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H.P.M.

**Debt Deflation Processes in Today's Environment**

Hyman P. Minsky

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Livingston College/Rutgers University

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## Economics of Money: Debt Deflation Processes in Today's Environment

At the end of his reply to Viner, Keynes wrote, "This that I offer is, therefore, a theory of why output and employment are so liable, to fluctuations" (QJE, p. 221).<sup>1</sup> Although The General Theory is not a business cycle theory it is very much a formulation of ingredients to a business cycle theory. As the orthodox interpretation of The General Theory forced Keynes' insights and concerns into the market clearing paradigm of Walrasian theory and as the sophisticated modeling devices developed for the analysis of resource allocation within the Walrasian framework were ineptly applied to the analysis of resource accumulation, the business cycle content of The General Theory was lost. Whereas in Keynes--and in Marshall--equilibrium concepts are used as points of departure in arguments which show that disequilibrating forces are at work that disrupt the various defined equilibrium, so that the economy transits among equilibria--the orthodox interpretation of Keynes, as well as the new classical economics, takes the equilibrium defined by model parameters as the "normal" state of the economy.

The theory of The General Theory can be characterized as an investment theory of income and a financial theory of investment. The economic and cycle theory of The General Theory does not allow for any dichotomization of "financial" and "real" economic phenomena when the subject is a capitalist economy. In this theory money is not a device to facilitate trade but rather money is an instrument that arises in the financing of investment and positions in capital and financial assets.<sup>2</sup>

Even though the business cycle has been muted in the years since World War II, insofar as we have not as yet experienced a long and deep recession, nevertheless the economy has experienced increasing turbulence since the middle 1960s. To understand why turbulence emerged out of the tranquility

of the early post war years and why this turbulence has resulted in the peculiar phenomena labeled stagflation it is necessary to return to some basics of monetary behavior in a capitalist economy. In order to do this we start with Irving Fisher's Debt Deflation Theory of the Great Depression and recast the ideas of that theory in a form that is compatible with the way today's economy performs.<sup>3</sup>

In a rough and ready way, which captures the essential truth of what has happened, the years since World War II can be divided into two parts which differ in their broad behavior contours. The first, which ran from the end of the war to the mid-1960s, was an era of tranquil progress during which an "on the whole" a close approximation to full employment at stable prices was achieved. The growth, price and distribution performance of the American economy over the first two decades after World War II may very well be a close approximation to the best that in practice can be obtained from a capitalist economy. While not perfect, this performance was very good indeed. The second part, which began in the mid-1960s and has continued to date, is an era of increasing turbulence and is characterized by stepwise higher unemployment and inflation rates. This recent experience since the 1960s shows that business cycles still characterize our economy, but the shape of the business cycle has changed. The new shape of the business cycle reflects the fact that even though the financial environment and the triggering relation necessary for a debt deflation have "been in place" since the mid-1960s, a fully realized debt deflation has not occurred.

In The General Theory and in the literature on business cycles two types of cycles or fluctuations can be distinguished. One is a mild repetitive cycle in which the economy oscillates. "...avoiding the gravest extremes of fluctuation in employment and in prices in both directions, round an intermediate position appreciably below full employment and appreciably above

the minimum employment a decline below which would endanger life..." [GT, p. 254] and the second is a deep depression cycle in which there is a traumatic crisis that leads to long declines. In these cycles the gap of income above the level that "would endanger life" is much diminished.

Mild and severe cycles are differentiated by the extent of financial system involvement. In mild cycles the financial system remains stable. In deep depression cycles financial crises, and what Fisher characterized as a debt deflation process, are involved. In the post war era, prior to 1965, the business cycles in the National Bureau chronology did not involve any serious deviation from financial stability. In the business cycles of the years since the mid sixties, financial crises threatened, at least the Federal Reserve believed this was so, for it intervened as a lender of last resort. In spite of the financial involvement in the cycles since the middle 1960s the recessions have been short, relatively shallow and the recoveries, at least in their initial stages, have been strong.<sup>4</sup>

