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The Instability and Resiliance of American Banking (1946-1978)

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My aim is to discuss certain fundamentals of banking and the effects of banking upon the behavior of the economy. One of my reasons for choosing this subject is that the current popularity of Monetarist doctrine, which in its extreme form seems to assert that the rate of change of an abstraction called money is the only determinant of the behavior of national income in money terms, has tended to make policy makers and analysts overlook a most relevant fact: In modern economies that which is measured as money arises in an exchange between a banker and a "non-bank unit". In various exchanges the banks acquire loans and investments and non-bank units acquire bank liabilities some of which are deposits that serves as money. The rate of change of the items that enter the money supply measures depend upon the behavior of bankers, business men and portfolio managers as they go about their business of doing the best they can for themselves in an ever changing environment for doing business.

Another reason for my choice of topic is that in the United States prices, employment and output have been significantly more unstable in the years since the middle 1960's than earlier in the post-war period and the banking and financial system has exhibited a similar instability. We should know more about this instability, why it was absent earlier in the post-war era, and how economic and financial instability are related. Furthermore, we need to understand why the instability of the late sixties has not led to a deep and long depression such as occurred in previous unstable epochs: we have to understand why today's economy is more resilient than the economy of, say, the 1920's and 1930's.

Banking is a dynamic and destabilizing factor in our economies. A fundamental proposition in Keynesian theory is that the way in which banking and financial markets interact with and help determine effective or financed demand for output has led to the financial crises and the associated deep depressions of economic history. Regardless of the valid complaints we may have about the current state of our capitalist economies, we must recognize we have been successful in that we have not had a thorough going financial crisis or a deep depression in the post-war years. We have had episodes of the kind that ushered in serious depressions in the 19th and early 20th century but the economy has exhibited resilience; the financial "shocks" and the declines in income have been absorbed, so that after a short recession or pause the economy recovered.

Just four years ago, in the first quarter of 1975, in the aftermath of the failure of the Franklin National Bank in October 1974, the American and the world economy was seemingly on its way to a long and deep depression. In fact, the steep decline was brought to a sharp halt in the second quarter of 1975 and a quite strong expansion, which is still continuing, began in the third quarter of 1975. We need to understand both the instabilitiy and the resilience of the banking system and the economy in the years since 1966; an instability and resilience that were so graphically demonstrated in 1975.

My principal point of departure is the American experience in the years since World War II. I choose the American experience for several reasons. One is that I know it best: it would be pretentious of me to claim to be able to describe and explain another banking or economic system.

I will refer to the specific American experience because much harm has been done to our understanding of the behavior of

economies by thinking too much in abstractions - such as money - and not enough in terms of the concrete institutional conditions that generate history. To practical men who subscribe to various "analytical" and "forecasting" services I want to paraphrase a classical remark, "Beware of econometricians bearing print-outs, especially if the econometrician is cavalier about institutional detail". It is necessary to talk about behavior in markets and changes in institutions and practices if we are to understand how our type of economy works.

A third reason for examining the United States is that in spite of the fact that Europe no longer gets pneumonia when the United States gets a cold, the American economy still looms large in the world economy. Even though at current exchange rates the United States banks are not quite as "big" as they were not many months ago, American banks are still a major factor in international financial markets. An understanding of what happened and what can be expected in the United States helps us understand factors that will have a strong influence on the development of Europe - and with Europe, Italy.

A fourth reason is that the evolution of American banking over the years since 1946 illustrates the internal dynamics of a dynamic capitalist economy in which change takes place not only as a cumulative process within institutions but also by changing institutions. American experience illustrates both the benefits of such developments and the dangers involved in allowing financial markets to evolve and expand without concern, control and direction.

The American experience over the past years suggests that central bankers and other policy makers should not rely mainly on abstract models of how banks are supposed to behave or upon numbers and statistics. Central bankers and other

economic policy makers must be in touch with the market places in which bankers and business men finance activity.

In America, over the years since World War II, the banking system evolved from being extremely robust to being quite fragile. As a result of this evolution, both the behavior of financial markets and of the economy changed. There have been "business cycles" over the entire post-war period. However in the years between 1946 and 1966 these cycles were mild and never involved threats of meaningful financial dislocations. These early post-war cycles did see swings in the ratio of corporate gross profits after taxes and dividends to long term investment by corporations, but these swings were mild and they were not accompanied by large variations in short-term interest rates. In the years beginning with the credit crunch of 1966, the business cycles have been sharper; the amplitude of interest rate change have been greater and serious disturbances have occurred in financial markets. Severe financial dislocations took place in 1966, 1969/70, and 1974/5. Since 1966 business cycles have been more pronounced and a "new" phenomena of chronic inflation has appeared even as unemployment rates have trended upwards. The American economy has behaved differently in the years since 1966 than in the years prior to 1966.

