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HYMAN P. MINSKY

## *Financial Resources in a Fragile Financial Environment*

*Since the mid-1960s, an increasingly delicate financial structure, inept policy and rising interest rates have repeatedly brought us to the edge of a cumulative debt-deflation.*

The cycle and growth characteristics of the American economy since the mid-1960s differ significantly from the experience of the first two decades after World War II. These differences are due to the fragility of the financial system, which emerged as a dominant factor in finance in the mid-1960s, and the response of monetary and fiscal policies to the threats of financial crises and serious depression that exist in a regime of fragile finance. The combination of a fragile financial environment and inept policy during the past decade has resulted in the oscillation of the economy between accelerating inflation and threats of financial crisis and debt-deflation. This dismal pattern means that we need new approaches to stabilization policy as well as reforms in financial arrangements. Before we can prescribe a cure, however, we have to understand the disease.

### *Robust and fragile financial structures*

Financial relations are major determinants of the behavior of a capitalist economy. To understand how financial relations affect income and employment in our economy, it is necessary to distinguish between robust and fragile financial structures. The financial structure consists of interrelated balance sheets. The financial instruments in these balance sheets can be viewed as commitments to pay cash upon demand, at particular dates, or upon the occurrence of specified contingencies. These balance sheet cash payment commitments are on account of both principal and interest; short-term debt involves a greater commitment to pay cash than long-term debt of the same face value.

For all operating units except national states with

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respect to internally held national debts—i.e., for households, businesses, and state and local governments—the ability to meet payment commitments ultimately rests upon cash flows from operations: the excess of disposable income over current budget needs for households, some variant of gross profits after taxes for businesses, and the excess of tax and transfer receipts over current expenses for state and local governments. We call such cash flows income or operating cash flows.

For strictly financial units, such as banks and real estate investment trusts (REITs), the equivalent to the cash flow from operations is the cash received as the terms of contracts owned are fulfilled by the debtor.

In addition to cash flows from operations, units obtain cash to meet payment commitments by (1) having cash on hand; (2) disposing of financial assets that are superfluous to operations; and (3) borrowing. Obtaining cash in any of these ways involves changes in portfolios.

We therefore distinguish among balance sheet, income, and portfolio cash flows. Ultimately the success of a debt structure depends upon income cash flows. These, in turn, depend upon prices and operating costs being such that revenues from business operations, employment, or state and local taxes exceed, or are expected to exceed, current expenses by a margin that is large enough to satisfy both contractual commitments and the felt need for protection by lenders. The worth of utility bonds is being questioned now because investors doubt whether market prices and quantities will generate sufficient income in excess of current operating costs to satisfy the contractual payment commitments. REITs are in trouble because anticipated cash flows fall short of what is needed to validate debts; New York City bonds are hard to market because, given the receipt expectations of the city and the costs of city services, it is difficult to foresee a current surplus large enough to validate the outstanding debt, let alone any new debt required by current deficits.

Because the validation for all but national government debt depends upon current and expected prices and costs, there are strong linkages between the price system and the financial system. Since the quantity theory of money and standard macroeconomic models only specify weak links between the two, they miss the point about how our economy works, and thus these standard theories are a poor guide to policy

in those circumstances in which financial factors are major determinants of system behavior.

A financial system is robust when debt servicing can be readily satisfied by income cash flows and when portfolios contain sufficient cash and marketable financial assets not required by operations to absorb temporary shortfalls in cash receipts. A financial system evolves toward fragility as the cash flows on liabilities increase relative to the cash receipts available for validating debt and as units are stripped of liquid assets.