Because of the financial crunches since 1966 and the present threat of a financial debacle centering on depositing savings institutions, it is useful at this time to look carefully at Fisher's analysis of the debt deflation process. Fisher begins his exposition by assuming as initial state of overindebtedness. Overindebtedness theories of the Great Depression were not rare at the time of the Great Depression. Research carried on under the auspices of the Twentieth Century Fund advanced an overindebtedness theory of the Great Depression and put forth programs of reform of the financial structure which aimed at avoiding future overindebtedness.<sup>5</sup>

As the Great Depression progressed Irving Fisher, as well as a coterie of economists at the University of Chicago, proposed a radical reform of banking and monetary institutions in the form of "100% money". A "100% money"

banking and financial structure would forbid the practice of fractional reserve banking. It was argued that by making all money fiat or commodity money, "100% money" would prevent the type of decline in the money supply and financing that characterized the Great Depression. As the current growth of money market funds illustrates the pervasive character of banking and the way banking institutions emerge in response to profit opportunities, we can assume that the radical restructuring of banking proposed in the "100% money" schemes would not survive any era of tranquil expansion.<sup>6</sup>

Fisher identified nine links to a debt deflation process. The second link is "contraction of check-book money...". In a comment he holds that "all the events listed occur through a contraction of check-book money." As is well known, the analysis of the Great Depression by monetarists such as Friedman and Schwartz places well nigh the entire "blame" for the Great Depression on the contraction of the money supply. Monetarism and "100% money doctrine" are alike in placing all, or almost all, of the blame for serious business cycles upon the malfunctioning of the money supply. In many ways the "100% money" advocates were more sophisticated than today's monetarists. The proponents of "100% money" recognized that the malfunctioning of the economy was due to institutions and instruments that perform vital functions in a capitalist economy. They therefore integrated their program of monetary reform with a radical restructuring of financial practices. The argument of today's monetarists almost seem to be that if the Federal Reserve got the growth of the money supply right, then the market economy would attain and sustain a position of full employment at stable prices.

Fisher identified a nine link process of debt deflation:

Assuming, accordingly, that, at some point of time, a state of over-indebtedness exists, this will tend to lead to liquidation, through the alarm either of debtors or creditors or both. Then we may deduce the following chain of consequences, in nine links:

- (1) Debt liquidation leads to distress selling and to
- (2) Contraction of check-book money, as bank loans are paid off, and to a slowing down of velocity of circulation. This contraction of checking deposits and of their velocity, precipitated by distress selling, causes
- (3) A fall in the level of prices, in other words, a swelling of the value of the dollar. Assuming, as above stated, that this fall of prices is not interfered with by reflation or otherwise, there must be
- (4) A still greater fall in the net worths of business, precipitating bankruptcies and
- (5) A like fall in profits, often turning them into losses, which, in a "capitalistic," that is, a private-profit, society leads the concerns which are running at a loss to make
- (6) A reduction in output, in trade, and in employment of labor. These losses, bankruptcies, and unemployment, lead to
- (7) Pessimism and loss of confidence, which in turn lead to
- (8) Hoarding and slowing down still more the velocity of circulation. The above eight changes cause
- (9) Complicated disturbances in the rate of interest--in particular, a fall in the nominal rates of interest, that is, the rates expressed in terms of money, and a rise in the real rates of interest, that is, the rates translated into terms of commodities which money will purchase.

This deductive reasoning has been largely confirmed by inductive studies. Evidently, then, debt and deflation go far toward explaining a great mass of phenomena in a very simple, logical, way.

It should be noted that practically all the events listed occur through a contraction of check-book money.\*

(\* I. Fisher, 100% Money, New Haven: The City Printing Co., 1945 (First Edition 1935), pp. 122-123, (Fisher's italics).)

Before we take up the "nine links" in Fisher's exposition of the debt deflation process it is necessary to note that his initial condition is that "...a state of over-indebtedness exists." Fisher's characterization of overindebtedness is that:

(a) over-indebtedness is always relative to other items--to national wealth and income, to bank reserves in general, and to gold in particular, when a gold standard exists; and that (b) over-indebtedness is not a mere one-dimensional magnitude, to be measured simply by the number of dollars owed. It must also take account of the distribution in time of the sums coming due. Debts due at once are more embarrassing to the debtor than debts due years hence; and those payable at the option of the creditor, than those payable at the convenience of the debtor. Thus, debt embarrassment is especially severe in the case of call loans and in the case of early maturities.