Thus the years since World War II separate into two epochs: Twenty years, 1945 to 1965, of tranquil evolution and thirteen years, 1966 to now, of turbulence. The years of turbulence emerged out of the years of tranquility; the emergence of turbulence reflected institutional changes and cumulative effects of the way current economic activity and the ownership of capital assets were financed during the years of tranquility.

The second World War came soon after the great depression. In the United States, full recovery from the

depression that began in 1929 did not occur until after 1940, when rearmament and war resulted in massive government deficits. As a result of this sequence, in which a great war came immediately after a great depression, business had very little debt, and owned a great deal of government debt and bank deposits relative to its debts and income when World War II ended in 1946. Households had very little in the way of mortgage debt, almost no automobile debt, and a large accumulation of government bonds and bank deposits relative to their income. Commercial banks, to take the key financial institution as an example for all financial institutions, had a simple liability structure of demand and time deposits and the asset structure of commerical banks showed a preponderance of government debt.

Liabilities and assets set up cash flows - liabilities lead to cash flows "out" and assets lead to cash flows "in". For debts cash flows are always on account of both principal interest; for real assets the cash flow to the operator is a profits concept which includes interest paid, owner's income and allowances for the erosion of capital's ability to earn income. In the balance sheet structures that ruled in 1946, household and business debt payments could be made quite readily out of current receipts (gross capital income or wages). Furthermore if an accidental or transitory short fall of income took place, the representative household or business could quite readily sell or pledge assets to cover its contractual payment commitments. In a like manner banks had an asset structure heavily weighted with government debts. This implied that there was but a slight danger that the commitments to pay the banks as stated on the bank's assets would not be fulfilled. Furthermore, if a bank had a shortfall of cash, cash could be quickly and easily acquired by a sale of Treasury securities. The sale

of Treasury securities was an assured way of acquiring cash because the Federal Reserve was committed to sustaining the money value of Treasury securities.

I recall discussions in the immediate post-war period about whether banks had any meaningful economic function now that they mainly owned government debt and business was largely internally financed. It seems as if economic policy discussions, and discussions of banking in particular, are often characterized by assumptions that that which now exists must always exist. The immediate post World War II situation was a disequilibrium and both portfolio composition and institutional structures changed in response to the profit opportunities that were available as a result of this disequilibrium. These profit opportunities led to the use of liquid assets to purchase capital assets and to an increase in the use of debt to finance capital asset ownership and investment.

The evolution of banking and finance in the United States can be illustrated by the evolution of the position making instrument over the post war period. Bankers are not money lenders in the sense that bankers do not have a cash box out of which they lend. The fundamental banking act is an agreement by a banker to finance some activity by a customer. The banker, if not the customer, knows that the banker will have to engage in market transactions to acquire the funds to make the payments required by the financing agreement.

A bank acquires the funds it needs for its payment commitments by some combination of its own debts and the sale of owned assets. For an American bank in the late 1940's or early 1950's the major normal source of cash to pay debts was the acquisition of savings and demand deposits. However the level and changes of such deposits at any particular bank

is determined by long term relations with depositors. These liabilities were not under day-to-day control by the banker. Furthermore the bank's portfolio of loans and longer term government debts had and still have relatively thin markets - they are not good sources for cash when needed and they are not good places to "park" any transitory excess of cash. The instrument - be it an asset such as Treasury bills, or a liability such as an overnight loan from another bank (what are called federal funds) - that is used to adjust the cash position of a bank is called the position making instrument. In the first years after World War II the standard way in which banks obtained cash that was needed to fulfill payment commitments or placed funds that was in excess of their needs was by buying or selling Treasury bills. Treasury bills were the position making instrument and the interest rate on Treasury bills was a true measure of the cost of financing increments to a bank's loan portfolio.

I recall being told in July of 1956 by a manager of the money position of one of the giant New York banks that "If there are Treasury bills in our portfolio, beyond what is needed for collateral for those state and local government deposits that require collateral, somebody has made a mistake". As this statement indicates by the middle 1950's the larger banks and some of the more aggressive smaller banks had fully used the excess liquidity that their 1946 holdings of United States Treasury debt represented.

Commercial Banking
U.S. Government Securities and Total Assets
Selected Years 1946-1975

	U.S. Government Securities (Billions of Dollars)	Total Bank Assets	U.S. Government To Toal Assets %
1946	76.5	134.2	57.0 %
1955	65.2	188.5	34.6 %
1965	66.0	342.6	19.3 %
1973	88.8	755.2	11.8 %
1975	119.9	873.6	13.7 %

Source: Flow of Funds Accounts

The data shows that United States Treasury debt was 57.0% of bank assets in 1946 and 34.6% in 1955. In retrospect an amazing thing about this historical record is that the substitution against United States Treasury debt proceeded so slowly in the first decade after the War. In 1965, this ratio was 19.3% and in 1973, the year of the OPEC price rise, this ratio was 11.8%. In the aftermath of the 1974/75 debacle in the banking system, the commercial banks increased their holdings of Treasury debt so that at the end of 1975 Treasury debt was 13.7% of Bank assets.

