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Chapter III. The Emergence of Financial Instability

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Chapter III

The Emergence of Financial Instability

1. Some Organizing Principles

Economic crises have recurred throughout our history. The immediate postwar years were no exception. And the structure of our monetary and financial system has also been a matter of dispute since the early days of the republic. The restructuring of the Second Bank of the United States under Andrew Jackson, wildcat banking, the National Banking Act of 1863, William Jennings Bryan's "cross of gold" peroration, and the events culminating in the creation of the Federal Reserve System were concerned with monetary issues. Franklin Delano Roosevelt's clarion call to drive the money changers out of the temple ushered in basic monetary and financial reforms.

Ours is a capitalist economy with a sophisticated, complex financial system. Control over the capital assets needed in production is effected by means of complex financial structures.

Because our system is structured that debts are used to finance control over capital assets, our economy may be interpreted as a complex network of money in-money out relations. Every financial instrument, whether a short-term note, bond or insurance policy, constitutes a commitment to pay out cash to its holder at some future time, whether precisely defined or indefinite. The paper world of our economy may be considered as one setting up dated, demand, or contingent cash flows. The debtor needs funds to honor commitments, and he can obtain them from cash on hand (which only moves the problem back a step), from contributions to the production of income (wages and profits), from the cash generated by financial contracts he owns, from the sale of physical or

financial assets, or by borrowing. This list exhausts all but one of the possibilities--the actual production of cash, a method legally open only to the sovereign and, in a special way, to banks.

A firm's balance sheet, which lists its physical and financial assets on one side and liabilities on the other, provides a view of its sources and uses of cash. The difference between sales revenues and out-of-pocket costs make up the "grossest of profits," and this is the cash flow due to production. Financial instruments owned account for other cash flows. In addition to the above-named sources a unit can acquire cash from the sale of physical or financial assets. A company's gross sales proceeds derived from its current output is a cash flow that can be broken down into various parts, such as the wage bill, profits, and the cost of purchased supplies.

Payment commitments can be either dated (as in the case of bank loans or bonds), or demand or contingent obligations, and they include both repayment of debts and debt-servicing charges. The cash to meet these obligations can be obtained either from cash flows such as profits, from cash on hand, from the sale of assets, or by borrowing. A unit that expects its cash outflow over a given period to exceed its inflow is engaging in hedge financing. A unit engages in speculative or Ponzi finance when it expects to obtain the needed cash by selling some assets or by borrowing.

Banks, savings and loan organizations, and other users of short-term and demand debt face the possibility that in any short period the cash outflow will exceed its cash receipts. Those whose liabilities make them particularly vulnerable to cash drains will tend to hold large amounts of cash or readily marketable assets to meet such contingencies. However, once this reserve has been drawn upon, the problem of replenishing it arises.

Some assets of a firm such as its physical plant or loans in bank portfolios--assets that may be called the "position" of that unit--do not lend themselves to the quick generation of cash by sale of the asset. If a unit finds itself in sudden need of cash other sources must be tapped, such as the sale of more generally useful assets or loans. The acquisition of cash to finance the holding of assets that are essential to a business is called "position-making," and the instrument used in this activity is the position-making asset or debt. The asset acquisition and cash management operations of banks, other financial institutions, and ordinary corporations are often separate functions.

Modern commercial banking largely takes the form of lines of credit which the borrower can draw on when the need arises. Thus almost simultaneous with a loan being entered on a bank's books the borrower will draw on it to meet payment commitments. Line-of-credit-banking makes for a clearing loss by the lending bank almost immediately upon the use of a loan. In the case of a Federal Reserve member bank, a deficiency in that bank's deposits at its Federal Reserve bank will appear almost simultaneously with the extension of the loan; the lender bank will lose in the clearings.

Most member banks have executives responsible for seeing that their deposits at the Federal Reserve are kept at the required level. This executive must have the power to generate cash flows in favor of the bank for the power to generate a favorable cash flow is a prerequisite to the acceptance of a short-term debtor's liabilities, be they bank's, firm's, or country's, acting as banker to the world.

Once creditors lose confidence in a debtor's ability to generate a cash flow in the debtor's favor, the creditor will become reluctant to hold that debtor's liabilities. This reluctance in turn will set off a cash drain that

can have a run. A run taxes the debtor's ability to develop a favorable cash flow.