But for practical purposes, we may roughly measure the total debt embarrassment of the people by taking the total sum currently due, say within the current year, including rent, taxes, interest, installments, sinking fund requirements, maturities and any other definite or rigid commitments for payment on principal.\*

(\* I. Fisher, Op. Cit., pp. 126-127.)

It is obvious that before overindebtedness can exist it is necessary to have what Keynes identified as "system of borrowing and lending based upon margins of safety". As Fisher recognized any question of the existence or nonexistence of "over-indebtedness" must take into account the "...distribution in time of the sums coming due." Fisher's remark about "call loans" and "early maturities" indicates that the sums coming due include the amount due on account of principal as well as interest. If debt structures generate a distribution in time of sums that need to be paid, it is the asset structures that generate a distribution in time of the sums coming to the unit. The national income (when Fisher was writing national income was an imprecise concept) referred to by Fisher is not enough to determine the sums that need to be paid and that are coming due. Before the prospect of debt deflation in any situation can be assessed it is necessary to "model" both the payment commitments on debt structures and the source of funds by which the commitments can be fulfilled. Because payment commitments and sources of cash are related to financing institutions the structure of financial



intermediation that exists and its evolution through time are determinants of system behavior as affected by the consequences of overindebtedness.

Fisher has overindebtedness "lead to liquidation, through the alarm either of debtors or creditors or both". Fisher does not identify any systemic properties which will transform a "bearable debt" into "over-indebtedness". However if debt is short term a rise in interest rates leads to a rise in payments due, even as a rise in long rates lowers the value of long term financial and capital assets. The margins of safety that Keynes referred to exist in an excess of cash receipts over cash payment commitments, the excess of the value of assets over liabilities and holdings of cash are liquid assets. A rise in interest rates will lead to a decrease in the excess of cash receipts over cash payments and in the value of assets over liabilities, even as it induces an economizing of cash or liquid assets. For any given asset and liability structure there is an outer limit of the structure of interest rates that will preserve adequate margins of safety for the normal functioning of borrowing and lending. These outer limits of interest rates that are consistent with the viability of a debt structure decrease as the ratio of debt financing to owners equity increases. If over time debt financing of positions increases, then the margin of safety in both cash flows and asset values that makes the continued normal functioning of a system of debt possible can disappear as a result of a not unusual rise in interest rates, or alternatively of a not unusual shortfall of profits. The evolution of the debt structure can lead to a situation in which a not unusual event triggers both a desire to reduce debt and an unwillingness to debt finance new endeavors.

Fisher does not identify the ways a unit can get cash to repay loans that fall due. In a capitalist economy there are three basic sources of cash for the payment of commitments. These are the cash flow due to operations

(profits for business and wages for households), borrowing or refinancing, and the sale of assets. In addition there is the possibility that a unit has cash on hand or assets superfluous to its operation which can be readily sold. In all capitalist financial structures a major threat to the viability of the financing structure is that units may be forced to sell out positions in assets which have a thin market in order to raise cash needed to meet payment commitments. Such sales lower the market price of assets and thus the cash that assets can fetch.

Liquidity preference attaches value to assets which can be used to meet payment commitments or which can be used to raise cash for payments. The demand for cash depends upon the structure of payment commitments embodied in the liability structure relative to the cash flow from operations and the existence of financial markets which facilitate refinancing. Liquidity preference embodies the transaction demand for money that is due to the payments that are required by the liability structure.

Once a situation exists where debt payments cannot be made either by cash from operation or refinancing, so that assets have to be sold, then the requirements imposed by the debt structure can lead to a fall in the prices of assets. In a free market the fall in asset prices can be so large that the sale of assets could not realize the funds needed to fulfill commitments. When this happens, widespread insolvency results from systemic illiquidity.

A debt deflation can develop if a shortfall of profits relative to payment commitments takes place. Profit flows are determined by the level of income and in particular, in the no or small government case, by the level of investment. A debt deflation will not get very far if profits are sustained or even increased when income falls.

