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An Evaluation of Recent Monetary Policy

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in St. Louis, Missouri**

I. Introduction

As a result of the boring continuing debate between "monetarists" and "fiscalists" it would appear that an evaluation of recent monetary policy should focus on three issues: Can the Federal Reserve control the money supply, Would appropriate control of the money supply lead to desired levels or rates of change of economically meaningful target variables, and Should the money supply be controlled even if such control leads to the achievement of targets?

I phrase the above as I do - emphasizing what the issues might appear to be - because in truth there is but one meaningful issue in monetary theory and policy: Does the neo-classical paradigm - in either its monetarist or its fiscalist garb - yield an adequate basis for analyzing the behavior of and prescribing policy for American and similar capitalisms, and if the neo-classical paradigm will not do what is the alternative?

For standard monetary policy applications the neo-classical paradigm takes the form of a model which is a union of a modified 'Phillips'¹ tradition money supply function with a Hicks-Patinkin-Modigliani² IS-IM based model. In this union the conventionally defined money supply is endogenous - as is the interest rate - given some exogenously determined reserve base. Inasmuch as in the 'normal' case for any given fiscal policy there exists a money supply that is consistent with the target variables, this model yields the standard or text-book monetary-fiscal policy rules for tuning the economy. In the 'abnormal' or 'liquidity trap' case such a unique target money supply for each fiscal posture does not exist: Fiscal policy needs to carry the entire burden of policy.

¹C.A. Phillips, Bank Credit, New York: The Macmillan Co., 1920.

²J.R. Hicks, "Mr. Keynes and the Classics: A Suggested Interpretation". Econometrica, Vol. 5, April 1937, pp. 56-70.

D. Patinkin, Money Interest and Prices, New York: Harper & Row (Second edition) 1965.

F. Modigliani, "The Monetary Mechanism and its Interaction with Real Phenomena", Review of Economics and Statistics Supplement, Vol. 45, Feb. 1963 pp. 79-107.

In fact this standard model does not and is not capable of explaining the financial market conditions and the economic system behavior that rightfully dominates Federal Reserve behavior at those times that Federal Reserve behavior matters most, which is when the financial system is fragile and instability presents a clear and present danger. The experience of 1966 and 1970 indicates that in a strongly expanding economy - in a boom economy - Federal Reserve action operates mainly, though inadvertently, by affecting views as to the desired liability structure - and this in turn reflects the "felt uncertainty" of asset holders and the issuers of liabilities. An adequate analysis of the responsibilities, limitations and powers of monetary policy over a broad spectrum of economic environments requires an alternative to the neo-classical paradigm - an alternative which emphasizes decision making under uncertainty. In such a model, monetary policy can be an exercise in economic brinkmanship, although if the authorities are guided by standard theory the exercise is unintended.

The period I will define as 'recent' covers the years since Kennedy's inauguration. Only since 1966 has the stability of the financial system and the need for active intervention by the Federal Reserve to offset such instability been once again at issue: During the thirty years prior to 1966 financial instability was not an "active" issue. Thus we are concerned with monetary policy in the period leading up to and including episodes of financial instability.

The main thrust of my argument is that the observed financial instability is due to characteristics that are basic to an advanced capitalist economy: That financial instability is endogenous and reveals a systemic flaw in capitalism. However, this irreducible instability can be amplified and its consequences exacerbated by nonessential institutional weaknesses and policy errors. In the light of the above suggestions for reform and change are advanced in the hope that some improvement in performance can be achieved.

II. Can the Federal Reserve Control the Money Supply

Before I take up the alternative theoretical basis for monetary policy I will address myself to the "can" question: "Can the Federal Reserve control the money supply?" I will accept that by ignoring consequences the Federal Reserve could set the reserve base on target. However this will not in any economically meaningful sense control the money supply. Writing in 1936, Henry Simons, a leading founding father of the Chicago school, noted, that:

"Banking is a pervasive phenomenon, not to be dealt with merely by legislation directed at what we call banks. The experience with the control of note issue is likely to be repeated in the future, many expedients for controlling similar practices may prove ineffective and disappointing because of the reappearance of prohibited practices in new and unprohibited form. It seems impossible to predict what forms the evasion might take or see how particular prohibitions might be designed in order that they might be more than nominally effective." "Rules Versus Authorities in Monetary Policy" [H. Simons Economic Policy For A Free Society, Chicago: University of Chicago Press, 1948, p. 172].

Similarly money is a pervasive instrument, not necessarily limited to those liabilities - whether demand or time - of banks against which 'reserves' are kept. One aspect of money is that it is the instrument used to consummate a purchase. Thus in the financial environment of a boom various funny monies appear: Any economic unit can 'emit' money the only problem is to get it accepted. In the late nineteensixties various funny monies were being accepted - particularly as issued by aggressive conglomerates.

Another aspect of money is that it is a widely acceptable liability used to finance positions in assets. This aspect of money is also possessed by instruments, not usually defined as money, such as commercial paper. The explosive growth of commercial paper in the late 1960's - leading up to the Penn-Central crises - is an example of money creation outside of conventional banking channels. The non-eligible acceptance is another monetary form. As we contemplate the development, through the 1960's, of liability management banking and sophisticated corporate

cash management we recognize that during booms an inverted 'Says Law' is apparently applicable to finance: The demand for finance draws forth a supply. The Federal Reserve as it used its instruments in the late 1960's had to be aware that it was operating in a complex financial system and that its responsibilities cover much more than any narrowly defined money supply and chartered member banks.