As the larger commercial banks ran out of excess Treasury securities in their portfolio they had to change the instrument they used to make position. By the middle 1950's many of the giant banks in New York, Chicago and throughout the country were making position and placing temporarily excess cash by borrowing and lending deposits at the Federal Reserve banks on an overnight basis. These loans are called federal funds and they are to this day a major position making instrument for all banks.

In the summer of 1956 I visited Garvin Bantel and Company, a New York stock exchange firm whose "money brokering" business had led it to become the clearing house for federal funds. One young man using mimeographed work sheets and several telephones handled the market. There were only some fifty banks who regularly dealt in federal funds, however new banks were joining the market daily. Today almost all of the more than 14,000 banks in the United States deal in federal funds, either directly or through their correspondent; in each week during July and August of 1978 the 46 money market banks bought in excess of $20 billions of federal funds.

By 1957 federal funds had become the major position making instrument for many banks. For many banks, but especially for large banks, federal funds have become a basic source of bought money. Thus in the week ending August 9, 1978 - a not unusual week - the five money market banks in Chicago had a net borrowed federal funds position in excess of $5 billion; this $5 billion was 330% of the average required reserves of the five banks. It is obvious that for these banks federal funds are a basic source of funds and not a liability that is used exclusively for marginal position making.

The emergence and growth of the federal funds market led to a more perfect integration of the banks. It also meant that a given volume of Federal Reserve credit or high powered money could support a larger volume of bank liabilities and thus of bank assets. Beginning with the federal funds innovation in the 1950's the American banking system has "innovated" a series of devices that have increased the ability of the banking system to finance business on any given base of reserve mone. The control over the banking system by the Federal Reserve has continuously been attentuated by the invention and evolution of banking practices.

By the early 1960's the growth of the market for commercial paper, by which business could use excess funds to loan to business, put a damper on the growth of bank time deposits. Major New York banks responded to this competition and introduced negotiable certificates of deposit, an instrument tailor made to facilitate cash management by corporations. With the emergence of federal funds and negotiable certificates of deposits as substantial sources of bank funds commercial banking in the United States entered a "new regime" which can be characterized as "liability management" banking.

In the "naive" view of banking, a banker's liabilities (deposits) are determined by the asset preference of households. In the mechanical monetarist view, total bank deposits are determined by the volume of bank reserves (normally called High Powered Money) that is made available to banks by the Central Bank and by international financial flows. In truth, bankers always sought out funds and therefore always marketed liabilities. However in the early post World War II years the dominance of Treasury debt in bank portfolios meant that the profitability of banks largely depended on how well their assets were managed. Mangement's major concerns were with the relative volume of loans and Treasury securities, the distribution of Treasury securities over the range of available maturities, and the specific mix of household, business, and mortgage loans in their portfolio. Beginning in the 1960's and continuing to today, the management of liabilities - the compostion and costs of instruments used to acquire command over resources - has been an increasing concern of bankers. Sometimes it almost seems as if bankers have been so intrigued by being inventive in creating new types of liabilities that they have neglected to strongly police the assets acquired.

After the introduction of negotiable C.D.'s in 1960 the evolution of American banking and the aggressiveness of banking in exploiting new liabilities seemed to accelerate. In the latter part of the 1960's, in the credit crunch of 1966 and the squeeze of 1969/70, those banks that had access to the Euro-dollar market were able to circumvent some of the costs imposed by rapidly escalating interest rates. Thus a "movement overseas", first to protect their access to reserve balance in times of stringency and then to seek profits in the highly levered and largely uncontrolled offshore money markets took place.

The forms of liability management banking are numerous. However they all add up to "buying money" when needed by selling a liability - be it a federal funds debt, commercial paper, negotiable certificates of deposits, or the execution of a repurchase agreement. Purchased money has become a major factor in banking. For giant banks - especially giant banks in unit banking states such as Illinois, where a network of retail/consumer oriented branches tied to a money market bank is not allowed to exist - demand and ordinary time deposits now can constitute as little as 20% of total liabilities for particular banks. Thus at the end of March 1978 the large money market banks in Chicago had $42.4 billions of liabilities. Of these liabilities only $10.4 billions in demand deposits, $2.4 billions in time deposits of less than 100,000, $2.9 billions in savings deposits and $2.8 billions in equity funds do not conform to the definition of bought money. Thus $23.9 billions out of $42.4 billions of total liabilities or 56% of liabilities can be classified as bought money. The large Chicago banks are actively engaged in selling their liabilities even as they aggressively pursue assets.