Ultimately a bank's power to make its liabilities accepted rests upon its ability to cut off lending, an action which will force a favorable cash flow as the loans on its books fall due. This, however, is a drastic measure, tantamount to a liquidation of its going business, and has far-reaching consequences for its borrowing customers. A bank therefore needs some position-making instruments which can force a cash flow in its favor when needed without affecting its basic operation--i.e., the short-term financing of business ventures. At the end of World War II, when the commercial banks were saturated with government securities, Treasury Bills served that function.

Unlike the stock market, which is a broker's market, the government security market is a dealer's market, where the dealer actually owns the security he trades, if only for a brief period. In a broker's market the seller acts as a go-between bringing buyer and seller together. He does not own the instrument being traded. A dealer trading in large quantities of Treasury Bills with a sizable inventory is faced with the problem of financing his position. The obvious solution would appear to be loans either from banks or from other organizations holding excess cash. Consequently a market used for position-making is likely to give rise to dealers who buy and sell for their own position and who in turn have to finance their "position." Such a dealer's market will keep the price of a security from fluctuating wildly with supply and demand. It is the existence of the dealer's market that makes a security a good position-making instrument.

Banks, like any other business, seek to make the largest possible profit, consistent with their view of what constitutes an acceptable risk. They make

money by finding ways of increasing the return on their assets while decreasing the cost of their liabilities. A dynamic, innovative, entrepreneurial banking system will constantly seek out new instruments and new types of contractual arrangements. The changes that took place in the postwar period in the position-making instruments are one example of this thrust to innovate.

2. The Evolution of Banks' Position-Making Instruments

The instruments used by commercial banks in making position changed in the course of the postwar period. At the end of the war banks used Treasury Bills; they bought and sold Treasury debts to decrease or increase their cash holdings. Position making took the form of substituting one asset for another.

In the first decade after World War II when dealers in Treasury Bills required cash they turned to commercial banks. Occasionally, however, this avenue was closed to them, furthermore they were not able to borrow directly from the Federal Reserve Bank. For these contingencies a major New York bank, Manufacturers Hanover Trust, withdrew from making normal loans to "bill dealers" and stood ready to lend to them if all other sources of financing were closed. Underlying this arrangement was an implicit understanding with the Federal Reserve Bank of New York that if Manufacturers Hanover developed a reserve deficiency because of these loans to dealers it would have access to the Federal Reserve's discount window. This indirect access to the Federal Reserve via a commercial bank solves the position-making problem of banks when they hold large quantities of government bonds. It obviously would not be equally effective if banks did not use Treasury debt to make position.

If an organization is unable to make position by dealing in assets such as Treasury securities it can do so by borrowing. The Federal Funds market--Federal Funds are deposits at Federal Reserve banks--was the first supplementary position-making market to open to commercial banks in the post-World War II era. By the mid-fifties Federal Funds began to be used as a position-making instrument by some very large and even some smaller banks; by the early 60's the use of Federal Funds had become common practice. The Federal Funds have

remained a major position-making instrument, and the Federal Funds rate, i.e., the interest rate on such deposits--has become a key rate in our economy.

If we assume that the total volume of position-making activity is related to the total volume of financial assets, then banks, if they are to be able to function with a diminished cash and reserves/total assets ratio, must develop a wide range of position-making instruments. Because total bank assets have increased relative to their reserve deposits and vault cash (see Table), banks have had to develop liabilities that could generate a flow of reserve deposits toward the issuing bank even as reserves were being freed throughout the banking system. One reserve-economizing deposit introduced in the early 1960's is the large-denomination certificate of deposit (CD), which, at least in principle, is negotiable. It has since become a favorite "money-buying" instrument of banks. By making available a large amount of comparatively short-term funds, the negotiable certificates of deposit have become a prime source of funds for banks. The mushrooming of CDs allowed credit to expand at a faster rate than the reserve base. These increased time deposits have allowed banks to circumvent some of the restrictions on the growth of their outstanding credit which a constrained increase in its reserves would otherwise have imposed.