As A.B. Cramp ["Does Money Matter", Lloyds Bank Review, October 1970, pp. 23-37] emphasizes central banks have both control and support functions. The control responsibilities aim at achieving a desired state of the economy - be it that the desired state is measured in terms of employment, inflation or the balance of payments. The standard neo-classical view of economic policy lays down directives as to how the Federal Reserve, given the thrust of fiscal actions, is to operate on the open market, manipulate reserve requirements, and use the discount window in order to achieve a desired state of the economy. These policy rules relate to the control functions.

The Federal Reserve also has support functions. Two types of support functions can be identified. In one type the Federal Reserve is concerned about how particular markets operate: The concern about housing, state and municipal bonds, and "even keeling" during treasury debt operations are examples of these interests. The second type of support function deals with the overall viability of financial markets.¹

¹In his thesis research at Washington University, John Wenninger is investigating the effect of 'constraints' [attributes of the support function] on Federal Reserve behavior. He finds that the econometric explanation of Federal Reserve behavior is much improved when constraints are taken into account than when only the variables that indicate what should be done in order to control the economy are taken into account. Furthermore, he finds that the significance of the constraints in determining Federal Reserve behavior is significantly greater after 1966 than before 1966.

In fact, the Federal Reserve was created for this second support purpose: To prevent monetary crises and the ensuing debt deflation process. The initial and still dominant, when the need arises, function of the Federal Reserve is to act as a lender of last resort. Therefore, the Federal Reserve can only afford the luxury of ignoring its support functions if the financial system is robust. Furthermore, in its support functions the Federal Reserve quite properly looks beyond its narrow immediate responsibilities to the member banks. Its implicit charge is to support to whatever extent necessary all dimensions of the financial system so as to prevent financial disruptions that can have serious consequences upon income and employment. From this perspective the major shortcomings of the Federal Reserve in the great debt deflation of 1929-33 was not that it allowed the money supply to decrease but that it permitted asset values to drop as sharply as they did: That it allowed banks, building and loan societies and other financial institutions to fail to the extent that they did.²

Given the broad nature of "money" and the need for the Federal Reserve to monetize assets whenever its "support responsibilities" are operative my conclusion is that the Federal Reserve really cannot control the economically relevant money supply.

²From this perspective the Bank of United States incident, rather than the path of bank deposits, is a critical example of the Federal Reserve's failure in the great contraction. See Friedman and Schwartz, A Monetary History of the United States, Princeton: Princeton University Press 1963.

III. Should the Money Supply Be Controlled

Once the dual control and support responsibilities of the Federal Reserve are acknowledged, then the possibility of inconsistencies or tradeoffs between the responsibilities needs to be acknowledged. As "controlling the money supply" is rationalized on the basis of the "control" functions, we immediately acknowledge that the money supply should not be a proximate policy objective if the measures necessary to achieve the desired money supply have sufficient undesirable consequences with respect to the Federal Reserve's support responsibilities.

Implicitly Simons' view is that the financial institutions and usages evolve - in particular in response to profit opportunities. In a profound sense institutional evolution implies uncertainty. It is never known to market participants and the authorities how new institutions will react in novel situations. For example the validity of deposit insurance as a generalized protection against runs on financial institutions was not tested until the crunch of 1966, when the insolvent position of savings intermediaries did not trigger a run on these institutions.

A theory which rationalizes support functions needs to integrate uncertainty as a determinant of the behavior of the economy and as an attribute that can be affected by monetary policy into its models. Thus, before the support functions of the Federal Reserve can be taken seriously it is necessary to formulate a view of the world in which financial system disruption can take place and can have serious consequences. A theory or model in which financial crises can occur, in which the conditions for a crises are endogenously determined, and in which such crises, once they occur, have serious effects is needed.

From the perspective of the "1960's" theory of both the monetarists and the fiscalists, the events of 1966, 1970 and 1971 - the "crunch", the "squeeze" culminating in the Penn-Central crisis, and the dollar crisis - are not explicable.

There is no place in a world that is adequately described by either the IS-IM framework or by stable demand and supply functions of money, for the endogenous determination of a boom and the conditions conducive to a mini-crisis, such as took place in 1966 and 1970.

In a defense of monetarism, Darryl R. Francis, President of the Federal Reserve Bank of St. Louis does not mention of the crunch of 1966, the liquidity squeeze - Penn-Central fiasco of 1970 and the international monetary crisis of August, 1971.¹

This omission of financial traumas in theory and in historical analysis is important. After both 1966 and 1970 the Federal Reserve abandoned or modified its constraining control operations in order to abort what it interpreted as an incipient financial crisis. In doing this it effectively added to the supply of assets which protect against illiquidity² and thus appreciably increased the effective quantity of reserve money - even though the standard reading of the economic indicators would have it that the control functions called for a continued monetary constraint.

A view of the financial world and of the economy that explicitly incorporates uncertainty - which takes the form of an amalgam of Keynes and Simons - is needed before a valid explanation and interpretation of the problems faced by the Federal Reserve over the past decade can be offered.