To understand a debt deflation process it is necessary to specify what is

meant by "a fall in the level of prices". In the attempt to raise cash to pay debt by selling assets downward pressure on the prices of assets will take place. However there is another price level--that of current output. Part of the revenue from current output is a mark up on out of pocket costs times output; this is the profit flow. If prices decline relative to money wage rates, profits will be squeezed and thus decrease the likelihood that payment commitments can be fulfilled. If "policy" aims to prevent a debt deflation, then policy must aim at preventing any significant fall in prices relative to wages. Price deflation that leads to profit deflation increases the likelihood of a severe debt deflation.

Two of Fisher's nine links to a debt deflation process are critical: the course of profits and the availability of refinancing on favorable terms once a debt deflation process is triggered. The crunches of the post war period--those of 1966, 1969/70 and 1974/75, as well as the quick crunch of 1980--can be interpreted as triggering events, in a highly indebted financial structure, which could have led to a debt deflation. In essence distress selling that depresses asset prices and a decline in profits that increases the burden of debt were avoided. The result over the past fifteen years was a series of short recessions and the emergence of the special phenomenon of stagflation.

Fisher starts the debt deflation process by a liquidation of debt "...through the alarm either of debtors or creditors or both." He then lists nine links to the interactive debt deflation process. The first link is that debt liquidation leads to distress selling, i.e., to a lowering of the price of financial and capital assets. Because the "alarm" made businessmen and bankers rethink their debt position, bank loans are paid off, so that a contraction of check book money occurs (step 2). Fisher immediately jumps to a fall in the level

of prices (step 3), a greater fall in the net worth of business precipitating bankruptcies (step 4) which is followed by a fall in profits (step 5). The fall in profits leads to a reduction in output in trade and in employment (step 6) which induces pessimism and loss of confidence (step 7). The last two links are hoarding (step 6) and complicated changes in the rate of interest (step 7).

A much better story of debt deflation can be told today than that which Fisher told in 1933. Furthermore, we do not have to leave overindebtedness or the triggering of the downturn unexplained. The fundamental monetary process in a capitalist economy is the financing of positions and of investment; in particular investment is an exchange of money now for money later. However the money later comes in the form of a flow of gross profits for those capital assets that are used in production. In order to obtain the money now, the financing of the acquisition of capital assets, businesses issue debts. Some portion of the debts used to finance investment, positions in capital assets or positions in financial assets are in turn financed by liabilities that are classified as money for their holders. The existence of a financing network is a basic characteristic of a capitalist economy.

As a result of contracts entered into in the past there are payments due now. The cash flows to units that have payments to make are in the form of profits, payments on owned financial contracts or proceeds from either borrowing or the sale of assets. An important characteristic that characterizes liability structures is whether cash to meet financial commitments arises from "profits", contract fulfillment, refinancing of positions or selling of positions.

We can separate liability structures into those in which profits for business (wages for households) are sufficient to meet financial commitments

and those which require some rollover of debt for contracts to be fulfilled. I have called financial situations where profits suffice, hedge finance and where refinancing is needed, speculative finance. I have called the speculative financial posture in which a net increase in debt must take place, Ponzi finance; in Ponzi financing interest is capitalized.

In a capitalist economy there are profit seeking financial organizations and both businessmen and bankers are free to innovate in finance. The broader the range of financing alternatives the greater the demand for existing assets and the greater the financing available for investment. Greater demand implies higher prices. Any broadening of financing alternatives that increases the available finance for holding capital assets will tend to increase the price of capital assets. But any increase in the price of capital assets increases the margin of safety in any given liability structure by raising the value of assets relative to the value of debts. Thus an increase in the breadth of financing alternatives will first increase the supply of finance but may also increase the demand for financing by increasing the margins of safety in existing and potential contracts.

In any money using economy with debts there will be pockets of money that are committed by the holder to payments that will take place in the (near) future. These "pockets of money" are raw material for short-term debt financing. Innovators in financial markets develop new ways of using cash or of getting cash for both long-and short-term financing. Over a period in which business is doing well the available supply of short-term financing seemingly adapts faster than the supply of long finance. Thus over a period of good times short-term debt increases relative to the flow of cash in the form of gross profits. As short-term debt becomes an increasing part of the debt structure, finance becomes increasingly speculative, in that a larger portion

of maturing debt can be paid off only by issuing new debt. In these circumstances the viability of borrowers becomes increasingly dependent upon the availability of funds through various markets.

