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Paper based on Central Banking and Money Market Changes: A Reprise

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In 1957, when my Central Banking and Money Market Changes appeared, there may have been some novelty in pointing out that the monetary and financial instruments, usages, and behavior of the significant banking institutions and financial markets change/m-or evolve/m-in response to perceived profit opportunities. In 1985, it is commonplace. But the fact that the substance of money has changed strikingly over the past four decades has not significantly changed the way monetary theorists think about money. The assumption of exogenous money/m-that there is a well-defined, exogenously determined money supply that the central bank can

control with adequate precision/m-still permeates monetary theory. In monetary theory, banks still are viewed as passive reactors that transform high-powered money into public money; profit-maximizing behavior by business apparently does not extend to banks and bankers./q1

Since the mid-1960s, the world's central banks, and our own Federal Reserve System, have been at least as concerned with maintaining the ``integrity'' of the banking and financial structure as with the control of ``a'' money supply in order to guide the economy to some desired performance goal. Beginning with the Federal Reserve's reaction to the credit crunch of 1966 and continuing through the recent episodes of domestic and international financial trauma, the Federal Reserve has episodically tossed aside any pretense of trying to achieve economic stability through monetary control, concentrating its interventions on defendin-

the integrity of the financial system, which it does by assuring that the nominal commitments of financial institutions on their ``monetary'' liabilies are fulfilled. There is a conflict between a central bank's ``func-H tion'' of economic control and its ``responsibilities'' as lender of last resort, which much of the theoretical discussion of money continues to ignore. This neglect is due to the chief weakness of the dominant neoclassi-cal theory, which restricts its analysis to equilibrium states. Within the theory, there is no possibility for the endogenous development of situations that require len-H der-of-last-resort interventions./ql

The central bank's conflict is even stronger when it is not only responsible for maintaining orderly condi-tions in the domestic money market but for a vast network of offshore banking denominated in its cur-rency, which leads to serious positions by offshore banking institutions in its domestic money market. It

raises the question of how the peculiar United States central bank (an integration of the Federal Reserve, the Federal Deposit Insurance Corporation, the Comptroller of the Currency, etc.) can fulfill its function as lender of last resort without giving banks a blank check to adventure on their assets and liabilities./ql

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Postwar financial evolution:/ql

the nature of money/ql

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The question of what is money is critical to quantity theorists and important to IS-LM Keynesians. The basic theory of monetarists/m-most especially of the new classical monetarists/m-depends on a strong equilibrium of the real sectors of the economy and a dichotimi-H zation of the economy's real and monetary aspects. In

this set-up, money is fundamentally neutral with respect to everything but the level of prices and wages. To square their theory with the fact of business cycles, modern quantity theorists like Friedman and Lucas devise far-fetched constructs by which money is, tran-H sitorily, not netrual even though in principle, and in the long run, money is neutral. These theorists explain business cycles by means of short-run, nonneutral adjustments to exogenous monetary changes./ql

In the standard IS-LM diagram a change in money will shift the LM curve and will normally affect the equilibrium interest rate and income. Neither in mone-H tarist nor IS-LM analysis do monetary changes result from the internal operations of the economy; they are imposed from outside./ql

In this theoretical literature/m-as well as the orthodox theoretical critiques of monetarisms/m-banking is never modeled. Standards of theoretical purity can be

so lofty that F.H. Hahn can publish a valuable book on Money and Inflation, properly critical of current tendencies in monetary theory, in which the words bank or banker never really appear. If we recognize, with Keynes, that (a) money is created in transactions in which banks add to their monetary liabilities by acquiring assets on which borrowers promise to pay money to the banks in the future, so that the creation of money is the first step in a process in which money is to be destroyed, and that (b) the money creation and destruction process centers around the profit (income) expectations of bankers and borrowers, then any economic theor" that treats money as exogenous, and which assumes a fundamental, in principle, neutrality to money, is undermined. This is so because once a debt structure denominated in money exists, the absolute level of prices, wages, and profits matter; the ability to fulfill contracts entered upon in the past, and

the current expectations that contracts entered upon today will be fulfillled, depend on what has happened and what is expected to happen to money prices./ql