In addition to overt liabilities, the past years has seen the increased use of covert liabilities in the forms of endorsements, lines of credit, and letters of credit. The emergence

of complex liability systems for banks has also meant that for any bank, and for the banking system as a whole, a shift in the preferences of asset owners can lead to serious position making problems for particular banks or even for the banking system. Whereas a system such as existed in 1946 was almost impervious to runs, the liabilities of banks now are so sensitive to market and economic system development that runs may develop. Thus in the bankruptcy of Franklin National Bank in 1974, the Federal Reserve sustained the Franklin National with over $1 billions of discounts, which enabled Franklin National to pay off almost all of the "deposits" at the London Branch before the Bank was finally adjudged bankrupt. By this action the Federal Reserve implicitly endorsed all of the overseas liabilities of American banks and successfully prevented a "run" on these banks.

In 1966 the Federal Reserve attempted to constrain a business cycle expansion that was showing inflationary signs. As a result of a pattern of interest rates that developed, there was a run off of deposits from savings banks and the time and savings deposits of commercial banks. A number of banks tried to "make position" by selling municipal bonds. The municipal bond market proved to be very thin. In September of 1966 the Federal Reserve opened up the discount window to allow banks to make position without recourse to the municipal bond market. This first episode of the post war period that required lender of last resort intervention was mild, nevertheless it brought the long expansion that began in 1960 to a temporary halt.

In 1969 the Federal Reserve had to intervene when the failure of the Penn Central Railroad to meet payments on commercial paper threw the entire commercial paper market into disarray. The immediate point at issue was the finance company

owned by Chrysler Motors. This required refinancing by commercial banks and the process required intervention by the Federal Reserve to encourage commercial banks to provide the financing required by Chrysler Finance.

The full story of the 1974/75 crisis that has the failure of the Franklin National Bank in New York City as a spectacular centerpiece has not as yet been fully researched. It was the first fully international financial trauma of the post World War II era, however the roughly concurrent financial trauma in Germany, Britain, Italy and Australia have not as yet been related to American developments.

In the United States the 1974/75 financial debacles had two main facets. One was the spectacular series of bank failures and near failures: Franklin National was only the largest of a series. At least three other billion dollar banks can be considered to have failed in this period and a sizeable number of very large banks qualify as walking bankrupts during 1975/76. The second facet was the serious financial difficulties of a financial industry - the Real Estate Investment Trusts. The "position" of these financial institutions was mainly in construction loans although some of these institutions specialized in owning mortgages and real estate. To a very large extent REITs financed positions in long and medium term assets by short term commercial paper. In the run up of interest rates in 1974/75 these institutions lost their ability to sell commercial paper, for the very good reason that their debts came close to or exceeded the value of their assets. In this situation the commercial banks, and in particular the largest commercial banks, honored their commitment, which underlay the commercial paper financing, to provide bank loans to the REIT's in case there was a "run off" of commercial paper. This refinancing by the

commercial banks of the REIT's was a lender of last resort operation. The losses on this operation adversely affected the earnings of many large banks over the next several years. The inflation and recovery since 1976 has in part made these banks healthy - but in the years that intervened many banks were seriously constrained by these losses.

It seems clear that in 1966, 1969/70 and 1974/75 the need to sustain weakened markets and to refinance threatened financial institutions forced the Federal Reserve to supply reserves to member banks at a rate that deviated quite sharply from any money control objectives they might have. In a complex financial structure it is not true that central banks can control the volume of high powered money at all times, unless they are willing to run risks of much more serious dislocations than in fact occurred. Thus if the Federal Reserve had allowed Franklin National to go bankrupt in May of 1974, when the run on the London branch took place, so that owners of the liabilities — of the London branch took losses a "run" would have developed on the London branches of other international banks. The Federal Reserve and other central banks would then have had to furnish reserves at a much larger scale. In the spring and summer of 1974 reserve creation was affected by the needs of financial stability.

The evolution of the liability and asset structures of American banking over the years 1946-78 illustrates the general principle that over a period of good times the financial structure of a capitalist economy evolves from being robust to being fragile. We need to investigate and understand the cash flow properties of balance sheets in order to understand this evolution.

In making a loan or buying an investment the fundamental banker's question is "How is the debtor going to acquire the cash to fulfill the payment commitments he is undertaking?" Before a prudent and wise banker will agree to finance a business proposition he needs to understand the processes and market transactions that the borrower will engage in to generate the cash needed to satisfy the commitments to pay that the borrower is about to undertake. In my presence a successful and wise loan officer remarked to a group of younger bank officials he was instructing, "If you don't understand a deal, walk away from it".