Another position making technique used both by government security dealers and commercial banks is the so-called repurchase agreement--the simultaneous sale of an asset, say a packet of government debt instruments, and the commitment to repurchase them at a fixed date, be it the next day, the next week, or whenever. The selling price as well as the repurchase price are contractually fixed. The repurchase price, set by negotiation, does not necessarily reflect the interest rate on the item being traded. A repurchase agreement removes

TABLE

the deposit of the "purchaser" from the base used to determine reserves. If such an agreement is executed with a nondepositor it will shift reserves to the bank, but regardless of whether the party to the agreement is a depositor or not. Furthermore it is a position-making technique that can also be used to circumvent ceilings on interest rates.

Banks also borrow from their foreign branches to make position. In buying dollars abroad (Eurodollars) and transferring them to their United States offices banks can affect the amount of available reserve deposits. If, for example, a foreign branch of an American bank borrows Eurodollars and transfers them to its home office, these funds have either been on deposit in the United States or they are paid for by some other currency, say West German marks. When United States funds are purchased in the Eurodollar market the reserve base has not been increased, but the total dollar amount of deposits against which reserves must be kept has been lowered. If the Eurodollars purchase leads to an exchange of German marks for dollars then the total reserve deposits at the Federal Reserve is increased. In this case the making of position by borrowing Eurodollars increases the reserve base independent of the Federal Reserve action. During the 1970 credit crunch the banks that were able to use their foreign branches as a source of reserves could "evade" the restrictive Federal Reserve policies through methods not available to others. Consequently in the years following many banks opened overseas branches for the express purpose of bettering their position in periods of reserve constraints.

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out of the experience with financial crises in the 19th and early 20th century, when it was universally recognized that there was a need for a lender of last resort. In the early years of the Federal Reserve (before the Great Depression), the discount window furnished a large portion of the normal reserve base of member banks. Since the Great Depression and the postwar era the predominant source of reserves has been the Federal Reserve's ownership of government securities. As a result the income and financial market objectives of the Federal Reserve, which lead to desired changes in bank reserves are now pursued by trading in government securities. Thus, even though the government security portfolio no longer serves as the prime position-making instrument of banks, the Federal Reserve adjusts the reserve base of the banking system by means of the Treasury security market.

Not all banks are members of the Federal Reserve System. Nonmember banks now hold more than 25 percent of all bank assets and keep their cash reserves at other, generally larger, banks that act as their correspondent. For the most part these correspondent banks are Federal Reserve members. Nonmember banks borrow on the Federal Funds market (usually though not necessarily invariably through the member bank at which they keep their cash reserve), and they also sell their excess cash through that same market. By borrowing via their correspondents the nonmember banks may actually cause a minor reserve deficiency at that bank, but the latter can, if necessary, borrow at the Federal Reserve.

The smooth functioning of our banking system is contingent on the availability of money-market position-making instruments. The system that has evolved is complex, in that a bank can juggle its government securities account, Federal Funds position, CDs, repurchase agreements, Eurodollar trades, and Federal

Reserve loans. Such a system is likely to behave much differently from its simple predecessor, in which the Treasury Bill held a monopoly on position-making. In all probability position-making possibilities will continue to evolve. Such innovation in financing practices lead to a flexible relation between Federal Reserve policy and available financing. The greater the variety of alternative position-making methods, the slower the reaction of banks to an easier or tighter Federal Reserve posture. This slower reaction increases the interval between restrictive Federal Reserve measures and the response of banks and financial markets, and thus to lessen the speed with which the economy reacts to monetary policy initiatives. The greater the variety of markets utilized in making position, and the larger the proportion of bank assets acquired through those markets, the greater the likelihood that inept policies will lead to a financial crisis. The internal evolution of the financial system tends to decrease the domain of economic stability over a run of good years.

What happens to banks and the markets in which they trade reserves is only one side of the financing picture. When banks issue CDs or enter into repurchase agreements with other economic units these liabilities become substitutes for time or demand deposits in the holder's portfolio. The willingness of nonbanks to hold such assets increases the banking system's ability to finance activity. The very developments that stimulate the rapid growth of demand for bank financing make for an increase in the availability of short-term financing. This tends to make the financial system increasingly fragile.

3. Sectoral Data During the Postwar Period

Despite minor inflationary flurries the first twenty postwar years were a time of financial tranquility. But the middle of the 1960's ushered in an era of accelerating price increases; inflation and unemployment began to pose a real threat. Why this sudden change in economic behavior? Part of the answer may be found in the financial data of the three dominant economic sectors--nonfinancial corporations, households, and commercial banking. The balance sheets that make up the financial system are interrelated, and so the trends found in the household and business sectors are reflected in the trends found in the balance sheets of the commercial banks.