A reversion from a speculative debt structure is triggered when interest rates rise so that the payments on new debt as well as on refinanced old debt rise relative to expected cash flows. This will affect the willingness and ability of units to go into debt; a substitution of selling out of positions for refinancing of positions will take place.

Investment is the use of resources over a period of time to create a capital asset that will be used in production over a period of time; the use period for capital assets commences when the investment process is "finished". The production of investment goods takes place because the producers expect to make profits. This means that the prices at which they expect to sell their output leaves a margin after covering costs of production. In investment projects which take a significant time to complete interest on early on costs can be a significant part of the costs that prices must cover. These interest costs will vary as short-term market interest rates change; a rise in short-term interest rates raises the supply price of investment output.

Capital assets are valuable because they are expected to earn profits; the market price of capital assets is a capitalization of expected profits. With expected future profits unchanged a rise in market long-term interest rates lower the market price of capital assets.

Rising interest rates raise the supply price of investment output and lower the market price of capital assets. The gap between the market price of capital assets and the supply price of investment output is the driving force in investment activity. Sharp increases in interest rates can cause the gap to disappear and even become negative. This will affect investment decisions

and, with a distributed lag investment. Both the running down of inventories and the cut back of durable investment, if they are not offset, will lead, with various lags, to a decrease in profits.

The evolution of financial interrelations, so that a structure conducive to a debt deflation emerges, is a normal functioning result of the demonstrated profitability of using debt to finance activity and asset holdings. The susceptibility of the economy to a debt deflation depends upon the minimum set of interest rates that would lead to an erosion of the various margins of safety for given cash flows and mix of assets (as embodied in the financial structure) and the level of interest rates that would lower and reverse the gap between the market valuation of capital assets and the supply price of investment output so that the pace of investment decreases. The upward volatility of interest rates in turn depends upon the extent of financing which is interest inelastic (because it is either the refinancing of a position or it is the financing of long gestation investment projects) and the elasticity of the supply of finance with respect to financing terms. The elasticity of the supply of finance mainly deals with the supply of short-term financing and depends upon the elasticity of bank credit and the effect upon the supply of funds of the institutional innovations that are taking place in finance markets.

It is clear in theory--and it has been observed in the economy--the larger the dependence upon speculative and Ponzi finance the greater the likelihood that a sharp run up in short-term interest rates will occur. Once rapid increases in short-term interest rates take place, the expected gain from carrying assets decreases: this leads units to make their payments by selling out positions. A collapse of asset values as a result of excess supply in markets or the inability of units that have maturing debts to make payments are

the triggers of a debt deflation process.

Financial crises always have a "focus"--one or several institutions or markets in which the inability to make payment commitments first becomes evident. The failure to meet payments by these "initiating" institutions means that cash receipts someplace else in the system fall short of the commitments as stated on assets. The repercussions of the initial inability to meet payments is contained only as some form of concessionary finance emerges; either from debt holding organizations or from without. In today's economy concessionary finance almost always involves the Central Bank either directly or indirectly. The Central Bank's actions or interventions almost always involve the introduction of Central Bank liabilities--reserve money--into the economy, either in the refinancing process or to ease the burden of the proximate refinancing organization.

A financial crisis always leads to efforts by borrowers to decrease their dependence upon external funds--which means that business bank loans or open market loans decreases. However we now live in an economy with a large outstanding volume of government debt. Banks, who become uncomfortable with their high loan to asset ratio as the financial crisis progresses, use the resources made available by business paying off loans and Federal Reserve interventions that increases reserves to increase their holdings of government securities. As a result interest rates fall and the quantity of bank deposits is sustained. The decline in the money supply, step 2 in Fisher's scenario, does not take place.

The fall in the level of prices (Fisher's step 3) is presumably a fall in output prices; the fall in the price of assets sold out by banks and other financial institutions as the crisis was triggered, is presumably stopped by the Federal Reserve's intervention. However for output prices--and for



wage costs--to fall, excess supply on product and labor markets on a significant scale needs to develop and be maintained. Fisher's step 3 cannot be assumed to occur in this sequence and early on in a debt deflation process. Fisher places the fall in the net worth of business and an increase in bankruptcies before the fall in profits. A fall in net worth due to the decline in asset values and the rise in the costs of carrying positions is one of the initiating factors in a debt deflation, for it signals a decline in the margins of safety in financing relations. However as part of the cumulative interactive process of a deflation it is a consequence of a fall in profits.

