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Printed at Thames Polytechnic, Woolwich SE18 6PF

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Hyman P Minsky

Thames Papers in Political Economy

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THAMES PAPERS IN
POLITICAL ECONOMY

THE FINANCIAL INSTABILITY HYPOTHESIS: A RESTATEMENT

by

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AUTUMN 1978

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THE FINANCIAL INSTABILITY HYPOTHESIS: A RESTATEMENT*

I. Introduction

It is trite to acknowledge that the capitalist economies are "not behaving the way they are supposed to". However, most economists – especially the policy-advising establishment in the United States – refuse to accept that at least part of the fault lies in the "supposed to". As a result, one source of the troubles of the capitalist economies is that the economic theory that underlies economic policy, which defines the "supposed to", just won't do for these economies at this time.

In this paper the salient features of an economic theory that is an alternative to today's standard theory are put forth. Within this theory, which I call the financial instability hypothesis, the recent behaviour of the capitalist economies is not an anomaly: these economies have been behaving the way capitalist economies with sophisticated financial institutions are supposed to behave once economic intervention prevents fragile financial relations from leading to debt deflations and deep depressions. Because the financial instability hypothesis leads to a different view of the normal functioning of capitalist economies it has implications for economic policy that differ from those of the standard economic theory of our time.

We are in the midst of three closely related crises in economics: in performance, polity and theory. The crisis in performance is that inflation, financial disturbances, chronically high unemployment rates, and instability of international exchanges are not desirable attributes of an economy and yet they now characterize not only the American economy but also well nigh all the more affluent capitalist economies.

The crisis in policy is that both monetary and fiscal policy seem to be ineffective, not only because of the "trade off" between inflation and unemployment that is summarized by the Phillips curve, but more significantly because of a strong tendency for an expansion to become an inflationary expansion which, in turn, leads to an incipient financial crisis. With the current structure of the economy and policy reactions an incipient financial crisis leads to an inflationary recession: what is now called stagnation. In the years since the mid-1960's financial crises have emerged as clear and present, though intermittent, dangers. In the present structure of the economy and policy an inflationary "floating off" of inherited debt has become part of the process that has enabled capitalist economies to avoid deep and prolonged depressions.

*Earlier versions of this paper were read at the Western Social Science Association meeting in Denver, April 1978, in Southampton and in London, July 1978. I want to thank Thomas Buzzeltou, Wallace Petersen. Victoria Chick and Maurice Townsend for comments, as well as the participants in these seminars.

The crisis – in economic theory – has two facets: one is that "devasting logical holes" have appeared in conventional theory; the other is that conventional theory has no explanation of financial crises. The logical flaw in standard economic theory is that it is unable to assimilate capital assets and money of the kind we have, which is created by banks as they finance capital asset production and ownership. The major propositions of neo-classical theory, which are that a *multi-market full employment equilibrium exists* and that *this equilibrium will be sought out by market processes*, has not been shown to be true for an economy with capital assets and capitalist financial institutions and practices. Furthermore, the financing of investment and capital asset holdings within a modern banking environment makes the effective money supply endogenous; endogenous money implies that there is a great deal of deviation amplifying complementarity among markets. Furthermore "too much" complentarity means that no equilibrium exists for multi-market interdependent systems. From time to time, especially during strong economic expansions and contractions, complentarity due to financial interactions becomes a dominant though transitory trait of our economy. Monetary theory cannot assume that monetary changes occur within an economy that always has strong equilibrium tendencies. The very definition of equilibrium that is relevant for a capitalist economy with money differs from the definition used in standard "Walrasian" theory.[1]

The second failure of standard theory is that it has no explanation of financial instability. Three times in the past dozen years 1966, 1969/70 and 1974/75 financial instability loomed large in the United States. From the point of view of standard theory, that which was happening in, let us say, 1974/75 just could not happen as a normal functioning result of the economic process.