Money has evolved to the point where today it can be the checkable liability of a nonbank, can earn interest, and can be internationally acceptable by means of a plastic card; this evolution has taken place in response to profit opportunities or income expenditure preferences of units financed by money-issuing organizations. This financing relation/m-under which money is like a bond/m-is the essential reason why monev in our economy is not neutral. At any time, there exists a vast international network of payments denominated in monies. In the aggregate, these payments can be made only if new financing commitments are undertaken by organizations whose liabilities are money that offset the money being destroyed as payment commitments to banks are being made./ql

Thus, no matter how the specifics of the money supply have evolved over the past forty years, the essential characteristics of bank money have not L changed. Bank money arises in financing activity, and the money-creating process includes commitments to make payments that will destroy money. But bank assets have changed, the major shift being from bank portfolios dominated by government debt to portfolios dominated by business debt, and the units that must make payments to fulfill the second part of the money-creating contract have changed. With this change, the source of funds for paying banks has changed. If government debt dominates bank portfolios, then tax revenues are the source of the validating cash flows. If business debts dominate, profits are the source. The growth of business indebtedness to banks relative to gross business profits, and sharp increases in interest rates in the context of highly indebted businesses, tend

to increase the instability of the bank financing process. The asset structure of banks and the ratios of business payments on indebtedness to profits are among the relations that affect the stability of the financial structure; the likelihood that intervention by the lender of last resort will be necessary, and the conditions under which it will occur, depend on the asset structure of the banking system./ql

The change in the nature of the money supply that has deep meaning for the system's behavior is not the change in the payment mechanisms, but rather the change in the banks' assset structures. The Keynesian financing veil has serious repercussions for the behavior of an accumulating capitalist economy./ql

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Position-making instruments/ql

and markets/ql

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The changes over the past forty years in the position-making instruments and in the markets affected by position-making activity have been at least as significant as the changes in the nature of the money supply. At the end of World War II, banks were loaded with an asset/m-U.S. Treasury debt/m-that was readily marketable. When banks gained or lost reserves through clearings, they operated to bring their reserve to the desired or legally required level by buying or selling this asset. This regime was characterized by extraordinarily low interest rates, so that for most units the transaction cost of placing idle reserve funds in overnight or very short-term markets ourweighed the potential gains./ql

As interest rates rose in the early 1950s, the minimum balance it paid to put to use in overnight loans

fell. As a result, a market in Federal Funds rapidly developed. With the growth of this market, banks were able to ``make position'' by borrowing/m-by acting on their liabilities. A wide variety of ``position-making'' choices developed, including certificates of deposit, commercial paper of holding companies, various re-H purchase agreements, and borrowings and lendings to overseas affiliates./q1

The forms of bank liabilities proliferated. As nominal interest rates rose/m-bankers always live in a ``no-H minal'' world/m-the free services bankers offered depositors no longer compensated for lost interest. On both retail (household) and business accounts, banks began to ``buy'' their deposits. The combination of bought money and position-making by operating on liabilities made banks more sensitive to the continued normal functioning of financial markets. There is a potential for volatility and periodic problems in posi-H

tion-making in bought-money, liability-management banking that does not exist in a client-based liability structure and position-making through assets. The volatility of financial markets and the need for close relations between banks and the central bank increases as the banks come to depend on making their position by placing liabilities./ql

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Bank assets and/ql

household and business debt/ql

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If we consider the Keynesian veil of money, in which money is like a bond in that it finances positions in assets, then what money ``obscures'' is the particular combination of assets that the monetary liability of banks finances. Bankers, like other business people,

try to maximize profits. The shift in the asset composition of bank portfolios, and the increased leverage ratios by households and businesses, reflected emerging profit opportunities./ql

As a result of the growing indebtedness of business, a larger share of the flows of gross business profits after taxes must now go to fulfill commitments on liabilities. In a similar fashion, a larger portion of household income must now go to validate household debt. (The exploding government debt means that a larger portion of government tax receipts must now go to validate government debt.) Bankers, in turn, finance their positions by ``paying'' for deposits, either in cash or in services. The difference between interest receipts and the expenses of acquiring and holding funds is the banks' ``fund income,'' and this fund income can be hurt by volatile/m-and especially by rapidly rising/m-interest rates. In particular, the higher the ratio of

sectoral indebtedness to sectoral incomes, the greater the likelihood that a rise in interest rates will lead to particular firms or households not being able to fulfill their payments commitments out of their cash flows. Nonperforming loans not only harm banks' income, they lead to a reconsideration of banks' lending standards./q1