Both financial decisions and investments are made today with an eye on tomorrow. Because they deal with the vagaries of future costs and outputs, both are of necessity based on today's uncertain feelings about the future.

The capital assets used in production must be financed, and the decision about what combination of instruments is best suited depends on the structure of the financial system and perceptions about what the future holds in store. While technology may circumscribe the choices about production, financial choices are not constrained by any such limitations. Sudden shifts in views about what makes for an acceptable financial structure can and do occur. For many years the Great Depression colored the view about what constitutes a desirable liability structure. In the 1930's it was a widely held belief that banks were institutions that lent money only to those who did not need it. In other words, both borrowers and lenders were risk-averse. The postwar prosperity initially was viewed as a transitory phenomenon, and (potential) borrowers as well as lenders shrank from a heavy reliance on debt-financing. On the other hand,

the balance sheets of households, business, and financial institutions showed a much larger proportion of government debt and a much smaller amount of private debt than heretofore (see Table). The government's safe financial assets predominated in the balance sheets of the major economic sectors.

Between 1950 and 1974 government debt decreased relative to total debt, while the corporate debt/total debt ratio rose. State and local debt as a percentage of total debt continued to climb until 1960, and subsequently stabilized at about 7.4-8 percent of total net debt. The indebtedness of individuals and noncorporate businesses and outstanding mortgages showed a similar sharp rise between 1946 and the mid-sixties. The growth pattern of noncorporate private debt relative to total debt obviously changed in the early sixties, when household and noncorporate debt seemed to reach a plateau (see Tables).

Throughout the postwar period the ratio of government debt to GNP has shown a downward trend, and the corporate debt/GNP ratio has continued to rise. Both state and local government debt as well as individual and noncorporate business debt manifested a rising trend between 1946 and 1965; since then these sectors have moved within narrow limits.

The tapering off of state, local, and households indebtedness as the ratio of federal debt decreased and that of corporate debt rose coincided with the growing financial instability. The significant changes that took place in the mid-sixties can be traced in a series of charts for the various sectors, although these offer only a portion of the total picture (see Charts). Four of them deal with nonfinancial corporations and business firms, two with households, and four with commercial banks.

TABLE

CHART

As we can see from Chart 1, between 1950 and 1965 the corporate sector became increasingly dependent on internal financing as far as fixed investment was concerned. This trend was rudely interrupted in the mid-sixties. Since that time a growing proportion of fixed investment came to rely on external financing, which would seem to indicate that as corporations began to exhibit a greater desire to invest, our sophisticated financial system was able to accommodate that yearning. If nothing else, this chart points up the futility of the type of theorizing that transforms statistical data into universal truths without examining the underlying conditions.

Chart 2, which deals with the ratio of liabilities to gross internal funds, indicates, however crudely, the relationship of corporate cash payment commitments to a measure of the validating cash flows. No trend was discernible until the mid-sixties, when a strong upward movement set in. Obviously the cash flow from their operations now provide corporations with a substantially smaller cover for debt than was the case earlier.

Chart 3 deals with the cash assets relative to liabilities shown on corporate balance sheets. Other liquid-asset indicators, such as the ratio of liabilities to no-default assets, show the same upward trend; however, as we can see, the rate of growth increased in the late fifties and possibly again around 1970.

Chart 4 shows a measure of the liability structure of corporations. The ratio of open-market paper plus borrowings from finance companies to total liabilities is indicative of the attraction exotic financing holds for corporations. And though this constitutes only a minor portion of total corporate liabilities it is a substantially richer source of funds than was the case twenty years earlier. The reliance on this type of financing apparently increased first around 1960 and then again in 1969-70. The second jump possibly

CHART

reflects a feeling that the Federal Reserve's handling of the 1969-70 crunch--extending its protection to these markets--made such corporate liabilities safer than they had been in the past.

Charts 5 and 6 depict two indicators of the financial development of households. The ratio of household liabilities to disposable income rose between 1950 and 1965 and has remained fairly stable since. The ratio of liabilities to demand deposits and currency shows a similar pattern--a relatively steady upward trend for about the first fifteen years, followed by a leveling off. In terms of the simple measures used here the household financial picture appears to have stabilized over the past decade; however, if the liabilities had been adjusted to the rising interest rates during that period the upward trend would have continued.