### *Hedge, speculative, and "Ponzi" finance*

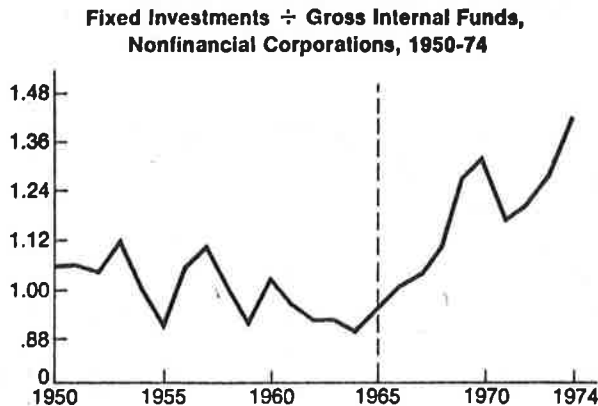
Fundamental to the distinction between robust and fragile financial structures is the distinction among hedge, speculative, and "Ponzi" finance by economic units. A unit engages in hedge finance when the cash flow from operations exceeds the cash payments due on contracts; a household mortgage is an example. A unit engages in speculative finance when the cash flow from operations falls short of the payment commitments on contracts, although cash flow from operations exceeds the interest charges. Speculative finance occurs when term to maturity of liabilities is short relative to asset life; banks normally engage in speculative finance, as do corporations that have a floating debt in the form of bank loans and commercial paper. A unit engages in "Ponzi" finance when interest charges on outstanding debt exceed cash flows from operations. Units that are constructing facilities with long gestation periods or whose cash flow from operations or contracts falls short of anticipations are engaged in "Ponzi" finance. New York City is obviously playing a "Ponzi" game, as do those REITs which borrow to pay dividends that are based upon interest accruals.

### *Indicators of financial robustness/fragility*

The relative robustness/fragility of the financial structure is determined by the proportion of units that are engaged in hedge, speculative, and "Ponzi" finance; the greater the proportion engaged in hedge finance, the more robust the financial system. Because information of detailed financial practices needs to be integrated into a system perspective, the aggregate flow of funds data on liabilities and cash flows can be interpreted so as to indicate the hedge-speculative finance dimensions of the economy.

Additional indicators of the robustness/fragility

Chart 1



of the financial structure, beyond that given by the cash flow relations, are the ratio of cash or near cash to liabilities and the ratio of "exotic" or short-term liabilities to total liabilities. These measures show which shortfalls of cash flows can be absorbed without affecting operations and whether runs can occur on the sector's liabilities, perhaps through some weakness of the lender or some disruption of financial markets.

### *The transition from robustness to fragility*

Indicators of the relative robustness and fragility of the financial structure can be derived from the flow of funds accounts. Charts 1 through 4 present measures on the nonfinancial corporate sector, Charts 5 and 6 deal with households, and Charts 7 through 10 deal with commercial banking.

The first chart shows the ratio of corporate investment in fixed plant and equipment to internal funds. Whereas in the first fifteen years charted this measure fluctuated around 1 so that corporate surpluses offset deficits, in the past decade this measure has always exceeded 1, and this ratio has trended upward, i.e., each year since 1965 the corporate sector ran a deficit, and these deficits have tended to increase. In the past decade a growing portion of fixed investment has been externally financed. This indicates that, as the desire by corporations to invest increased, because the economy did well and because incentives to investment—such as the investment tax credit and accelerated depreciation—were intruded into the tax system, our sophisticated financial system accommodated the demand for finance.

Chart 2 shows the ratio of liabilities to gross in-

Chart 2



ternal funds, which is an indicator, albeit crude, of the cash payment commitments of corporations, relative to a measure of the validating cash flows. The indicator as presented is very conservative, since it does not allow for the increased proportion of short-term debt in liability structures and for the rise in interest rates. Even so, the ratio showed no discernible trend until the middle of the 1960s; in the past decade this ratio has shown a strong upward trend. It is obvious that the cash flows from operations of corporations now provide a substantially smaller cover to debt than was true a decade ago.

Chart 3 is an indicator of the cash assets that corporations have in their balance sheets: other liquid asset indicators such as the ratio of liabilities to non-default assets show the same trends. The ratio of liabilities to demand deposits has trended upward throughout this period; however, as is indicated by the vertical line, the rate of growth increased in the late sixties and perhaps again around 1970.