¹Darryl F. Francis, "Has Monetarism Failed? - The Record Examined", Review, Federal Reserve Bank of St. Louis, March 1962, pp. 32-38.

²Perhaps simply by stating that discount facilities are open to savings institutions.

IV. Descriptions of Standard and Alternative Theory

In an expository and interpretive paper we are limited to describing rather than to doing economic theory. Thus I will venture a capsule statement of standard theory and an alternative. I fully realize that these statements, which are aimed at elucidating particular features that I deem relevant for the particular evaluation of monetary policy I advance, may yield a caricature of the theories.

A. The Standard Theory

The standard macro-economic model in the Hicks-Patinkin-Modigliani tradition, a model that Friedman¹ now explicitly accepts, is the format used by both the fiscalists and the monetarists in explaining how the economy functions and as a basis for their policy recommendations. This model as used for the analysis of policy contains the Hicksian IS-LM apparatus, a Patinkin real balance effect affecting consumption, a money supply relation and a real income determination sub-model which is tied to production functions either by way of the labor market or by an appeal to a Walrsian moving equilibrium.

This standard model views the world as having two possible states: A less than full employment state in which all of the conditions except those in the labor market are satisfied and a full employment state in which all of the conditions are satisfied. In the less than full employment state it is accepted that the dynamics are such that a tendency to move toward full employment is set off.² In one tack endogenously induced changes - primarily operating by way

¹M. Friedman, "A Theoretical Framework for Monetary Analysis", Journal of Political Economy, March/April 1970, pp. 193-238.

_____, "A Monetary Theory of Nominal Incomes", Journal of Political Economy, March/April 1971, pp. 323-337.

²Clower's argument, that notional excess supply in the labor market does not necessarily trigger an appropriate dynamical process, is not generally accepted. R.W. Clower: A Reconsideration of the Microfoundations of Monetary Theory", Western Economic Journal, Vol. 6, pp. 1-9. Also R.W. Clower, "The Keynesian Counter Revolution: A Theoretical Appraisal", The Theory of Interest Rates, ed. by F.H. Hahn and F. Brechling, London: Macmillan & Co. Ltd., 1965. Ch. 5, pp. 103-25.

of price-induced wealth effects in the consumption functions - set off a movement from less than full employment to full employment. In another tack it is argued that these endogenous changes are blocked by barriers to the required price changes so that the economy tends to be frozen at less than full employment. In this second tack policy, either monetary, fiscal or some apt combination of the two, can overcome the barriers so that full employment is achieved.

Within this standard framework, at full employment, there are no endogenous forces tending to induce change: Full employment is not a transitory state en route, by however a roundabout path, to less than full employment. Thus if instability exists, if unemployment and depressions succeed full employment, the only explanation available within the standard framework is by way of some exogenously determined change.

The labor and investment demand functions of the standard model are based upon an aggregate production function. Exogenously determined changes in these functions are "available" by appealing to technological change. However technological change is a slow, steady process and is really not adequate as a basis for an explanation for the marked observed changes such as took place in the 1960's. Similarly accumulation that "exhausts" investment opportunities does not stand up as an explanation of the instability of investment.

The labor supply and consumption functions are based upon assumed stable preference systems; thus they are not good candidates for an explanation of exogenous changes that induce a transition from full employment to less than full employment.

The only serious candidates for exogenous changes that induce a transition from full employment to less than full employment are the policy related variables: money and the government's fiscal postures.

I hesitate to use remarks as reported in the press - even the usually reliable New York Times and the Wall Street Journal - as the basis for a comment on the views of a professional, but, because it is such a fine illustration of the point I want to make, I will succumb. Professor Alan Meltzer is cited in the New York Times and the Wall Street Journal of April 7, 1972 as accusing the Federal Reserve of having been a prime cause of the very unstable financial and economic conditions in the nation since 1966. Professor Meltzer's views are an advance over those of President Francis - at least he realizes that unstable financial conditions can exist and are important. However his view point is that such financial and the related economic instability are due to policy, that instability is due to human error and not to any characteristic of capitalism. Obviously Meltzer overlooks the evidence from history: Financial instability was a recurring characteristic of American capitalism before the establishment of the Federal Reserve System.

I believe a kinder view can be taken of Professor Milton Friedman's view as reflected in his presidential address¹ and his recent articles in the Journal of Political Economy.² In Friedman's view there is a 'natural' equilibrium of the Walrasian system³ and this carries with it a 'natural' unemployment rate. There is no reason to believe that this 'natural' unemployment rate or income level is "good enough" : conceivably the 'natural' rate of unemployment could be at a politically unpalatable measured rate. By increasing the rate of growth of the money supply (or by fiscal stimulus?) the measured unemployment rate can be lowered below the 'natural' rate. To sustain this lower unemployment rate ever increasing monetary doses will be required.

¹M. Friedman, "The Role of Monetary Policy", American Economic Review, March 1968.

²op. cit.

³F. H. Hahn, "Professor Friedman's Views on Money", Economics, February 1971, argues that Friedman's appeal to a moving Walrasian system is illegitimate when the economy contains money.