Charts 7 through 10 show some aspects of the financial relations of commercial banking. According to Chart 7, the ratio of financial net worth to total liabilities moved upward between 1950 and 1960, when it began to decline steeply. Equity protection, as conventionally measured, where the value of assets is not adjusted to allow for increases in the interest rate, fell sharply. Were such revaluations made, the ratios shown here would shrink considerably. Also, these ratios are large compared with those for the giant bank holding companies. Overall, the capital adequacy of banks by any measure has fallen sharply in the course of the past 15 years.

As we can see from Chart 8, the ratio of total liabilities to protected assets--i.e., assets whose market value will be protected by Federal Reserve intervention--increased slowly between 1950 and 1963, and more rapidly since that time. Chart 9 shows the ratio of demand deposits to total liabilities, which manifested a downward trend throughout the entire period; in 1960 this

CHART

rate of decline accelerated, largely because of the introduction of negotiable CDs. The ratio of bought funds (nondeposit funds plus large negotiable CDs) to total liabilities is given in Chart 10. This relationship remained fairly stable until 1962 or so, when a steep upward rise set in.

The above survey of financial data indicates that the speculative element in finance has increased. For this reason, and because other sectors of the economy have undergone similar changes, the financial system today is far less robust than in the past.

The changes in the behavior of our financial system that began in the early 1960's (indicated by a vertical line in the graphs) have speeded up the trend toward financial fragility. In the early sixties our postwar economy underwent a far-reaching change. Fringe banking institutions and practices, such as business lending by finance companies and commercial paper issued by corporations, REITs, and nonmember commercial banks, have increased at a faster pace than other parts of the financial structure. With this proliferation member banks, and particularly the huge money-market banks, through formal lines of credit accommodation, have become de facto lenders of last resort to such institutions. What we now have is a system in which the Federal Reserve is the lender of last resort to giant commercial banks, and they in turn act as lender of last resort to fringe banking institutions. As the REIT crisis of 1974 showed, the hierarchical model of the National Banking System (1863-1913) has in effect been reinstated.

Hierarchical banking relations can weaken the financial system. Fringe banking institutions draw upon their lines of credit when other channels become either too expensive or unavailable for a variety of reasons, among them doubts

CHART

about the lender's reliability or a perceived weakness of his asset structure. Thus when banks become residual lenders they are refinancing institutions which the market considers weak, and consequently their assets may be weakened by the weak portfolios of their borrowers. Furthermore, such bail outs are likely to have a cumulative effect. Financial fragility can be both progressive and contagious and the hierarchical financial structure that has emerged facilitates both the progress and the contagion.

The pattern that has developed obviously contains the potential for serious economic disruption. The introduction of additional layering in finance and of new credit instruments is still further evidence of the ever greater fragility of our financial system.

The story told by the charts reflects the way in which financial resources are mobilized to finance investment in times of expansion. The changes in the balance sheets of the various sectors reflect financing through the activation of previously untapped liquidity sources, pools which tend to lend robustness to the financial system. However, underlying the greater reliance on debt financing of investment and positions in capital assets is a belief that the income of business, households, and state and local government will continue to grow and that the cash needed to meet financial obligations will also continue to flow. But once expectations of limitless growth are dampened, an inherited debt structure can become an intolerable burden. When the financial structure approaches and remains near the limit of the acceptable capital accumulation, the financial operations of the economy become a matter of fits and starts, of crises and rescue operations. That is what began to happen in the mid-sixties and has continued to this day.

The Credit Crunch of 1966

The credit crunch of 1966 was the first financial disturbance since the 1930's that involved a run on financial institutions or instruments that required special action by the Federal Reserve. The intervening years had seen traumatic incidents that sporadically involved the Federal Reserve, but the 1966 affair was a true lender-of-last-resort operation in response to a systemic flaw. An entire market rather than an individual unit was endangered. The 1966 crunch was a normal product of the uninterrupted economic expansion that had begun in early 1961 within the framework of a postwar period that had not experienced a significant recession. It would seem that under capitalism a protracted period of well-being leads first to an investment boom followed by financial crisis.