Chart 3

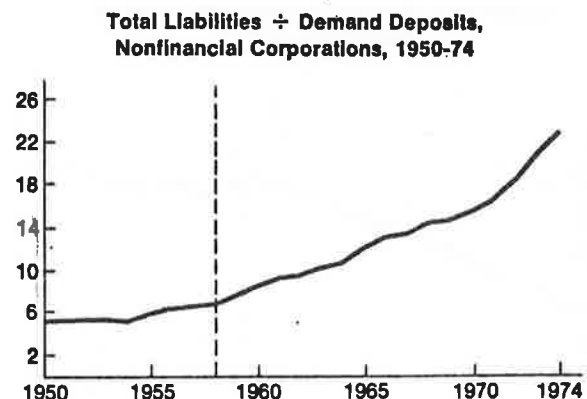
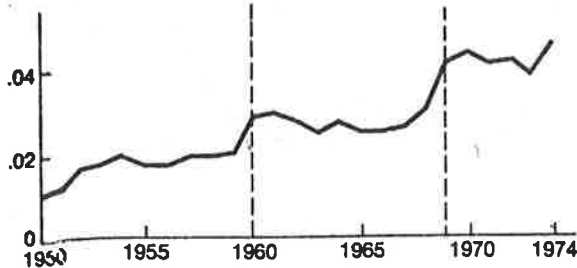


Chart 4

Open Market Paper and Borrowings from Finance Companies ÷ Total Liabilities, Nonfinancial Corporations, 1950-74

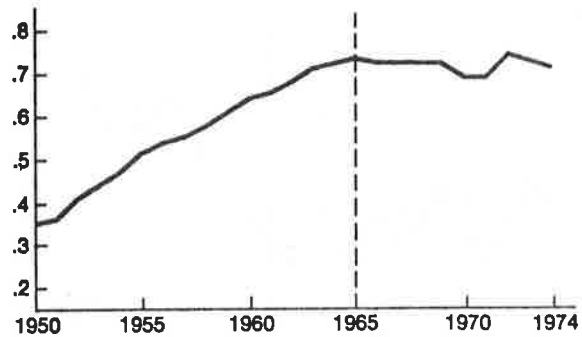


In Chart 4 one measure of the liability structure of corporations is exhibited. The ratio of open market paper plus borrowings from finance companies to total liabilities indicates the recourse to exotic financing by corporations. These are a minor portion of total corporate liabilities; however, it is clear that they now provide substantially more funds than twenty years ago. The dependence on exotic finance apparently has increased in two steps—the first around 1960 and the second around 1969-70.

Charts 5 and 6 give two indicators of the financial development of households. The ratio of household liabilities to disposable income (Chart 5) rose from about .35 in 1950 to .74 in 1965—and since 1965 this ratio has remained in the neighborhood of .69 to .74, with no perceptible trend. A similar pattern is shown by the ratio of liabilities to demand deposits and currency (Chart 6)—a relatively smooth upward trend for roughly the first fifteen years, during

Chart 5

Liabilities ÷ Disposable Personal Income, Households, 1950-74



which this ratio rose from about 1.2 to 3.7, and a decade in which the ratio has been between 3.6 and 4.0. In terms of the simple measures used here, the household financial picture seemingly has stabilized over the past decade; however, if we had adjusted the liabilities for rising interest rates over the past decade, the upward trend would have continued throughout that period.

In Charts 7 through 10, some financial relations for commercial banking are exhibited. In Chart 7, the ratio of financial net worth to total liabilities is shown. Between 1950 and 1960 this ratio trended upward from the neighborhood of .074 to .086; in the years since 1960 it has fallen to .056. The equity protection as conventionally measured in commercial banking, where assets are not revalued to allow for interest rate increases, has fallen sharply. We know that the aggregate ratios exhibited here would be cut sharply if such revaluations were made. Fur-