Furthermore this accelerated pace of the economy induces both capital shortages and inflationary expectations, so that investment booms and liability experimentations are also induced. In time an untenable inflation and debt position results. Either endogenously or because of an attempt to constrain the inflationary boom by slowing down the rate of growth of money, the expansionary overshoot leads to either an orderly liquidation or a financial crises. In both cases a debt-deflation process results.

In this view the original sin is the attempt to do better than nature allows: The effort to do better than the natural unemployment rate leads first to an overexpansion and inflation and secondly to a depression. Once again, financial instability and business cycles existed before the development of active "stabilization" policy. Simons' view, implicit in the earlier citation, is that the supply of money and near monies may be the proximate cause of the observed cycles and instability but that the basic causes are those investment demand relations and profit opportunities in finance that induce accelerated increases in the rate of growth of money and near monies. This view, which holds that instability is endogenously generated, seems better suited to our situation than Friedman's view.

For the fiscalists, the movement from full employment to unemployment can be rationalized by fiscal drag. The fiscalists favor large scale econometric models as the basis for their analysis and forecasting. These models are naive in their descriptions of monetary and financial relations. Thus an investment boom and the conditions conducive to financial crises cannot be captured within their formal structure. As their models are very complex structurally, it is well nigh impossible to integrate knowledge of the institutional and usage characteristics of the economy with their formal results. At best allowance for changing financial relations can be added after the event by shift parameter; they are not as yet contained within the formal structure.

Fiscal drag is quite easy to introduce into the formal large scale models. Fiscal drag requires institutional arrangements which lead to an income elastic tax schedule and an income inelastic government expenditure schedule. In this view appropriate adjustment of tax and spending schedules can keep the economy on track. If these models are our view of the world then why business cycles occurred prior to the development of big government is a mystery.

B. An Alternative View

To this point I have not called either model Keynesian because I hold that the standard "Keynesian" model in the literature and in the textbooks misinterprets Keynes' views. Keynes' basic vision is that the economy is intensely financial and endogenously generates trade cycles: a vision which is foreign to the static and growth versions of the neo-classical synthesis. That Keynes' vision differed from the embodied in the standard theories is not important: What is important is that the vision and the analysis that follows from it are relevant to an understanding of and to the formation of policy for today's economy.

The Keynesian analytical apparatus, which enters into the standard models as the IS-LM framework, is used to analyse the business cycle state of the economy. This standard framework is embedded in an apparatus that is designed to capture how decisions are made in the face of uncertainty. Uncertainty is of greatest significance is in wealth holding, for it is here that the inter-¹temporal nature of decisions is most evident. Keynes - in his neglected rebuttal to Viner² - summarized his theory of wealth valuation in the presence of uncertainty as showing that the scale of investment will fluctuate for "... reasons

¹J.M. Keynes, The General Theory of Employment, Quarterly Journal of Economics, May 1937.

²J. Viner, Mr. Keynes on the Causes of Unemployment, Quarterly Journal of Economics, November 1936.

quite distinct (a) from those which determine the propensity of the individual to save out of a given income and (b) from those physical conditions of technical capacity to aid production which have usually been supposed hitherto to be the chief influence governing the marginal efficiency of capital." [p. 218 Quarterly Journal of Economics] i.e. production functions and static preference system changes are not the cause of fluctuations.

An essential attribute of Keynes' theory is that in a world with uncertainty stability is in itself destabilizing. As a result full employment is also a transitory state. Full employment sets up a "disequilibrium" that will lead - by way of intermediate states - to a less than full employment state. The disequilibrium set up by full employment has two aspects: The valuation of the capital stock and the appropriate liability structure to finance both additions to and positions in the capital stock.

We cannot start from "... an Elysian state of moving equilibrium in which real income per capita, the stock of money and the price level are all changing at constant annual rates."¹ We must start with an economy which may now be at 'full employment' but which has a remembered past of less than full employment and financial trauma. The past has left a legacy not only in the form of physical and human capital but also in the form of a structure of financial liabilities. As we have a complex layered financial system units exist whose assets are other units liabilities.

In this economy firms - and households for that matter - finance positions in the assets they hold for their activities by various liabilities. These liabilities set up cash flow commitments, both to repay principal and an income account interest or dividends. A paying unit can obtain such cash as a result

¹ M. Friedman and A.J. Schwartz, "Money and Business Cycles," Chapter 10 in M. Friedman, The Optimum Quantity of Money and Other Essays, Chicago 1969, p. 229.

of operations - gross profits after taxes but inclusive of interest paid would be a measure of corporate cash flow from operations - by contract - as from a mortgage - by selling assets, or by borrowing. For example banks expect to meet almost all of their clearing losses over a period by clearing gains - they normally expect to refinance their position in their assets.

There are no hard and fast technical considerations or rules that determine the appropriate liability structure for any set of assets - or the appropriate assets to hold with any set of liabilities. A mere glance at the changes in the liability structure of corporations and banks between 1960 and 1970 is evidence for the proposition that the debt structures can change markedly. The relation between internal funds - gross profits after taxes - and fixed investment by the corporate sector has fluctuated, as is evidenced by Table I. In particular the corporate investment financing position went from a surplus that was 9.3% of fixed investment in 1964 to a deficit that was 24.6% of fixed investment in 1970.