Since the 1960s, businesses' direct access to financing by means of commercial paper has increased. Ever since the Penn Central/Goldman Sachs fiasco of the late '60s, commercial paper has been backed up by unused bank lines of credit, perhaps documented by a letter of credit. Such ``back-up'' or ``pre-endorse-H ment'' credit arrangements provide both fee income for banks and a way of facilitating financing for bank customers in a period of strong credit demand. What such arrangements do is formalize a ``refinancing'' relationship: if the open-market financing channel is

blocked, if the borrower cannot roll over open-market paper, then the bank will refinance the client's ``po-/qc sition.''/ql

This refinancing commitment is analogous to the central bank's relationship, as lender of last resort, to member banks. The evolution of the financial structure toward greater complexity results in a variety of refinancing and stand-by financing relations. Some of these are by government agencies/m-the Continental Illinois case demonstrated that the FDIC cannot do its job without prior refinancing intervention by the Federal Reserve./ql

Hidden bank assets and contingent bank liabilities, as well as the contingent commitments by government organizations, have increased the likelihood that L movements in Federal Reserve credit will be determined by market conditions/m-by its responsibilities as lender of last resort./ql

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The internationalization of/ql

dollar banking/ql

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The Latin debt crisis and the de facto failure of the Continental Illinois National Bank were the major events of the summer of 1984. Although Continental's woes may be more directly linked to its U.S. than to its overseas assets, the ``run'' on the bank that was the proximate cause of its terminal difficulties is related to the current structure of international banking. This structure is dominated by a wide network of mostly dollar-denominated bank debt. Such debt need not be of U.S.-chartered organizations, the dollar assets a bank owns need not be the debt of a U.S. entity, and the holder of bank debt as an asset need not be a U.S.

citizen./ql

Such Eurodollar or Asian dollar banking involves a commitment by the debtor bank to deliver dollars to whomever the creditor/depositor desires, at the time the deposit contract matures. This means that the bank that runs a dollar book must command ``dollars'' that are acceptable for covering dollar clearing losses. Such ``dollars'' are New York dollars that can be converted if necessary into Federal Reserve funds. Such New York dollars can be in the form of certificates of deposit in U.S. banks, quickly negotiable commercial paper, or short-term Treasury securities. There is a market demand for short-term and negotiable U.S. dollar assets (or U.S. lines of credit) that depends on the volume of dollar-denominated liabilities in banks that are not U.S.-chartered./ql

In addition to its own New York dollar resources, a foreign bank running a dollar book has access to dol-

lars through its central bank. For such banks, three things determine the availability of dollar refinancing by the central bank: the central bank's dollar holdings, the ``swap'' arrangements between the central bank and the Federal Reserve, and the terms on which the central bank will make U.S. dollars available. But as the Federal Reserve's actions in the New York market determine the terms on which an offshore central bank can sell New York assets to refinance a ``member'' bank in trouble, then the Federal Reserve is the de fa~to lender of last resort to the international financial structure./q1

Events in 1984 demonstrated that the Federal Reserve has responsibility in today's banking structure for more than maintaining orderly conditions and the availability of refinancing within the United States. After the ``Volcker'' article in the December 7 Wall Street Journal, it should be clear that the Federal Re-

serve became monetarist in 1979 to protect the ``dol-H
lar-denominated system'' and abandoned monetarism
three years later for the same reason. The first time,
the actions were taken to halt a run from the dollar; the
second time, to halt a run to the dollar./ql

The Federal Reserve now acts as lender of last re-
sort to the world dollar-denominated banking system,
regardless of where the banks that have the dollar book
are domiciled./ql

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Convertibility and the value of/ql

bank money/ql

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Each bank promises its depositors that under terms as
set out, its liabilities will be converted into some other
money. Each bank will keep on hand some of the

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money it needs to be able to fulfill its commitment. Normally, each bank promises that it will ``convert'' its liabilities into liabilites of other ``banks,'' even into liabilities of the central bank. Thus banks keep reserves (assets) in the ``money'' that they promise to deliver, and they manage their asset structures so as to generate a flow in their favor of the money they promise to pay./ql

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Each ``bank'' therefore has its own money; what passes as as economy's money is really a summation of the ``money'' of many different institutions. Each money is convertible into any other money/m-Bank of America money is convertible into Citicorp money.''