In a banking deal a banker first provides his customer with funds and the customer undertakes to supply the banker, on some agreed upon schedule, with more money than he received from the banker. In order to acquire this money for repayment, the customer expects to offer goods, services or debts on various markets in exchange for money. The asset side of a bank's balance sheet can be interpreted as determining a set of contractual cash flows - and behind each contractual cash receipt as stated on the assets owned by banks there are operations that the debtors will carry out in markets that result in the debtor's acquiring money. That which debtors to banks offer in exchange for money makes bank money valuable. If debtors to banks offer goods and servicesin exchange for bank deposits then units which do not owe money to banks will be willing to hold bank money. If instead debtors to banks can only offer further debts when payments are due, then bank money will lose value. If bank money is the dominant money then such "depreciation" of bank money will take the form of rising output prices; inflation will result.

The entire financial edifice that is constructed on the basis of bank lending depends upon the ability of the debtors to banks to "make bank money valuable" by what they offer in exchange for bank money as their debts to banks become due.

In recent discussions of the role of money in determining income, the emphasis has been on the quantity of money in existence and its rate of change or growth. However in a banking process, money is being destroyed as debts to banks are paid and created as bankers extend loans. Prof. R. S. Sayers in his classic study, Bank of England Operations 1890-1914 remarks that "It is the duty of every bank and most of all of a central bank to be rich" /p. 27/. A banker is rich exactly as the assets on his books generates a large and assured cash flow in his favor. When this cash flow to bankers takes place the total amount of bank money in existence declines. Such a decline means that the business community has to bid more aggressively for the remaining bank money in order to fulfill its commitments on outstanding debts and for new financing from banks to carry out operations. The quantity of money remains at a particular level only as banker's extend credit at the same rate as debts to banks are repaid, and the quantity of money in existence increases only as the rate of credit extension exceeds the rate at which cash flows into banks to extinguish debts. It is the flow of funds from debtors to banks that makes banks rich and banks will remain rich only as they structure their assets so that this reflux flow is sustained.

Because bankers lend at interest, the cash flow over time to banks because of assets owned exceeds the cash flow from banks that took place in the past when the credit was extended. There is a tendency for bank money to "decline" because of this

excess, only bankers spending out of banker's income and an increase in total bank advances or loans will overcome this deflationary thrust.

If money is created only on the basis of well structured loans in which the borrower in a relatively short span of time succeeds in selling goods and services to acquire cash needed to extinguish the loan, then the creation of money in the banking process is not likely to lead to an excess supply of money in the community and a resulting fall in the value of money. However if money is created by banks in order to finance projects which do not result in a flow of output which enables the debts to be repaid, then the demand for "money" (to repay debts) will be less than the supply of "money" (as created by banks) and the value of money is likely to fall, i.e. prices are likely to rise.

If a debtor to a bank cannot raise the funds needed to pay off a bank debt when due by selling output on markets, the debtor may raise the funds by borrowing, by rolling over debts, or by selling assets. There are two types of bank - customer relations, one involving a repayment of debt by sales proceeds and the second a repayment of debt by the issuance of new debt. When debt is repaid by new debt, then the supply of goods and services offered in exchange for money is short of the amount that would fully validate the value of money; a banking system in which a large part of the supply of bank money is sustained by the rolling over of debt or by the extension and refinancing of debtors is likely to be associated with a rising price level, i.e. inflation.

We can extend our argument to the financing of a government deficit. When a temporary government deficit leads to the creation of bank money, taxes are the "normal" source

of the reverse flow that would pay the debt and extinguish bank money. If over a short time span the government deficit that is monetized is almost entirely offset by taxes, then short term government debt taken into bank portfolios will not be especially inflationary. If the government deficit is not largely offset by taxes, then the need to roll over and refinance the bank's holdings of government debt will lead to a declining value of bank money, i.e. to inflation.

The above is in part a rationalization for the real bills doctrine, which can be characterized as holding that the effect upon prices of the creation of money through the banking process depends upon the nature of the assets acquired by banks and thus the operations in the economy financed by bank credit. If bank money is created as a result of well structured loans then there will be a minimal inflationary thrust due to a rise in bank money, if bank money is created in a loan process which does not lead to a flow of goods (or taxes) to acquire money to repay the banks, then inflationary pressures will accompany increases in bank money.

The inflationary dangers from financing a chronic government deficit by bank money creation is obvious, the bank money is not supported by a flow of funds from the economy to the bank that would tend to extinguish or destroy the money so created.

We can formalize and extend the financial and cash flow relations that center around well-structured loans and the balance sheets of business and banks. Regardless of whether we are considering a bank, a household, or a business firm every position (i.e. set of owned financial or capital assets) needs to be financed. The instruments used to finance positions set up cash flow commitments even as the assets "in

position" yield cash flows. We can distinguish three types of financial postures.