The willingness to increase the ratio of debt financing of investment is compounded by three factors: a rise in the expected cash flows from investment, a decrease in the expected variance - especially downside deviations - of corporate gross profits, and a decrease in the aversion to risk in the preference systems of both investors and financiers. These changes take place as a result of the success of the economy. A period such as the early through middle nineteensixties will induce "euphoria" into businessmen's decisions: asset prices, including common stock prices, will rise relative to the price of current output. In this way, by raising the market price of the stock of real assets relative to their costs of production sustained stability will induce an investment boom.

As Keynes argued investment depends upon animal spirits. Success of the economy will breed optimistic views as to the likelihood of success and will downgrade the likelihood of failure. Endogenously generated euphoria breeds an investment boom financed to a larger extent than usual by debt. It is this debt financing that in time leads to financial difficulties.

It must be noted that both new investment and positions in the "inherited" stock of capital need to be financed. In a period of euphoria, the view grows that positions in the stock of assets have been financed too conservatively. Increases in debt to free financial resources and to take over existing firms and production capacity also characterizes an euphoric period.

In 1965 and again in 1969 the euphoric mood resulted in a burst of corporate investment. This burst in corporate investment resulted in a substantial rise in interest rates. In each case this substantial rise in interest rates led to financial difficulties. Just as sustained full employment will lead into a boom so a boom carries the seeds of its own destruction. This takes place because there are either feedbacks from the rising interest rates that affect asset values, so that unstable situations result, or the rise in the short-term financing of long term positions becomes so great that the repercussions following from difficulties of a particular unit will be widespread.

A boom broken by means of a crisis leads to a period of debt-deflation with its associated recession and unemployment. After the debt-deflation and liability restructuring comes to an end, recovery of the spirit of enterprise together with an adjustment of financing terms will lead to a recovery and a movement toward full employment. Once full employment is achieved and sustained the ground is ready for another euphoric boom.

This sketch based upon Keynes' views of the cyclical behavior of a capitalist economy has as its central point the endogenous generation of conditions conducive to financial instability. Financial instability occurred twice recently in 1966 and 1970. In addition in 1971 the United States was hit by a classic international crisis- a flight from the dollar.

C. Would Appropriate Control of the Money Supply Yield Stability?

In the light of the endogenous determinations of liability and asset structures and the 'broad' nature of money, it is clear that any rule for the control of a precisely defined money supply will not be adequate to yield stability. If one wants to use control of the money supply to control the economy then it is necessary to contemplate implementing the revolutionary changes in the financial structure advocated by Simons in the 1930's:¹ An implementation that encompasses continuing discretionary interventions in order to assure that institutional arrangements do not evolve so as to reintroduce instability.

¹Rules vs. Authorities -- op. cit.

V. Financial Instability and Central Banking

Fischer, in 1933, described financial instability as follows:

"There may be an equilibrium, which, though stable, is so delicately poised that, after departure from it beyond certain limits, instability ensues, just as at first a stick may bend under strain, ready at all times to bend back, until a certain point is reached, when it breaks. This simile probably applies when a debtor goes "broke" or when the breaking of many debtors constitutes a "crash", after which there is no coming back to the original equilibrium."¹

At the end of World War II the structure of household and business debts relative to household and firm incomes, and the nature of financial assets owned by households, firms and financial institutions, were such that the financial system was stable. In 1966 the first serious postwar episode of financial instability took place. The rules for monetary policy developed as a result of observations made between 1946 and 1966 are of questionable validity as guides to Federal Reserve actions in the new situation. How in fact did the Federal Reserve react, and how should it have reacted?

A. The Crisis of 1966

In 1966 the crisis centered around the impact of sharply rising interest rates upon the viability of financial institutions and the use by the Federal Reserve of ceilings on interest rates that commercial banks could pay on Certificates of Deposit and time deposits.

As a result of rising interest rates the market value of the portfolio of mortgages held by savings intermediaries was substantially below book value. Simultaneously rising interest rates adversely affected the value of ongoing projects that savings institutions financed. Savings banks thus were affected by an unusually large ratio of scheduled items and a low cash flow from, and a depressed market value of, assets. In a world where short-term interest rates

¹I. Fisher, "The Debt Deflation Theory of Great Depressions," Econometrica, October 1933, p. 239.

were rising, the savings banks were not in a good position to meet rate competition.

The second focus of the crunch, the interest rate ceiling on Certificates of Deposit, was rationalized in part by the need to protect the savings institutions. As the interest rates on marketed short term instruments rose above the ceiling rate on certificates of deposit, a run down of these certificates took place. Some commercial banks with large scale loan commitments when confronted by a run down in resources were forced into the use of municipal securities to make position. This resulted in a sharp break in this market -- and also substantial losses by some banks that were compelled to make position via this market.

The "crunch" was dissipated when the Federal Reserve opened the discount window to banks which otherwise would have used municipal securities for position making and announced that discounting was available to savings institutions. Furthermore legislation was passed which enabled the authorities to set ceiling rates on certificates of deposit which discriminate by size, thus partially insulating the savings bank from commercial bank competition for funds.

The crunch 'shocked' banks and borrowers sufficiently so that there was a "pause" in the expansion; in particular the rate of increase of investment was decreased.