Chart 6

Liabilities ÷ Demand Deposits and Currency, Households, 1950-74

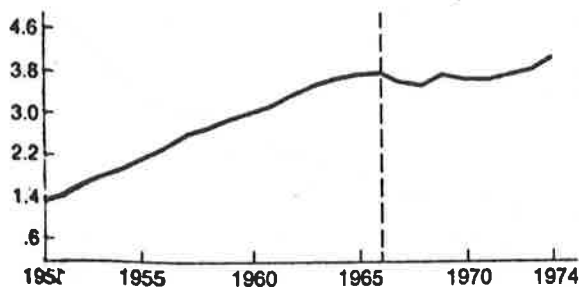


Chart 7

Financial Net Worth ÷ Total Liabilities, Commercial Banking, 1950-74

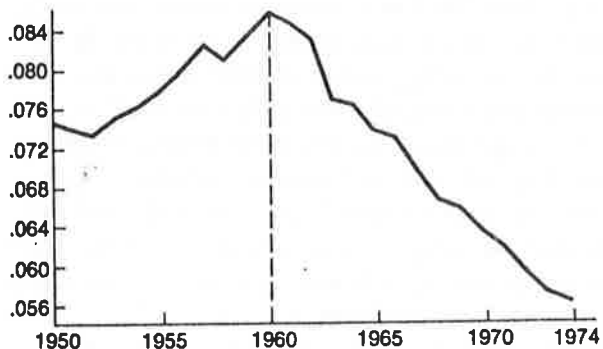


Chart 8

**Total Liabilities ÷ Protected Assets,  
Commercial Banking, 1950-74**

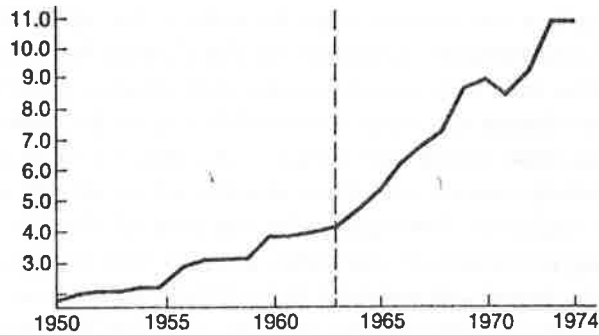


Chart 9

**Demand Deposits ÷ Total Liabilities,  
Commercial Banking, 1950-74**

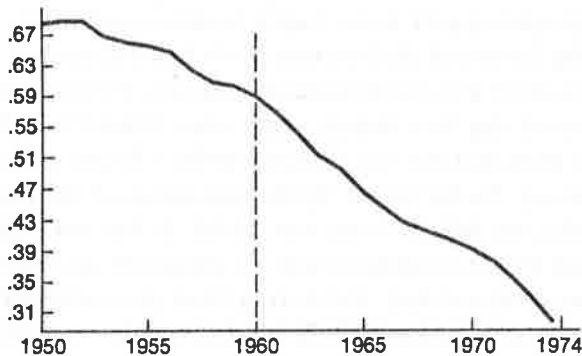
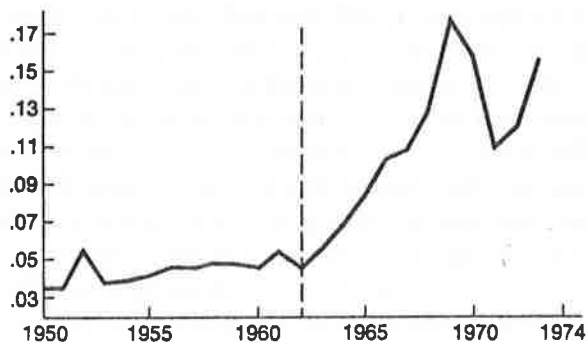


Chart 10

**Bought Funds ÷ Total Liabilities,  
Commercial Banking, 1950-74**



Source for charts one through ten: Underlying data from Board of Governors, Federal Reserve System *Flow-of-Funds Accounts*.

thermore, the ratios shown are large compared with similar ratios for the giant bank holding companies. The capital adequacy of banks, either as measured here or revised to allow for asset revaluations, has fallen sharply over the past decade and a half.