A crunch or financial crisis is the result of the erosion of the margins of safety in portfolios. In the robust postwar market most bank portfolios contained more Treasury securities than were needed to satisfy the collateral requirements of the various government deposits. As long as that condition obtained the banks met their cash needs by trading in these securities. In those early postwar years a bank's major problem was the management of its assets--its loans and investments. By the late fifties the very largest banks in the major money centers--New York, Chicago, etc.--had exhausted their excess Treasury debt, and began to borrow funds from banks with excess deposits in Federal Reserve banks. This Federal Funds market, in which banks trade reserve funds, had been very active prior to 1929 but had all but disappeared in the interim. By using Federal Funds to make position the borrowing banks increased their liabilities.

This trading in Federal Funds was only the first step in the transformation of banking into a system in which operation on the liability side became the prime method of making position. During the 1960's the introduction and rapid growth of negotiable certificates of deposit allowed banks to increase their loan activities more rapidly than their reserve base. Although in terms of the reserve base and money supply (demand deposits and currency) growth rate the Federal Reserve was pursuing a rather moderate course, the more rapid growth of bank lending stimulated inflation. And even though the Federal Reserve kept on feeding reserves into the banking system, demand for bank loans continued to outstrip the money supply. Changes in banking practices allowed bank loans to increase at a more rapid rate than reserves, and there was a parallel increase in short-term financing outside of normal banking channels. The heavy demand drove up interest rates, and the increased demand for corporate investment, especially externally financed investment, meant that prices rose as well.

The Federal Reserve loves to fight inflation, which comes as rather a surprise considering its record. During the 1966 investment boom the Federal Reserve continued to slow down the growth rate of the reserve base, from 6.8 percent in December 1965-April 1966 to 2.6 percent in April 1966-July 1967, and to -4.3 percent in July-December 1966, successfully decreasing the funds available to banks to meet their interbank payment obligations and to make position.

Once under way, an investment boom cannot simply be turned off. The financing of projects in progress must continue. Any effort by the Federal Reserve in that direction will bring about a sharp rise in interest rates, since the projects in question will continue to need financing as work continues. The Federal Reserve's action to decrease the reserve base in the latter part of 1966, coupled with the investment boom, brought on a sharp rise in money-market

interest rates and in bank prime rates. The Federal Reserve allowed banks to raise their interest rate on CDs, yet these revised rates were still below the market rates on commercial paper and Treasury debt. The upshot was that holders of large CDs allowed them to run out, putting bank liabilities under pressure. Toward the end of June 1966 the price of large CDs carrying the ceiling rate of interest was discounted, putting an effective stop to the further issuance of these instruments. In August the amount outstanding fell precipitously, a development tantamount to a run on the large commercial banks with loan commitments to business. These runs, the six-month decline in the reserve base, and the loan commitments sent the banks scurrying for more funds. Two of the steps taken by them reverberated in other parts of the financial system. Some New York City banks, with Franklin National in the lead, began to offer smaller-denomination CDs, thus spreading the benefit of high interest rates--substantially higher than the rates permitted to savings institutions among a greater number of people.

The alternative to replacing a liability that is running off with another one is to sell assets. As the banks did not hold large amounts of Treasury instruments, they began to sell off the tax-exempt state and local government securities they were holding, and stopped bidding on new issues. By the end of August the municipal bond market was in shambles, despite a 5 percent yield on high-trade, tax-exempt issues. Throughout this entire period the Federal Reserve maintained a nominal 4.5 percent rediscount rate and allowed an increase of only some \$330 million in borrowings at its discount window, thereby effectively closing off that source to the money-market banks. By the end of August the disorganization of the municipal bond markets, the rumors about the solvency

and liquidity of savings institutions, and the banks' frantic scramble to make position was approaching panic. Prompt action clearly was indicated. On September 1, the presidents of each of the twelve Federal Reserve Banks sent identical letters to every one of their member banks advising them that the discount window was open to them if their policies were in accord with its, the Federal Reserve's, objectives. In particular, they offered to help in the financing of the municipal securities held by banks that had actively sought to stem their flow of business loans even before the run on CDs had begun. The tightly shut discount window was temporarily opened.

By recognizing the disequilibrating forces at work in the financial markets and by making Federal Reserve refinancing accessible, the Federal Reserve was acting as lender of last resort. It worked: the pressure on the CDs let up; Congress passed a law allowing the Federal Reserve to vary the interest ceilings on CDs in accordance with their size, and the FDIC and Federal Home Loan Bank Board were authorized to set ceilings and differential interest rates for their areas of jurisdiction.