After the crunch the Federal Reserve expanded the reserve base quite rapidly. In part it was a standard behavior of the Federal Reserve in the face of a rising government debt. In addition, it may well have been motivated by a desire to keep interest rates low so that the pressure on the savings intermediaries would be eased. The combination of monetary ease and the expansion of government expenditures with the escalation in Viet Nam meant that the pause was quickly

followed by a resumption of the investment boom: Corporate fixed investment increased by 12% in 1969 over 1968. This expansion and boom was associated with sharply rising interest rates as well as rising prices.

In retrospect the Federal Reserve might well have over-reacted to the crunch: However the monetary-fiscal policy adopted had the correct thrust, if the events of 1966 are interpreted as an incipient financial crisis.

B. The "Squeeze" of 1970

In 1969 the new administration was determined to avoid what it believed to be the stop-go monetary-fiscal policies of the previous administration. It initially programmed a budget surplus and a constrained growth in the money supply.

The economy it inherited was buoyant -- investment plans in dimensions running from chicken stands to airline seats were based upon "euphoric" expectations. The constrained growth in the money supply meant that growth of bank financing was restricted. As is shown in Tables I and II in 1969-70 corporate fixed investment was in the 80 billion dollar range and corporate internal funds were in the 60 billion dollar range: External finance measured about 25% of fixed investment. As a result of this huge desire to finance externally, yields on bonds rose and the price of equities were driven down. As long term interest rates rose, pressure on corporate finance officers to speculate by financing both investments and positions through short term loans increased. Bank loan demand increased and with it bank interest rates.

Once again the Federal Reserve allowed a ceiling on interest rates on certificates of deposit to become effective. The Federal Reserve apparently had been impressed with the power of this tool in 1966 and they used it again.

In 1966 the "dip" or "pause" was short lived. As a result, in 1969 promoters of both chicken stands and airline capacity were not going to allow themselves to be easily affected by the assumed transitory financial pressures.

This was so because recent experience had "demonstrated" that the Federal Reserve and the government were both willing and able to turn pauses around and to ameliorate the consequences of financial stringency. Under these circumstances banks and business made plans as the basis of prospects "after the valley" and took whatever steps they could to evade the financing constraints due to the "tightness" of bank credit. The roster of financial devices used in the 1969-70 period is impressive. Of particular importance was the growth of commercial paper and the recourse to the Euro-dollar market for bank reserves. Of lesser importance in 1969-70 but perhaps a foretaste of what might be expected in a future situation of this type, was the rise of the ineligible acceptance.

The rapid run up in short term paper outside of "normal" banking channels was accompanied by a shortening of maturities on such paper. To an ever increasing extent positions in assets and new investment were financed by rolling over debt. In 1969-IV and in 1970-II in excess of twenty-six percent of fixed investment was financed by external funds.

In mid-year 1970 the speculative bubble burst with the Penn-Central failure. The focus of the crisis was the commercial paper market. The Federal Reserve quickly increased the lending ability of the banks so that floating debt could be refinanced by borrowing from banks -- i.e. firms threatened with runs on their commercial paper could refinance their positions by borrowing from banks. Furthermore the Federal Reserve system actively intervened so that particular threatened organizations were refinanced.

Once again the liquidity crisis led to a slowing down of activity and this time the result was an acknowledged recession and a period of protracted slack. During 1970 and 1971 a large scale refinancing and funding of short term debts into long term debts took place. In spite of increasing government spending and reducing tax burdens, the economy did not respond as quickly as following 1966, when re-expansion was quickly affected.

One reason for the sluggishness is quite clear: As a result of both the conglomerate movement and investment demand financed by debt, corporations had built debt structures during the 1960's which in the light of the events of the squeeze and the recession, were now (in the early 1970's) deemed to be too great. Thus debt funding and a slow down in the rate of increase of investment spending took place. As is evident in Table II, the various tax policies as well as the recovery gave rise to an increase in excess of 20% in annual rate corporate gross internal funds between 1970-IV and 1971-IV. This rise in internal funds relative to investment is an indicator that pressure has relaxed and perhaps a harbinger of renewed expansion.

The financial squeeze of 1970 was more of a crisis and posed more serious dangers for the financial system than the crunch of 1966. Coming quickly after the crunch it made it quite apparent to all that uncertainty had not been banished by the skills of either the new or the new-new economist -- and for at least a transitory epoch firms seemed to realize that their liability structure and asset holding combination determined in which casinos and for what stakes they played.

Although a recession and sluggishness were not avoided in 1970-71, the Federal Reserve did prevent what could otherwise have been a classical debt-deflation process, initially centering around the commercial paper market, from taking place. In order to do this, the Federal Reserve once again used discount and open market operations to support the market.

Both 1966 and 1970 were exercises in economic brinkmanship. In both cases the Federal Reserve fostered runs on commercial banks by the enforcement of ceiling interest rates. Whereas the 1966 crunch might have been inadvertent. The question I cannot answer is whether 1970 was deliberate.

C. The Dollar Crisis of 1971

A run on the dollar came quickly after the Penn-Central crisis. In part this was a repatriation of Euro-dollars borrowed when an euphoric economy was confronted by monetary constraint, in part this was a response to a deteriorating balance of trade. This crisis, by again emphasizing the fragility of the financial structure, reinforced the thrust toward more conservative liability structures for firms and financial institutions that had been set off by the squeeze of 1970.