In Chart 8, the ratio of total liabilities to protected assets (i.e., assets whose market value will be protected by Federal Reserve intervention) is shown; this ratio increased slowly from about 3.0 in 1950 to 5.2 in 1963; since 1963 the rate of increase has accelerated, so that by 1974 this ratio was around 11.9. In Chart 9, the ratio of demand deposits to total liabilities is given; this ratio has trended downward throughout the entire period; however, once again a break occurred in the neighborhood of 1960 which increased the rate of decline. We can explain this change in trend by the introduction of the negotiable certificates of deposit (CDs). Chart 10 shows the ratio of bought funds (nondeposit funds plus large negotiable CDs) to total liabilities. This ratio was in the neighborhood of .05 until 1962 or so, at which time it exploded upward, reaching a high of .18 in 1969 and standing at .16 in 1974.

The above is but a sampling of the data available on financial changes over the past decades, which indicate that the speculative element in finance has increased. As a result of these and similar changes for other sectors of the economy, the financial system is much less robust now than hitherto.

In the charts, a vertical dashed line is drawn at those dates at which a change in trend or a change in the mode of behavior took place. It is my hypothesis that these changes indicate that in the early 1960s the mode of behavior of the financial system underwent significant changes and that these changes tended to accelerate the trend toward fragile finance. The economy since the early 1960s is different than it was in the first fifteen years of the postwar era.

### *Fringe banking and financial fragility*

In addition to the changing financial structure of major sectors, suggested by the indicators discussed above, institutional changes, which increase the layering of financial claims, also contribute to the fragility of the financial structure. There is no need to document with data what is well known. Over the past fifteen years, fringe banking institutions and practices—such as business lending by finance companies and the issue of commercial paper by corpo-

rations, REITs, and nonmember commercial banks—have grown relative to other elements in the financial system.

With the growth of fringe banking institutions, member banks—and especially the large money market banks—have become *de facto* lenders of last resort to these institutions through relations that are formalized by lines of credit. We now have a system in which the Federal Reserve is the lender of last resort to giant commercial banks, and giant commercial banks are the lenders of last resort to fringe banking institutions. The hierarchical model of the National Banking System (1863-1913) has been brought into being again.

Hierarchical banking relations can be a source of weakness for the financial system. Fringe banking institutions draw upon their lines of credit at the core banks when alternative financing channels become either expensive or unusable due to market disruption, such as occurs when doubt arises about the validity of payment commitments by fringe institutions because of some perceived weakness in their asset structure. For example, the underlying weakness in speculative construction is a factor that currently makes REIT commercial paper unmarketable. Thus, when banks act as residual lenders they typically are refinancing institutions which the market views as weak. Inasmuch as banks hold assets that are similar to those in the portfolios of fringe institutions, some assets held by these backup banks have also weakened when the weakness of the portfolios of the fringe institutions became apparent in the market. Thus, already weakened portfolios of some banks are made even weaker when these banks act as a lender of last resort to fringe institutions by allowing the fringe institutions to use their lines of credit. Furthermore, if we run through a succession of such episodes in which giant money market banks bail out fringe banks, a cumulative weakening of the giant banks is likely to occur. Financial fragility is likely to be both a progressive and a contagious disease, and our hierarchical financial structure facilitates the spread of the disease.

Thus the potential for seriously disruptive domino effects is implicit in the hierarchical pattern that has developed. The introduction of additional layering in finance, together with the invention of new instruments designed to create credit by tapping pools of liquidity, is evidence, beyond that revealed by the data on financial stocks and flows, of the increasing

fragility of the financial system.

### *Fragile finance and the business cycle*

In a fragile financial structure, feedbacks from the rising interest rates of a boom, even in the absence of overt monetary constraint by the Federal Reserve System, lead to financial crunches and crashes, which in turn threaten to trigger a cumulative debt-deflation. Three times in the past decade—in 1966, 1970, and currently—near-crises have threatened to set off a debt-deflation. Intervention by the Federal Reserve, acting as a lender of last resort, aborted these threats. In the process of averting debt-deflations, however, the Federal Reserve fed reserves into the banking system and validated those particular financial usages that were the focal point of the threatened crisis. In this manner the Federal Reserve set the stage for the financing of an inflationary expansion, once the threat of a financial crisis abated. However, this success in aborting a serious depression meant that the trend toward ever more fragile finance continued.