Under the revised rules retail CDs (in denominations of less than \$100,000) offered lower interest rates than wholesale certificates. The institutions involved in the financing of the housing market were in part insulated against pressures from the money market, although this shield did not prevent a steady rise in mortgage interest rates in the ensuing years.

Between the last quarter of 1966 and second quarter of 1967 gross private investment decreased at an annual rate of 26 percent. But aggregate income did not show a similar decline, since Vietnam war expenditures began to increase just as civilian spending was beginning to taper off. The slump in private investment obviated the necessity for a tax increase to help finance that war.

The crunch of 1966, the first serious financial disruption of the postwar era, did not occasion any probing analysis or reform of the financial system. Instead, the problem was papered over; cosmetic changes were made to allow the interest rate ceilings to vary with the size of the deposit. Effective fiscal policy measures, inadvertent though they were, prevented a recession.

It would seem that the events of 1966 assured the money market that the Federal Reserve would protect banks using money-market instruments such as negotiable CDs against a possible run. By its action the Federal Reserve not only legitimized the use of such negotiable instruments by banks but opened the door to liability management banking. If the Federal Reserve offers protection by way of its discount window, banks can fall back on liability juggling to make position.

The Liquidity Squeeze of 1970

1970 witnessed the second postwar financial disturbance in which the Federal Reserve intervened as lender of last resort. This time the commercial paper market found itself in trouble. The Federal Reserve's intervention took two forms: it opened the discount window to allow the banks to acquire funds to refinance commercial paper, and it encouraged banks to form syndicates to carry out this refinancing.

In the early sixties the negotiable CDs were the wonder instrument that financed expansion; by the end of that decade commercial paper had taken over that role. Commercial paper is the unsecured note of a business corporation issued for a specified period--say 90 or 180 days--and sold to some holder. Large finance companies such as the General Motors Acceptance Corporation sell their own issues; others sell theirs through dealers.

This miracle instrument turned out to be a critical factor when the crunch developed. At the beginning of 1966 about \$10 billion of commercial paper was outstanding. By mid-1968 this figure was doubled, and by the end of May 1970 it had climbed to \$32 billion. In early 1969, when the Nixon administration took office, the unemployment rate stood at about 3.5 percent. The consumer price index had increased by 4.2 percent in 1968; corporate purchases of physical assets had increased by 5 percent over the previous year and were continuing to increase at an accelerated pace. Yet because the internal funds of the corporate sector remained more or less static, somewhere in the neighborhood of \$60 billion, net external financing increased, from \$9.9 billion in 1967 to \$23 billion in 1969. Between 1967 and 1969 the percentage of corporate investment in physical assets financed by external funds rose from 13.9 percent to 27.5 percent.

In the midst of this explosion of external financing the Federal Reserve and the new administration decided to fight inflation by monetary policy. The result was a decline in the growth of bank credit, from about 10 percent in 1968 to 5 percent in the first half of 1969 to 3 percent by early 1970. This slowdown brought a rise in the sensitive Federal Funds interest rate from 6 percent at the end of 1968 to 9 percent by mid-1969, and it hovered at this level until early 1970, when it began to go down. Other interest rates rose as well: the conventional mortgage rate hit 9 percent in early 1970 and stayed at slightly above that level throughout the year. And with high interest rates came a decline in the stock market.

Amid this setting of rising interest rates and declining stock prices the Penn-Central Railroad triggered a run on the commercial paper market by

defaulting on some \$82 million in outstanding commercial paper. The Federal Reserve Bank of New York and the Federal Reserve Board of Governors took an active part in putting together a syndicate of large commercial banks to help refinance a major automobile finance company (Chrysler) which found it could not sell commercial paper. In July, member-bank borrowings at the Federal Reserve's discount window rose by \$500 million, and the Federal Reserve pumped reserve funds into the banking system through open-market operations.

By its actions in 1970 the Federal Reserve extended implicit protection to the commercial-paper market. In subsequent years it became standard procedure for the borrower on commercial paper to have sufficient lines of credit at banks to repay all of his outstanding commercial paper. In this way commercial paper became a form of bank credit once removed: the Federal Reserve acted as the lender of last resort to the commercial banks, and the banks became the residual or fall-back lenders to the commercial-paper market.