A special anomaly arises in 1970-71 because of the huge balance of payments deficit in those years. In 1970 the rest of the world acquired \$10.3 billion of U.S. government securities; in 1971, \$28.3 billions. In calendar 1970, the Federal Government issued \$12.8 billion of U.S. government securities, in 1971, \$25.5 billion. Over the two year period, U.S. government securities outstanding rose by \$38.6 billion and foreign holdings of U.S. government securities rose by \$38.3 billion. In a closed economy deficits of the size the United States enjoyed over these two years could be associated with a large scale pumping of protected, liquid, and default-free assets into the portfolio of the Federal Reserve System, Commercial Banks, and other financial institutions as well as the portfolios of the non-financial sectors. Such a "pumping" of government debt into these portfolios would tend to increase the robustness of the financial system -- thus setting the stage for a renewed burst of the financing of spending by private portfolio adjustments.

Although large deficits were achieved in 1970, and again in 1971, the expansionary effect of the deficit was attenuated by inept fiscal policy (the reliance on tax reductions and increases in transfer payments rather than government purchases) and the fact that the deficit was not associated with an equivalent increase in the holdings of government debt by banks, financial institutions, and private portfolios.

VI. Structural Reform and Policy Techniques

There are two aspects of reform. The structure of the financial system or the way in which the Federal Reserve operates within the given structure can be changed.

A. Reform of Structure

An immediate recommendation is to modify the standard American mortgage from the present fullyamortized fixed interest rate instrument to a fully amortized variable interest rate mortgage. Ever since operation twist of the early 1960's gave way to a sharp rise in mortgage rates, it has been obvious that if the Federal Reserve is to use the quantity of money as a guide to policy, the standard mortgage must be modified so as to increase its compatability with fluctuating interest rates. Arguments can be advanced that with risk averters as lenders, the average rate over time will be higher with fixed interest rate mortgages than the average of the fluctuating rates with variable interest rate mortgages. With variable interest rates the cash flow to savings intermediaries from mortgages will always be able to finance competitive interest rates on deposits.

If support responsibilities mean that the Federal Reserve stands ready to intervene in any one of a broad range of markets, then the Federal Reserve should have points of regular contact with these markets. For this to happen secondary markets in a variety of instruments need be developed. The Federal Reserve can encourage such secondary markets by financing some of the position of the market makers at a favorable rate by way of an extended discount window. Such a market subsidy does not preclude truly penal financing terms for an excess of borrowing over some fixed amount for each market participant.

Such a shift of emphasis to the support of secondary markets will make the discount window much more significant as a source of reserves than at present.

A penal rate at a discount window to a market maker in a secondary market is always a transitory phenomena. Lending rates and bid-asked differentials will tend to adjust so that quite quickly the penal rate no longer embodies a penalty. The significance of the penal discount rate - open discount window technique is that to the protected markets funds are always available in virtually unlimited quantity at the price determined by the Reserve Banks: the adjustment of reserves and of positions is in response to rising prices and changing profitability - not to an administered all or none availability variable.

B. Reform of Policy Techniques

The Federal Reserve should give up its flirtation with ceiling interest rates on time deposits and certificates of deposits. The power to induce a run on a market is a dangerous control technique as it reinforces the inherent instability of finance. Once used it then requires more extreme actions to offset the resultant pressures than would have been necessary in its absence.

Once a broad generalized set of secondary markets with access to the discount window is developed, then open market operations will no longer be the "prime" weapon of the Federal Reserve. Open market operations should be engaged in to determine the volume of banking system owned reserves - but any moment's total volume of reserves will be determined by the combination of market reactions to posted terms and open market operations. By always having reserves available at a "known" price, one source of the observed instability is removed.

Once reserve money is fully available at posted rates to a wide set of market makers operating in various secondary markets, then open market operations are not the source of funds for evening out reserve needs and need not be engaged in for purposes of stabilizing money markets. Under these circumstances open market operations can be engaged in solely to determine the volume of owned reserves in the banking system. In an effort to remove what has been an

exacerbating factor in recent financial instability - the behavior of the owned reserve base of banks - it seems advisable that open market operations should have as their aim a steady growth of the owned reserves of the banking system.

My view is not that money calls the tune, my view is that broadly conceived money is endogenous and determined rather than determining. However it seems evident that stop and go behavior of the reserve base might well have amplified past disturbances. Inasmuch as the reserve base with an open discount window is always flexible (at a price) the major impact of variations in open market operations is to vary the ratio of owned to borrowed reserves.

By the standard monetary policy rules, monetary constraint is called for just at those times when financial market conditions are tending toward increased instability. Under these circumstances monetary constraint will either trigger or amplify a debt deflation process. The monetary management techniques I suggest will have the owned reserve base grow at a steady pace while tightening or easing of credit will take the form of higher or lower interest rates at the discount window. Though the monetary policy operating techniques suggested here will not eliminate instability, they might very well eliminate factors which historically have tended to amplify instability.

C. Support Functions and Individual Units

There is a special warning note that has to be added with respect to the lender of last resort or support functions of the Federal Reserve. They can be used by a fearful administration as a rationalization for bailing out and thus institutionalizing inefficiency and incompetence in the economy. I do not know if they are bragging or appologizing but in the Annual Report of The Federal Reserve Bank of New York for 1971 the following paragraph appears (pg. 51).