The nature of the business cycle has changed as a result of the increased financial fragility. The business cycles of the first twenty years after World War II were mild and did not threaten serious financial dislocations. Furthermore, by the standards of the past decade, the inflation rate was trivial. It was over this period that the standard rules for monetary and fiscal policy were codified, and during these years standard policy was sufficient to help achieve a rather successful performance for the economy.

Beginning with the crunch of 1966, the business cycles—even during a growth recession such as the one in 1967—have contained both threats of serious financial disturbances and, in the expansion phase, accelerating inflation. The standard policy prescriptions for moderating inflation and sustaining employment do not seem to work. The economy seems to oscillate very rapidly between a threatened deep depression and the reality of accelerating inflation.

The story that was sketched in the charts reflects the way in which financial resources are mobilized to finance investments during vigorous expansions. The financial changes that take place in the balance sheets of the various sectors reflect the financing of expenditures by the activation of previously idle pools of liquidity, pools which tend to make the financial system robust. However, underlying the greater reliance upon debt financing of investment and positions in

the stock of capital assets is a belief that the debt-validating income of business, households, and state and local government will grow, so that the cash flows required to fulfill financial obligations will be forthcoming. Once expectations of unbounded growth are abandoned, an inherited debt structure can become untenable.

Even though we are not out of danger in the current near financial crisis—there are many tense situations which still need to be resolved so that a “double dip” decline cannot be ruled out—let us make the conventional assumption that the government deficit in 1975 and 1976 first sustains income and then, with a lag, induces a rise in income. The federal deficit will be reflected by surpluses of finance, business, households, and state and local governments—for the sum of all deficits and surpluses over all sectors must add to zero. Given the scare that households, firms, and financial institutions had in 1973-75, we can expect that these cash flows will be used initially to increase the robustness of balance sheets, rather than as the basis for continuing the trends exhibited in the charts. Business, for a while, may invest less in plant and equipment than gross internal funds, and banks are likely to let their equity base grow relative to assets. Demand deposits and treasury debt will become an increasing proportion of the assets of households, businesses, and banking institutions.

The scare of the past year can be expected to lead to financial developments that will move the financial structure toward the robust side of a robustness/fragility scale. However, in the absence of the massive repudiation of debt, such as occurs in a debt-deflation process like that which ran from 1929 to 1933, and a lengthy period of low investment such as characterizes a deep depression, the movement toward robustness is likely to be reversed while the financial structure is still fragile by the standards of the 1950s.

The two financial scares of 1966 and 1970 did not reverse the trend toward financial fragility. In the absence of positive policies to restrain both private investment and new explorations in fancy finance, it is likely that current policy will lead to a resumption of inflationary expansion, once the view becomes generalized that income will be sufficiently high so that cash flows will not only validate outstanding debt but also new equity and debt commitments. Inasmuch as debt is in nominal terms, the early stages of an accelerating inflation reduce the real burden of inherited debt: the nominal cash flows that will vali-

date the debt reflect a smaller real markup on current costs. Inflation decreases the real markup on current costs that is needed to validate debt.

In the light of recent experience, however, there is a barrier to the resumption of the process by which portfolio adjustments make financial resources available for investment. This barrier consists of doubts that prices and outputs of the real economy will generate some of the specific cash flows needed to validate some outstanding debts. It seems likely that in the near future certain types of activity will not be able to meet the market test of validating their debts. Given the current economic plight of housing (in the South and Southwest, in particular), commercial facilities, electric utilities, and air transportation, it is doubtful whether the near-term expected excess of revenues over operating costs for these sectors of the economy will be sufficient to validate a renewed burst of investment in these industries. Thus, in the absence of specific government interventions subsidizing investment by these industries, the initial stages of another boom sufficiently vigorous to continue the trend toward increased financial fragility will be led by economic sectors and financial instruments that differ from those that dominated the recent past. This weakness of the sectors that had a major influence on the growth patterns of the past decade may retard the renewal of vigorous expansion, even in the face of large government deficits.