With the formalization of this practice commercial banks became the holders of both overt and covert liabilities; outstanding commercial paper was a covert liability, though this effective increase in bank liabilities did not show up in bank credit data. The substitution of lines of credit for bank credit and the lack of control over these covert liabilities meant that an uncontrolled, market-determined component had been added to the effective money supply.

Other than institutionalizing the covering of outstanding commercial paper through open lines of credit, the squeeze of 1969-70, which led to a bona fide recession, initiated no banking reforms. By the fourth quarter of 1970 the GNP deflator had risen to 6 percent and at year's end unemployment also reached 6 percent. This 6 percent inflation/unemployment rate marked the emergence of Stagflation--high unemployment coupled with rising prices--and a characteristic

of our economy. The developments of this period strongly suggest that past patterns of economic behavior no longer obtained.

Only the prompt lender-of-last-resort intervention by the Federal Reserve and the massive government deficits of 1970, 1971, and 1972 prevented the serious recession set off by the 1969-70 crisis in the commercial paper market from worsening. Moreover, the rapid increase in corporate cash flows in the subsequent years set the stage for yet another round of external financing.

Monetary restraints to control inflation obviously did not work very well. The policy makers thought that restraining the money supply would curb business and household spending and affect the aggregate demand that had caused inflation. But demand does not respond immediately to changes in monetary policy. The effects are felt first in the prices, financing terms, and refinancing conditions of financial instruments. In a world of borrowing and lending, monetary constraint adopted to halt "inflation" tends to lead to sharp changes in the financial markets while income, employment, and prices continue their upward climb. Monetary restraint as an anti-inflationary measure did not work in 1969-70 because it brought the threat of financial crisis before demand was seriously affected. It would appear as though the prescribed cure for inflation brings with it the danger of depression, and the Federal Reserve policies designed to ward off depressions, coupled with the cash-flow effects of big government in time of recession, set the stage for yet another burst of inflation.

The Financial Traumas of 1974, 1975...

In the world of Establishment economists and central bankers seemingly nothing succeeds like failure. The barely perceptible success of monetary

restraints adopted to halt inflation in 1966 and 1970, and their effectiveness in triggering financial traumas that threatened to trigger a deep depression apparently assured their use as a weapon of choice in 1973-74.

In late 1972, an explosive growth of external financing drove up market interest rates. In addition, the administration's abrupt lifting of controls in early 1973 added inflation as yet another factor stripping units of their liquid asset margins of safety. And the investment boom of 1972 and 1973 was helped along by yet another miracle child--the Real Estate Investment Trust--an innovative financial instrument that helped finance this boom largely by short-term borrowing born on the open market through commercial paper and from banks.

The high interest rates, the result of runaway, inelastic demand for financing by units engaged in large-scale investment projects combined with monetary constraint, in 1973-74 created grave problems for financial institutions dependent upon refinancing. The most significant aspect of the events of 1974-75 was the fact that they conformed to the pattern set in 1966 and 1969-70. The episodes of instability--the bankruptcy of the REITs, the failure of banks--culminated in Federal Reserve intervention. In every instance the Federal Reserve, acting as lender of last resort, succeeded in staving off a threat of financial crisis, and big government, backing up the Federal Reserve by maintaining income, generated conditions conducive to profits and helped channel secure financial instruments into portfolios.

The Lessons Taught by the Runs

All the runs between 1966 and 1975--the CDs, the commercial-paper market, the banks--involved instruments or institutions that had grown explosively

during a boom, and in every single case the Federal Reserve by its intervention warded off disaster and legitimized that new instrument or institution. And thus in the aftermath of these disasters no serious effort at reform was taken. The overseas operations of domestic banks were not touched, nor has anything been done to prevent the surfacing of financial institutions whose activities are based on covert bank liabilities. In protecting and hence legitimizing an endangered financial instrument, the Federal Reserve not only helps ward off crisis, it also sets the stage for the resurgence of the type of financing that triggers investment booms. Big government, by sustaining aggregate demand, protecting corporate profits and putting secure assets into portfolios, is conducive to the reemergence of investment booms with amplified demand for financing.

We thus seem to foster a system that feeds instability. While it prevents the periodic depressions of the past we now have recurrent threats of crisis and depressions plus chronic inflation. The successful prevention of deep depression may be an improvement over the past, but that is small consolation in our increasingly unstable economy.