Not all banks use deposits at a Federal Reserve Bank as their clearing money; state banks, savings and loan organizations, and credit unions typically use deposits at commercial banks, their so-called correspondent banks. Eurodollar deposits are offshore liabilities of various banks, almost always dated; these banks promise to pay their depositors dollars when their deposits fall due. The dollars into which they promise to convert their liabilities are New York dollars./ql

As a result, the reserve money for Eurodollar deposits consists of assets such as U.S. Treasury debt or certificates of deposit in various U.S. banks, that are

readily convertible into demand deposits int U.S. banks. The fact that U.S. bank deposits are high-H powered money for the Eurodollar market makes the banks in which these deposits are held of particularly important to the stability of the world financial structure. ``Withdrawals'' of offshore deposits triggered the Continental Illinois collapse. The deposits that ``ran'' were de facto reserve deposits of offshore banks that manage a dollar book. The offshore dollar system was at stake in the Federal Reserve intervention in the Continental Illinois case; if the $7 billion of refinancing it provided had not been forthcoming, the ability to deliver New York dollars for all of the offshore dollar banking syustem would have been in doubt. And such doubt triggers runs./ql

Thus the Continental Illinois case shows that in the current structure of financial relations, the Federal Reserve is the de facto lender of last resort not just for

U.S. chartered organizations but for all banks that run dollar-denominated books. The Federal Reserve L therefore has responsiblities where it does not have control, responsibilities which depend on accepting the importance of maintaining the offshore dollar-denominated banking system. I need not argue that this informal arrangement carries with it dangers, in that assumed intervention may not be forthcoming; this is self-evident. Furthermore, the system as it now stands leads to a demand for dollar assets/m-including Treasury securities/m-that is related to the growth and the currency of denomination of the international offshore banking system. In good part, the United States financial structure depends on the continued use of the dollar as the international currency of denomination./q1

The issue of convertibility raises a related question: why is ``bank money'' accepted? Given that there are as many different ``bank dollars'' as there are banks

with dollar deposits, why does anyone in his right mind accept a bank dollar in exchange for an intrinsically valuable good or service? The answer comes in two steps: any bank dollar is convertible at par into any other bank dollar, and a significant set of units are committed to ``earn'' bank dollars in order to fulfill their obligations on debts that are owned by banks. ``Bank dollars'' are valuable because units are operating in the economy to get ``bank dollars'' so they can pay ``bank debt,'' and in the process destroy ``bank dollars.''/ql

If we restrict ourselves to business debt to banks, then it is business gross profits/m-including funds acquired by selling out inventories/m-that furnish the funds that lead to the fulfillment of bank debts. But if for a moment we follow the heoric (??) Kalecki relations, by which ~~then~~ business gross profits equals gross investment, and and also investment requires bank financing, Thus fulfillment of payments on

~~of~~ bank debts requires that new debts be ``booked.'' If the expected profitability of business investment declines, the ability of business to fulfill debts can deteriorate./ql

Over the past four years, for both domestic borrowers and international indebtedness, there has been a spate of cases of significant size in which borrowers have been unable to fulfill their commitments on debts from their earnings. In these cases banks have either taken losses, rolled over the principal even as interest was paid, or ``folded'' the interest into the principal owed (i.e., capitalized the interest). If we assume that the creation of bank money is inflationary and the destruction of bank money is deflationary, then ``debtor problems'' of the recent past mean that the deflationary part of the ``bank money'' relation has not been forthcoming. This means that there is a substantial deterioration in the quality of bank money/m-which

implies inflationary pressures./ql

Inflationary pressures in dollars can be overcome by large-scale unemployment and by an appreciating dollar; both require high nominal, and therefore high price-level-deflated, interest rates. Of course, to the extent that dollar denomination rules for many commodities, an appreciating dollar implies inflation in the price level in other countries. The requisites for the U.S. system's stability may be destabilizing in other economies./ql