### *A depression without a depression*

Current policies, after a shorter or longer pause, will lead to resumption of an inflationary expansion financed by balance sheet adjustments that will lead, in time, to an even more fragile financial structure than we had in 1973-74. Once again endogenous feedbacks will lead to threats of financial crises and the unhappy scenario we have gone through three times in the past decade will be reenacted. Is there a way out of this dismal cycle?

There is. It is by recognizing that the deep depressions of history, albeit at a heavy price, accomplished some necessary results: the financial system was much more robust after a deep depression than before, the willingness to engage in speculative finance was much diminished, and the low investment of the depression, as well as the bankruptcy of firms, meant that the investments of the preceding period were in part used up and the balance sheet valuations of the



unwarranted capital-intensive boom investments were written down.

Thus the prescription for getting out of the dismal cycle we have experienced over the past decade is to achieve the economic results of a deep depression without the waste and suffering of mass unemployment. We need a period—perhaps as long as a decade—of low investment and high consumption in which employment is maintained by devices like the WPA, CCC, and National Youth Administration of the 1930s, rather than by increased inducements as well as outright subsidies to private investment that is financed in a speculative manner.

In the face of excess supplies of housing, commercial properties, and industrial capacity, as measured by their ability to validate debt, we now have a national policy to induce private investment and construction. These excess supplies mean that either new investment will not be able to generate sufficient cash to validate the debts and the owners' commitments incurred in financing that investment, or, if new investment is subsidized and put into place, then the older existing capital assets will not be able to validate their debts. The ever more pervasive subsidies to housing, utilities, construction, and business investment that have been required over the past decade are persuasive evidence that such facilities are incapable of generating validating incomes. The market signals are clear: a rapid pace of investment will be an inefficient use of resources. It is now time to manage our affairs so that we achieve a close approximation to full employment in the context of a low investment economy.

### *The need for financial reforms*

There is another message from recent experience. The tendency toward speculative finance means that free market developments in finance are destabilizing—first upward, so that a reasonably stable period is transformed into an inflationary expansion, and then downward, so that financial crises and deep depressions are threatened. We need comprehensive reform of what is permissible in finance, reforms that would eliminate many of the financial layering and liability management devices that have developed over the past three decades.

Most current suggestions for reforming finance look toward permitting greater latitude to financial institutions and in financial practices. The underlying

philosophy of these proposals is that the equity investors put up their chips and they should be free to take their chances. The emergence of giant bank holding companies, with their multidimensional domestic and offshore activities, is one aspect of this trend toward greater permissiveness in the regulation and control of financial institutions. It is now quite clear that the growth of aggressive giant liability-management-oriented banks is in good part responsible for the financing of worldwide inflation and for the accelerating trend toward financial fragility. These giant banks and their customers, who are protected from taking the full consequences of their activities because of the view that the Federal Reserve cannot allow them to fail, have taken advantage of their protected position by greatly expanding their assets relative to their capital base. As a result of the precarious position of giant financial organizations, the Federal Reserve is often required to accommodate to the needs of the giant banks and of financial markets rather than the needs of economic stabilization. Furthermore, because these giant banks are the natural sources of finance for giant corporations, a bias is introduced in the availability of finance that favors giant over medium-sized and smaller businesses. If the objective of policy is to achieve a workable competitive economy, the special shape of the growth in financing over the postwar period has had a perverse impact.

As a result of the destabilizing influence of the evolution of financial practices, we need to open a discussion of what is, and what is not, desirable in financial practices. My inclination is to favor measures that tend to simplify the permissible liability structures of corporate enterprises and allow more leeway to smaller corporations and financial institutions than to giant organizations. But more important than any particular view as to the direction reform should take, is the fact that the existing institutional arrangements in finance stand indicted as a causal factor in our present crisis, and reform is needed to prevent periodic recurrences of such crises.

Thus we need a serious discussion of the physical makeup needed for a good financial economy—one in which the tendency toward destabilizing financial practices is much attenuated. The time has come for constructive reforms, which do not look toward freeing finance but point toward erecting more effective barriers than now exist against the development of destabilizing financial fragility.