1. Hedge finance: The cash flows from assets in position exceed the cash flow commitments on liabilities for every period. As cash in exceeds cash out in every period, the present value of a hedge finance unit is positive for every set of finite interest rates as long as cash in and cash out are capitalized at the same rate.

2. Speculative finance: The cash flows from assets in the near term fall short of the near-term contracted payments, but the income portion of the near-term cash flows exceed the interest cost of the debt and the longer term cash receipts are expected to exceed cash payments on existing contracts. A speculative finance unit needs to roll over or refinance debt to meet its near-term financial commitments. The present value of the net cash flows of a speculative finance unit will be positive for one set of (low) interest rates and negative for others (high) interest rates.

3. "Ponzi" finance: The cash flows from assets in the near-term fall short of the cash payment commitments and the income portion of the near-term receipts falls short of the interest portion of the payments. A "Ponzi" finance unit must increase its outstanding debt in order to meet its near term financial obligations. Presumably there is a "bonanza" in the future which makes the present value positive. Although "Ponzi" finance is often tinged with fraud, every investment project with a long gestation period and a somewhat uncertain return has aspects of a "Ponzi" finance scheme.

There is at all times what Keynes called a "constitutional weakness" in the financial system in that household owners of wealth prefer short dated assets which embody

protection against declines in nominal values even as the capital-assets used in production forces long term assets whose nominal value as assets have considerable downside risk into the portfolios of business. In periods of tranquility, when the cash flows from long assets are at satisfactory levels, the protections embodied in holding monetary assets lose some of their subjective value. The use of monetary assets to acquire short term earning assets in order to finance positions in long term financial or capital assets is of course the reason for being of financial intermediaries - the non-bank financial institutionsthat emit specialized liabilities even as they finance capital assets ownership are able to "make on the carry" because of this "constitutional weakness".

In terms of the classification of financing relations into hedge, speculative and "Ponzi" finance, the constitutional weakness of which Keynes wrote leads to a progression of balance sheet structures from hedge to speculative finance during periods of tranquility. The enormous growth in short liabilities of non-financial corporations between 1947 and 1965 to 1975 in the United States is evidence that the progression which makes for an ever greater reliance on short term debts was taking place. Thus in 1947 the short term debt of non-financial corporations was about 1/3 of their liquid assets and about equal in size to their gross profits after taxes. In 1965, just prior to the first post-war financial market crisis, the short term debt of non-financial corporations was 71% of the liquid assets and 87% of gross profits after taxes. By 1975 the debt structure of non-financial corporations had short term debt some 120% of liquid assets and almost 150% of short term debt. The income flow, short term debt relation for 1975 indicates that for a large proportion of

firms debts that fell due had to be repaid by the issuance of new debts.

	Non Financial Corporate Sector (Billions of Dollars)		
	1947	1965	1975
Short term debt	12.2	48.7	151.2
Liquid Assets	35.2	67.8	124.4
Gross Profits after taxes	12.6	56.1	103.4

Source: Flow of Funds Data

As long as business and households engage mainly in hedge finance the only way the owners of debts of these firms can be hurt is if income falls so sharply that the cash flows to the units falls below anticipated cash receipts. If households and firms engage in speculative or Ponzi finance then a "failure" of financial markets, and, particularly, large increases in interest rates can make the value of liabilities exceed the value of assets for debtors. This in turn will lead to an inability to sell new debt to raise the funds required to meet maturing debts.

Ponzi finance is an extreme case of speculative finance in which the sale of an asset or the take out financing of a finished investment project is supposed to generate the cash that will repay the accumulated debts. To a producer of investments or some construction project the final sales price of the resulting capital asset must be large enough to recover not only the labor and material costs but also the accumulated interest charges on expenses. Any increase in interest rates raises the minimum sales price for capital assets that will cover the costs of production.

As we all know the higher the interest rate the lower the capitalized value of any set of future incomes. High and rising interest rates play havoc with the cash flow relations of a Ponzi financing scheme. They raise the cost of the investment good even as they lower the price of capital assets. After the debacle of 1974/75 many a condominium project in Colorado, Florida and elsewhere in the United States was abandoned in mid stream because the next increment of Ponzi finance was not forthcoming as capital values declined.

Thus the overall susceptibility of an economy to financial crises can be measured by the relative important of hedge, speculative and Ponzi finance in the total financial posture of the economy. When the financial structure is largely dominated by hedge finance, as it was in the first years after World War II, the financial system is robust, in the sense that large changes in interest rates and the bankruptcy of financial or large business organizations will not lead to any cumulative process or domino effect. When the financial structure is heavily weighted by speculative finance then large changes (increases) in interest rates can make the net worth of many organizations negative, so that refinancing is available only if concessions are made on terms. Such a financial system is fragile. Furthermore the existence of a large mixture of speculative finance is evidence that asset holders are in a position to shift among asset forms they desire to hold, the opportunity for runs increases.