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The structure of/ql

regulation and intervention/ql

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The recent deregulation mania has swept aside many of the lines of demarcation that separated banks from

other financial institutions, even as the essential dominance of commercial banks in the primary creation of business nonbonded debt remained unaffected. If the point of view is the household, then the deregulation movement has led to a greater array of alternatives. But if the point of view is that of a borrowing business person, the basic dependence on commercial banks for short-term credit is unchanged./q1

With the growth of new forms of credit, however, the basic business/bank relationship has changed. With the growth and developoment of open-market paper, stand-by lines of credit have become more important to business. Large ``deals'' that may require assurance of performance have also become more common. Furthermore, with the growth in the size of individual financing needs, the inability of unit banks to wholly finance their customers has meant that markets in which paper is traded have grown. These mar-

kets go both ways: large banks get excess funds from smaller banks, and smaller banks get pieces of large credits./ql

Marketing paper is a substitute for institutional consolidation. Thus it can be viewed as ``doing'' for independent banks what, say, the Bank of America does internally, and may therefore be considered a transitory phenomenon until nationwide banking emerges. Alternatively, the marketing of paper can be seen as an efficient way to combine the concern with the smaller credits of unit banks with the capability of extending larger credits./ql

No doubt what has happened to date on deregulation and intervention is part of an unfinished story. The past several years have seen great interventionist suc-H cesses, in that the crisis of the thrifts, the crisis of the Latin American credits, and the de facto failure of Continental Illinois did not lead to a cascade of reac-

tions and thorough disruption of the economy. We should expect the interventions by the lender of last resort to become even more important if the transition we are now in leads to a consolidation of institutions, greatly reducing their number./q1

Lender-of-last-resort interventions have been the dominant feature of the Volcker years as Chairman of the Federal Reserve. Policy seems to be guided by intuitive recognition that disinflation will lead to threats of debt deflation, and that the intervention must be managed so that the debt deflation does not occur and so that seeds for an inflationary burst are not planted. The incomes policy that operated through unemployment and union-bashing, together with the appreciating dollar, meant that inflation was contained even as lender-of-last-resort interventions took place. Perhaps it can be argued that the Federal Reserve learned how to prevent a debt deflation without setting the

stage for a succeeding inflation from the experiences of 1967, 1969-70, and 1974-75. Of course, if the expansion that began two years ago resumes with vigor, the economy will enter the range where further expansions of aggregate demand are increasingly transformed into inflationary price movements./ql

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Policy issues/ql

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There is a conflict between any ``rule'' for central bank behavior and the central bank's responsiblities as lender of the last resort. The Federal Reserve cannot stand aside and ignore destabilizing developments in dollar-denominated banking in London or Singapore, for instability abroad will quickly be felt in New York. Similarly, a run from abroad on the liabilities of a/ L

Continental Illinois forced the Federal Reserve's L hand, not only to intervene in the specific case but to allow declarations to surface that liabilities of giant banks have a special, protected position in the U.S. banking structure./ql

There is also the

As for the question of how the U.S. central bank can fulfill its duties as lender of last resort without encouraging banks to adventure; there is a ``moral hazard'' problem with regard to the protected multibillion-dollar banks that does not exist for smaller banks. They can bias their asset and liability ``innovations'' toward instruments that can compromise their liquidity and

could explain to be protected

equity./ql

As long as the Federal Reserve fears disasters/m-and it holds that it acted correctly and prudently in aborting the various crunches and debacles of the past two decades/m-the odds are with the giant institutions forcing the Federal Reserve to intervene to support their oper-

ations and refinance them when a ``crisis'' threatens. The Federal Reserve must not be afraid of calling the bluff of any institution, of allowing it to fail and to wipe out not only its shareholders' equity but some of the depositors' value as well. But the failure, in this sense, of a bank as large as Continental Illinois would lead to a ``morning-after'' run on a large number of other giant banks/m-here and abroad/m-and a need for a much greater infusion of money than was necessary in the Continental case./q1