"Early in the year (1971) this Bank initiated (my emphasis) studies of the financial condition of the Lockheed Aircraft Corporation in view of the difficulties that company was experiencing and as part of the Banks normal (my emphasis) responsibilities in appraising the quality

of paper presented by member banks at the discount window. Then, as the possibility emerged that Government Aid to Lockheed might be forthcoming in the form of loan guaranties, this bank assisted Treasury officials during their negotiations with Lockheed and several commercial banks in anticipation of the enactment of legislation. In August the Emergency Loan Guarantee Act created the Emergency Loan Guarantee Board which formally designated the Federal Reserve Bank of New York as its fiscal agent in the administration of the loan guarantee to the Lockheed Aircraft Corporation."

In the theory of central bank support functions the central bank does not support individual organizations - it supports markets. The markets for municipal securities, savings bank deposits and commercial paper were under pressure in 1966 and 1970. The Federal Reserve rightly intervened to support these markets. In principal central bank support functions do not encompass the sustaining of particular enterprises; support functions exist to make sure that financial markets are robust enough to absorb shock due to the failure or the embarrassment of any particular enterprise, no matter how large. Support functions exist not to prevent shocks but to prevent cumulative debt deflation processes following upon shocks.

VII. Conclusion

To say that the business cycle has been eliminated - as was asserted by economists of the Kennedy-Johnson era - is to assert that the fundamental destabilizing influences of finance in a capitalist economy have been eliminated. However recent experience shows that the business cycle has not been eliminated, capitalist economies still tend to explode and such explosions are followed by crashes and recessions. Nevertheless a strong fiscal posture - primarily a Federal Government whose purchases are significant with respect to the size of the economy - combined with an alert central bank can transform the shape of the business cycle.

On the whole in both 1966 and 1970, when financial instability threatened the Federal Reserve acted promptly and in an appropriate manner. The pause and

the recession were as mild as they were because no debt deflation process took place and for this the Federal Reserve can claim credit. However there are questions as to whether the Federal Reserve's acts prior to the mini-crisis tended to increase unnecessarily the likelihood of a crisis and whether the post-crisis behavior in 1966 carried monetary ease too far.

The suggested structural reforms and the policy proposals - particularly the shift of emphasis from open market operations to the ever open discount window for secondary market operators - are aimed at making the instability inherent in capitalism as painless as possible by minimizing the amplifying powers of monetary policy.

Table I

Fixed Investment and Gross Internal Funds
Non-Financial Corporate Business
1946-1971
(Billions of Dollars)

	Gross Internal Funds	Fixed Investment	Surplus (+) or Deficit (-)	Surplus (+) or Deficit (-) as a % of Fixed Investment
1946	7.8	12.0	- 4.2	-35.0
1947	12.6	16.0	- 3.4	-21.7
1948	18.7	18.2	+ .5	+ 2.8
1949	19.1	17.0	+ 2.1	+12.3
1950	17.9	19.3	- 1.4	- 7.2
1951	19.9	21.4	- 1.5	- 7.0
1952	21.2	22.2	- 1.0	- 4.5
1953	21.1	23.8	- 2.7	-11.3
1954	23.3	23.6	- .3	- 1.2
1955	29.2	26.6	+ 2.6	+ 9.3
1956	28.9	31.0	- 2.1	- 6.7
1957	30.6	34.1	- 3.5	-10.2
1958	29.5	29.8	- .3	- 1.0
1959	35.0	32.8	+ 2.2	+ 6.7
1960	34.4	36.0	- 1.6	- 4.4
1961	35.6	35.1	+ .5	+ 1.4
1962	41.8	39.3	+ 2.5	+ 6.3
1963	43.9	41.2	+ 2.7	+ 6.8
1964	50.5	46.2	+ 4.3	+ 9.3
1965	56.6	54.9	+ 1.7	+ 3.1
1966	61.2	62.7	- 1.5	- 2.2
1967	61.2	66.0	- 4.8	- 7.2
1968	61.7	69.7	- 8.0	-11.5
1969	59.5	78.4	-18.9	-23.9
1970	61.5	81.6	-20.1	-24.6
1971	71.4	86.7	-15.3	-17.6

Source: Board of Governors of the Federal Reserve System
Flow of Funds Accounts

Table II

Fixed Investment and Gross Internal Funds
Non-Financial Corporate Business
1969-III - 1971-IV
Seasonally Adjusted Annual Rates
(Billions of Dollars)

Quarter	Gross Internal Funds	Fixed Investment	Deficit	Deficit (-) as a % of Fixed Investment
1969 III	64.1	81.0	-16.9	-20.9
IV	60.6	82.2	-21.6	-26.2
1970 I	59.7	79.8	-20.1	-25.2
II	61.8	81.3	-19.5	-23.9
III	62.1	84.1	-22.0	-26.2
IV	62.4	81.2	-18.8	-23.1
1971 I	67.4	83.2	-15.8	-18.9
II	71.2	86.8	-15.6	-17.9
III	71.4	87.4	-16.0	-18.9
IV	75.7	89.4	-13.7	-15.5

Source: Board of Governors of the Federal Reserve System
Flow of Funds Accounts