The second input to the aborting of a full-fledged debt deflation process occurs when big government intervenes to sustain profits. Although sustaining and increasing of business profits has never been an avowed objective of active fiscal policy--employment or income have been the avowed policy objectives--a major effect of the big deficits that big governments generate when income falls is to sustain profits.

In a great debt deflation such as took place between 1929-1933 the aggregate burden of debt increased even as interest rates fell because of the decline in income and the virtual collapse of profits and asset values. Ever since the early work of Kalecki it has been known that gross profits equals gross investment plus the government deficit but this cash flow to business has never been integrated with the existence of a debt structure and the need to make payments to fulfill obligations stated in debt instruments. With big government Fisher's step 5, the fall in profits, does not occur.

It was noted earlier that investment is a money in money out process in which the money out comes later as income is earned when the capital assets are used in production. The money out is profits. In the  $M - C - M'$  type of statement it has to be recognized that the initial  $M$  is often obtained by

selling debts, issuing equities or retaining earnings, the C is both inventory and fixed capitals and the M' are profit flows, which may be committed to fulfill debt contracts. In the economics of the neo-classical synthesis M' is either the marginal productivity of capital times capital--whatever that may be--or is some empirically estimated relation. In the Keynes and Kalecki economics the fluctuating volume of profits is determined by the composition of demand so that investment, government deficits and the balance of trade affect system performance by affecting profits.

In the current Reagan reconstruction of the economy, if the changes in tax, spending and discretionary policy succeed in lowering the level and income/employment elasticities of tax and government spending relations, the contribution to profits of the deficit for any fall in income and employment will be lowered. Although government will remain big by the standards of the 1920's it will be smaller and less deficit prone. Therefore the economy will be more susceptible to downside deviations than was true in the past fifteen years when debt deflations were aborted.

The sixth link in the debt deflation process according to Fisher is "a reduction in output, in trade and in employment." In each of the recessions that followed the crunches of the sixties and seventies output and employment fell--but "trade" as reflected by consumer taking hardly fell at all. Furthermore consumer demand always led in the recovery. This was mainly so because by the weight of transfer payments in government spending and the sensitivity of transfer payments to declines in employment. The path by which the specific structures of big government of the 1960's and 1970's sustained profits in the face of a decline in income and output was by way of increasing and sustaining consumer disposable income. This structure of government spending meant that inventories of final output were quite quickly reduced

and that the decline of output was never so great that significant abandonment of investment in process took place.

Fisher's final links in the debt deflation process are pessimism, hoarding and complicated disturbances in the rate of interest. The initiating financial disturbances typically induce pessimism. Hoarding, mainly in the form of a transitory shift to more conservative asset and liability structures, does take place. Financing terms change to reflect an increasing awareness of the possibility of disasters. However, as the refinancing crisis is contained by Federal Reserve lender of last resort interventions and profits are sustained by deficits, the initial defensive portfolio behavior wanes. To date, financial turbulence, inflation and escalating unemployment have not led to a lasting pessimistic outlook by business and financiers. The awareness of the power of government to prevent disaster has been reinforced by the exercising of power to dissipate threats of disaster over the past fifteen years.

Thus the modern combination of a lender of last resort that assures that refinancing will be available and a big government that assures that profits will be sustained has prevented the realization of a debt deflation and a deep depression, even though the economy has started on the road to debt deflation and deep depression four times since the mid 1960's. The years characterized by lender of last resort intervention as well as profit sustaining contra cyclical deficits have also been the years of inflation rates that seem to reach a new plateau every time a debt-deflation is aborted and a recession turned around. What is there about the interventions that abort the thrust towards a deep depression that makes for the phenomenon called stagflation?

