buy. However, the net expansionary effect of these events can easily be counteracted by offsetting part of the expansion of borrowed reserves by reduction in the supply of unborrowed reserves.

Economywide consequences of failures of large banks have been greatly exaggerated in the rhetoric of the industry, the news media, and the concerned government officials. Words like dominoes, runs, and panics conjure up memories of the early 1930s. The analogy thus suggested is false. In the 1980s we do not confront a wholesale run from banks to currency, and if we did the Federal Reserve would now have no trouble supplying the desired currency without curtailing the supply of bank reserves. The runs we have seen are from troubled banks to other banks; these do not destroy the aggregate reserve base. Or they are from bank deposits to market instruments, domestic or foreign. Contrary, evidently, to widespread misunderstandings, such flight cannot destroy any reserves either. The worst they can do is to force some disintermediation, in which banks sell to their erstwhile depositors the market instruments they now prefer. That may be bad for bank shareholders, but it is not a social disaster.

For these reasons, the extraordinary solicitude of the Federal Reserve and the FDIC for the survival of mismanaged large banks seems misplaced. I agree with Kareken that the extension of insurance coverage to uncovered deposits is a bad precedent. His suggestion of subordinated liabilities appears sound to me. One form these could take is that of deposits explicitly uninsured.

General Discussion

Several discussants expanded on how deregulation may have altered the effectiveness of monetary policy. Richard Cooper argued that just because deregulation does not render the money multiplier zero, as Kareken notes, this does not imply that making the multiplier smaller leaves policy unimpaired. Policy actions may have undesirable side effects which are ignored within the historical range of policy actions. But these side effects may become important if much larger policy actions are needed to affect the economy, especially if the relationship

governing the side effects is nonlinear so that they become disproportionately larger. Thus Cooper reasoned we should be concerned about whether deregulation will cause needed open market operations to have undesirable side effects on bond markets, foreign exchange markets, and bank solvency. Ralph Bryant added that there has been something of a competition among countries to reduce supervision and regulation of international financial transactions. This, together with the increasing integration of international financial markets, may make the effect of open market operations on the national economy less predictable. More generally, a less predictable money multiplier, which may be implied by these and other regulatory changes, reduces the effectiveness of monetary policy. William Brainard noted that any regime change necessarily implies a loss of information to economic agents about how the world works. The adjustment costs to economic agents that accompany deregulation and the resulting changes in financial structure ought to be balanced against any benefits of such changes.

There was disagreement over whether deregulation, in addition to increasing the volatility of interest rates, has also raised the level of interest rates. Robert Gordon reasoned that, if deregulation has steepened the LM curve, interest rates would be higher for a given shift in the IS curve. Lawrence Summers noted that the effects of deregulation on previously unregulated rates was theoretically ambiguous. Furthermore, the argument resting on a steeper LM curve would imply short rates would rise relative to long rates because the latter were determined by real equilibrium conditions rather than by the LM curve. This tilt in the yield curve had not been observed. Finally, he noted that if deregulation were an important part of the explanation for today's high real rates, the stock market should have fallen rather than risen as it has.

Barry Bosworth agreed with Robert Hall that banking reforms ought to accompany banking deregulation in order to make monetary changes an acceptable policy instrument. With deregulation, the greater volatility in interest rates has resulted in more banks being declared insolvent. Deregulation has increased the frequency of cases in which the Federal Reserve has had to choose between sustained anti-inflationary policies and the financial health of its constituency, the banking community. To remove this conflict, the authorities could require an increase in the capitalization of banks or an increase in deposit insurance requirements against which banks could draw when needed.

In his reply, Kareken agreed with Hall's and Bosworth's point about the need for reforms, but he disagreed with their suggested solution. If a bank determines its portfolio according to economic theory, that theory gives only the optimal share of wealth to be held in each asset. This means that unless portfolio payoffs are arbitrarily restricted, the amount of capital required has no effect on the probability of bankruptcy. Kareken rejected Tobin's approach to analyzing the deregulation issue. Underlying probability distributions of returns and therefore asset demands must change when regulatory policy changes, but that is ignored in Tobin's approach.