We therefore have a proposition that for the Federal Reserve to be able to stand aside and allow a bank to fail so that its depositors as well as its stockholders take losses, the bank must not be so large that in the Federal Reserve's view its failure will trigger a burst of further failures. This implies that there is a maximum size to a bank that is consistent with the Federal Reserve being able to stand aside in the individual case, intervening

as a lender of last resort only when markets are in crisis. In today's economy, this might set a $10 billion limit to the size of any bank. It is utopian to expect a reform of the banking structure in which the largest bank is of the order of $10 billion. Therefore, we can expect intervention by the Federal Reserve to continue to take place when individual giant banks are in difficulty./ql

A standard way to get around moral hazard problems is coinsurance. In banking, this implies a thick equity position, although, given the division between ownership and control, it is questionable that equity risk is really relevant. After all, a shareholder of Continental Illinois who owned the stock in June 1982 (before Penn Square broke) and kept it until the reorganization lost well-nigh all of his investment./ql

Increasing the ratio of bank equity to bank assets will hurt bank profitability. The returns on stockhol-H

ders' equity in a bank (or in any other levered institution) can be written as $\hat{|p|}/B = \hat{|p|}/A$ /mx A/B where $\hat{|p|}$ is profits, B is bank's book value, and A is the bank's assets. Thus, if a bank makes 0.75 percent on assets and has a book value equal to 5 percent of assets, the return on book value ($\hat{|p|}/B$) will be 15 percent./ql

Over recent years, there have been sharp pressures on bank profitability due to the rise in the costs of funds; the profits from fund management have been squeezed. Although banks have tried to supplement fund income with fee income, the effort has not as yet yielded major benefits. If the authorities succeed in raising required equity, so that the assets-to-equity ratio falls to 15, then the banks would have to raise their net after-tax fund income to 1 percent in order to achieve a 15 percent rate of return on book value./ql

A healthy financing system depends on the financial institutions' being profitable. Thickening capital as a

means of reducing the moral hazard in banking/m-of banking innovations being biased toward unwarranted risk-taking/m-may be inefficient if it lowers bank pro-/qc profitability./ql

A tighter regulatory regime may be an alternative to thickening capital as a way of getting around the moral hazard. To suggest greater regulation is certainly going against the tide. However, bankers themselves ``regu-H late'' their customers, and in the passing of credits from bank to bank they allow their standards for structuring and supervising loans to meet the test of their partners in syndication./ql

Bankers accept that their credit standards can be subject to peer review when they market parts of the lines they initiate. (The Penn Square case is an example of the failure of peer review during a euphoric boom.) If commercial banks normally borrowed from the Federal Reserve, if the discount window were the

normal source of a large percentage of banks' ability to lend, then the regional Reserve banks would really be bankers to bankers/m-with all the rights to structure and supervise credits that are normal in banking./q1

Thus one way in which an efficient banking system can be brought into being/m-a system in which the ability of banks to force the Federal Reserve's hand by means of periodic threats of failure is attenuated/m-is to make the relation betwen the bank and the Federal Reserve a normal banking relation. This implies a shift away from open-market-operations central banking and a return to the discount-window central banking that guided the system over its first decades. /q1

When I think of reforms that can really attenuate instability, I am forced into rather far-fetched changes: increasing equity, sharply limiting bank size, and returning to the discount window as the prime source of reserves. However imperfect the present system is, the

combination of big government and ad hoc Federal Reserve refinancing has kept downside instability within reasonable, though not wholly satisfactory, bounds over the past twenty years of financial fragility. The system's resiliance does not reflect any inherent properties, but rather is due to the bonds and constraints that result from the government's ability and willingness to sustain business by massive deficits and Federal Reserve refinancing interventions. As long as government is big and the Federal Reserve is a responsible lender of last resort, the disasters inherent in an accumulating capitalist economy are likely to be avoided. Muddling through at a standard in which nothing much worse than 1981-82 occurs is a distinct policy possibility with the present structure of massive deficits in recession and prompt lender-of-last-resort L interventions./ql