In normal banking relations a "balance" exists between an inflationary pulse that starts with money creation as credits are extended to businesses and the deflationary pulse that follows when there is an increase in goods and services

sold in order to acquire money to fulfill borrower's contractual commitments. Central Bank interventions as the lender of last resort take place when the goods and services that would be sold to generate cash to meet commitments to banks cannot generate the needed cash. In lender of last resort interventions the Central Bank's guarantee or funds advanced by the Central Bank keeps the "money" which should have been extinguished as the original contract was fulfilled outstanding in the economy. The money supply remains at a higher level even as the commitments by the public or business to make payments to the monetary system is "stretched" out in time. This increase in the ratio of money as a banking system liability to the realized payments to the banking system is inflationary. As a result of Central Bank lender of last resort interventions, the normal offset to the "liquidity" of money holders by the "illiquidity" of debtors in banking relations is diminished.

Even as lender of last resort interventions increase liquidity when refinancing aborts a debt deflation, the deficit of big government, when income and investment fall, sustains profits. However there is a difference between the inflationary impact of sustaining profits by deficits and sustaining profits by investments. Investments if successful lead to an increase in the potential flow of output. Inasmuch as the increased flow of output is deflationary, an increase in investment is inflationary now, when increases in the mark up on the wage bill take place, and deflationary later, when an increased flow of output is realized. When government deficits sustain profits there is no subsequent flow of commodities such as follows investment; this is especially true when government spending is largely transfer payments and for defense. A deficit yields government bonds to portfolios which is inflationary, as well as raising the mark up on other costs for consumer goods.

Thus there is a link between the stagflation since the mid-sixties and the emergence of financial crises, the threats of deep depressions and the measures that halt and reverses the thrust towards a deep depression. A major effect of financial crises and realized deep depressions of the past was to induce financial conservatism. The price paid for this was mass unemployment and perpetuation of the poverty. The rapid Central Bank interventions combined with the profit sustaining deficits of recent years have so eased the pain from exposed speculative and Ponzi financing arrangements that they have not induced financial conservatism.

Monetary theory is specifically concerned with the overall behavior of a capitalist economy that is investing. This behavior depends upon relations that reflect the institutional structure of the economy. Although the evolving financing processes that lead to financial instability are essential characteristics of a capitalist economy in which bankers and their customers are free to innovate, the resolutions of the crises that result from time to time depends upon the institutional characteristics of the economy. The particular institutional characteristics that seem to be most relevant are the relative size of the "government" that can finance a deficit by issuing money or near monies and the willingness and ability of the Central Bank to intervene vigorously to arrange the refinancing of units that cannot meet their financial commitments. Whereas a deficit generating relation of the Federal Government is built into the tax and spending programs, the Congress and the Administration have typically engaged in discretionary action where a "larger" deficit was felt to be needed. Central bank intervention as a lender of last resort is always a discretionary act, whether, at what point, how and on what terms to intervene are always open to decision by the authorities. Economic administration in a capitalist economy cannot be

reduced to a routine such as can be programmed in a computer; furthermore every substantive success in improving some dimensions of the performance of the economy seems to have side effects that lead to a deterioration in other dimensions of the performance of the economy.

## Notes

<sup>1</sup>Professor J. Viner's review of Keynes' General Theory, "Mr. Keynes on the Causes of Unemployment, (Quarterly Journal of Economics 51 (November 1936) 147-167) is a major source of the "Chicago" tradition in economic analysis.

<sup>2</sup>Hyman P. Minsky, John Maynard Keynes, Columbia University Press, 1975.

<sup>3</sup>Irving Fisher, "The Debt Deflation Theory of Great Depressions," Econometrica, 1933, pp. 337-57. Also, Booms and Depressions (New York: Adelphi Co., 1932). Also, 100% Money, (New Haven: The City Printing Co., 3rd Edition, 1945).

<sup>4</sup>Hyman P. Minsky, "Finance and profits: the changing nature of business cycles (Joint Economic Committee of the United States Congress The Business Cycle and Public Policy 1929-80, 1980).

<sup>5</sup>Twentieth Century Fund, "Debts and Recovery," (Twentieth Century Fund, 1937). Also, Clark Evans, The Internal Debts of the United States, (Twentieth Century Fund, 1935).

<sup>6</sup>H.C. Simons, Economic Policy for a Free Society (Chicago: University of Chicago Press, 1948).

<sup>7</sup>M. Friedman and A. Schwartz, A Monetary History of the United States 1957-1960 (Princeton, N.J.: Princeton University Press, 1963).