The term Ponzi finance relates to a scheme that offered extraordinarily high interest rates in exchange for deposits in Boston, Massachusetts in the immediate aftermath of World War I. It began as quite a modest proposal to exchange dollars for lira, use the lira to purchase orders for

United States stamps in Italy, and cash these orders for stamps into dollars in the United States. Before World War I fixed exchange rates and price level stability were so much taken for granted that the postal convention treaties embodied the lira price for orders to buy dollar denominated stamps in the United States. Given the exchange depreciation of the lira relative to the dollar, I believe a profit of the order of 300% of the dollars invested was available. With this in the background Ponzi offered high interest rates for deposits. For a considerable period of time-stretching over several years - Ponzi was able to keep the scheme afloat by using increments to deposits to pay interest on the outstanding deposits.

However Ponzi finance is a much broader concept than the "ballooning" of deposits story indicates. Ponzi finance includes any financing arrangement in which interest payments on outstanding debt have to be added to the debt until the date at which the assets either reach maturity or some position can be sold out. The financing of real estate construction in the United States is a Ponzi scheme, if the financing of a plant that takes a long time to build is separated from the finances of the owning corporation then every long gestation investment scheme is a Ponzi scheme. Similarly the financing of holdings of stock market assets by short term debt - where the return on the assets falls short of the interest payments on the debt - is a Ponzi scheme. The viability of a Ponzi scheme depends upont the ultimate sale of an asset or the refinancing of some position by long-term debt. Ponzi schemes collapse with rising interest rates and falling asset values. Whereas in speculative finance the cash flows at the later date can be considered reasonably assured if income is sustained, the cash receipts that make a Ponzi

scheme viable are much more conjectural.

Thus Ponzi finance is tied to the pace of investment and speculation on asset values. The ratio of Ponzi finance in total finance will tend to increase whenever investment in process is increasing rapidly and stands at a high ratio to the internal funds of non financial corporations. The ratio of non financial corporate plant and equipment expenditures to gross internal funds is an indicator of the weight of Ponzi finance in the financing of investment in process. This ratio stood below 1 for every year between 1958 and 1966; it exceeded 1 in every year between 1967 and 1975.

There is therefore a sense in which banking is an inherently destabilizing influence in economies. Bankers are merchants of debt - and most importantly merchants of short term debt. Bankers are successful as they induce holders of funds to acquire the short term liabilities of banks and holders of assets and conceivers of projects to finance their activity with short term debt. There needs to be a mechanism that constrains the use of bank financing to what I called "well structured" loans. In modern American banking this mechanism is now quite weak.

Even though the financial system in the United States has evolved over the years since 1946 into a much more complex system with a wide variety of liabilities outstanding and even though the weight of speculative and Ponzi finance has increased the economy has not suffered a great depression such as occurred in the 1930's. The danger of another serious depression was perhaps greatest in the 1974/75 episode. The economy however exhibited sufficient resilience so that today, merely four years after the bottom" the "threat" of 1974/75 is but dimly remembered.

The resilience of the American economy after 1974/75 was not in any way due to "inherent" or "fundamental" equilibrium

characteristics of a capitalist economy. The resilience was mainly due to specific institutional characteristics of the American economy, in particular the resilience of the economy was due to the combination of an enormous government deficit, prompt lender of last resort interventions by the Federal Reserve and the largest banks acting as agents for the Federal Reserve, and the absence of downward pressure on asset prices from stock exchange credit and the financing of the stock of housing.

In a capitalist economy with a small government (which characterizes the United States in the 1920's) profits equals investment. This relation, which was emphasized in the work of the great Polish economist, M. Kalecki, has a facet that has been neglected: Profits are the cash flow to business that enables business to meet commitments on debts. The flow of profits and profit expectations determines whether a given debt structure is an example of hedge, speculative or Ponzi finance. In particular a fall in profits can transform hedge finance into speculative finance and can make a "positive" present value financial relation into a "negative" present value relation.

Furthermore profits and the expected trend of profits are part of the information that the market uses in determining the prices of equity shares. In the United States in the 1920's equity share ownership was often financed on thin margin call loans so that the interest charges on stock market debt exceeded the dividends earned on the stocks being financed.

In terms of the classification of financing relations, the 1920's margin stock market in the United States was an example of Ponzi finance. In the 1920's the standard mortgage used to finance home ownership and the ownership of rental property was a relatively short term (5 year maximum) instrument

with a balloon payment at the end. This type of mortgage is an example of speculative finance.

Thus in 1929 a fall in investment meant that profits - the cash flow from the operation of the economy to business - declined sharply. In agriculture, construction, and other lines of business, the cash flows to meet payment commitments slowed down. This shortfall of business cash flows forced banks, savings institutions, and insurance companies to refinance or foreclose. Without the cash flow from existing assets, the amount of new financing that banks et al. could extend decreased. A further fall in investment resulted, which led to a further decline in profits.

The fall in business profits meant a fall in dividends and in stock prices. This undercut the expectations of rising stock prices which made Ponzi type financing of stock market collateral rational. As a result a sell out of stocks that induced a forced sell out of stocks as margins evaporated led to market prices of shares far below the reproduction value of underlying capital assets. Furthermore a fall in rental income from housing and commercial property transformed the speculative mortgage into a Ponzi instrument.

A combination of inept financing relations and a decline in profit flows as investment collapsed was responsible for the great contraction. The Federal Reserve was remiss in not acting more aggressively as a lender of last resort but was not mainly responsible for the decline. The lack of resilience, after the decline was finally halted in 1933, was due to a failure of investment to respond to very low apparent interest rates. The lack of response by investment was largely due to extremely conservative views as to the apt liability structure for various activities that was a legacy of the disasterous 1929-33 fall.

In a capitalist economy with a big government in which taxes fall sharply when income falls and expenditures increase appreciably when income falls (which was true of the United States in 1974/75) profits equals investment plus the government deficit. In 1974/75 a massive government deficit - which peaked at an annual rate in excess of $100 billion in the second quarter of 1975 - meant that business profits in the aggregate increased by approximately 33% in 1975 over 1974 even as the unemployment rate increased to 8.5% from 5.6% and industrial production fell by 10%. Even though the stock market fell, the absence of large scale Ponzi financing using stock exchange collateral meant that the stock market decline did not affect the viability of lending institutions.

One of the long lasting reforms of the Roosevelt administration of the 1930's was the transformation of the standard home mortgage into a fully amortized "hedge financing" instrument. Furthermore the Federal Reserve promptly intervened to protect the "asset value" of deposits in failed banks and encouraged commercial banks to refinance the largely Ponzi financed REIT's. As a result of the combination of the large deficit, the more apt financing relation for stock market and housing assets, and lender of last resort interventions the American economy not only recovered quickly after 1974/75 but was able to act, almost alone, as a locomotive for world recovery in 1976, 1977 and 1978.

If I were to cite the most important reason for the success in avoiding a deep depression during the decade after 1966 I would select the deficits induced by big government.

I would also argue, but I will not here and now, that the inflation of the years since the middle 1960's in the United States - an inflation that has taken place in spite of

rising unemployment and a weakened labor movement - is a side effect of the medicines (huge deficits and effective lender of last resort intervention) that have successfully prevented a deep and long lasting depression. A major policy problem for the United States, and for the other capitalist countries, is to design a package of government programs, taxes, central bank support operations and financing relations which provides the protection against deep depressions that we have enjoyed but does not have side effects as serious as the present inflation.

In the United States a political movement, born out of frustration with inflation, that aims to reduce the size of government and to force an annually balanced budget on the Federal government is apparently gaining momentum. The program of this movement will reduce the protection against a deep depression that the automatic large deficits now provide - a protection that exists mainly because a large deficit during a business recession supports and sustains business profits.

The United States has provided an umbrella for the economic growth and stability of Europe and the rest of the capitalist world in the years since World War II. It was a strong and confident Federal Reserve that intervened to validate all of the deposits at Franklin National's London Branch in 1974. It was an America that felt it could ignore its balance of payments and the exchange value of the dollar that blithely ran a Federal government budget deficit at an annual rate that exceeded $100 billions in the second quarter of 1975. Such support from the Federal Reserve and such a quick move to a massive deficit seem unlikely in any future crisis. It seems clear that in any future financial crises involving international banking the lender of last resort operations and in the

generation of large scale government deficits will have to be shared - and it is not at all sure that the required cooperation among the central banks and the national budget authorities will be forthcoming.

The Iranian affair illustrates that there are political as well as financial sources of instability. A strong financial system can absorb the losses associated with political instability, but in the current situation the political losses are being imposed on an international financial structure that has been weakened by poorly structured balance of payments loans and by the troubles of the dollar.

We have not seen the last of financial instability. There will be further tests of the resilience of the financial structure in the United States and elsewhere. The resilience exhibited by the international economy in the post war period has been in large measure due to the resilience of the American economy. It is to be hoped that a shared leadership will be up to the task of sustaining a taut financial structure when another crisis threatens. It would be best if in times of relative tranquility the central banks and the fiscal authorities build a structure of cooperation and coordination for times of uncertainty and stress. I fear that such preparation is lacking; that much of what passes for preparation is really window dressing. Thus I fear that the economic and financial interventions necessary for resilience may not be forthcoming promptly in the next test of the stability of our system. This, I fear, means that a quick rebound from financial trauma, such as happened in 1966, 1969/70 and 1974/75, may not happen the next time around.