The financial instability hypothesis is an alternative to the neo-classical synthesis, i.e., to today's standard economic theory. It is designed to explain instability as a result of the normal functioning of a capitalist economy. Instability of financial markets – the periodic crunches, squeezes and debacles – is the observation. The theory is constructed so that financial instability is a normal functioning internally generated result of the behaviour of a capitalist economy.

The financial instability hypothesis is rich. It not only offers an explanation of serious business cycles but it also offers explanations of stagflation that goes beyond the money supply, the fiscal posture of the government or trade union misbehaviour. It integrates the formation of relative prices with the composition of aggregate demand. In the financial instability hypothesis the pervasive role of profits in the functioning of a capitalist economy is made clear. Profits are that part of prices that support the financial system and the structure of financial relations by providing the cash flows that validate past financial commitments. Profits are also the signals for investments and current financial commitments. Furthermore,

because they differ in how they generate profits, the weighting of competition and monopoly markets in the economy affects the system's reactions to monetary and fiscal policy measures. But more important than these in detailed results is the "big theorem" that emerges: this theorem is that a *capitalist economy with sophisticated financial institutions is capable of a number of modes of behaviour and the mode that actually rules at any time depends upon institutional relations, the structure of financial linkages, and the history of the economy.*

The financial instability hypothesis has policy implications that go beyond the simple rules for monetary and fiscal policy that are derived from the neo-classical synthesis. In particular the hypothesis leads to the conclusion that the maintenance of a robust financial structure is a precondition for effective anti-inflation and full employment policies without a need to hazard deep depressions. This implies that policies to control and guide the evolution of finance are necessary.

II. The Place of the Financial Instability Hypothesis in Economic Theory

The financial instability hypothesis is a variant of post-Keynesian economics. The interpretation of Keynes that has descended from the formalisations by Hicks, Hansen, Modigliani and Patinkin of *The General Theory* has always been of questionable legitimacy.[2] The interpretation of Keynes that is developing under the rather unfortunate label of Post-Keynesian economics emphasizes the importance of time and uncertainty, especially as they relate to capital-asset pricing, investment, and the liability asset structures of households, business, and financial institutions, to an understanding of Keynes. One focal point of the emerging post-Keynesian theory is the proposition that the liquidity preference functions of the neo-classical synthesis is both a poor representation of Keynes' thought and an inept way to examine how money and finance affect the behaviour of a capitalist economy.[3]

In the interpretation of Keynes used in the neo-classic synthesis the liquidity preference function is interpreted as a demand for money function. In the rebuttal to Viner's outstanding review of *The General Theory,* Keynes denied the validity of such an interpretation.[4] Keynes argued that with a given set of long run expectations (and with given institutional arrangements and conventions in finance) the supply and demand for money affects the price level of capital assets. In particular Keynes argued against any view that the effect of the quantity of money was mainly on the price level of output or even the money value of output. Keynes argued that the supply and demand for money determines the price level of capital assets. This objection by Keynes has been ignored and the neo-classical model builders continue to interpret liquidity preference as a demand equation for money. The revival of the quantity theory by Prof. Friedman rests upon a stable demand for money function which permits the money supply to be the

main determinant of the money value of total output.[5] It is but a small step from Friedman's construct to the pre-Keynesian view that the supply and demand for labour yields output and the quantity of money yields the price level.

The current dominant thrust in economic theory, which holds that the Walrasian theoretical scheme of a system of interdependent equations in which relative prices are the only argument, is valid and that the main proposition of this theory, which is that the economy will follow a full employment growth path, is valid, has taken economic theory full circle back to the 1920's and 30's. This time however, the neo-classical theory is buttressed against the objections raised by Keynes by what specialists in the philosophy of science characterize as degenerative and ad hoc assumptions. In the light of the current state of capital theory it is known that the proposition, that an investing economy with money and capital assets generates a growth equilibrium, rests upon a prior assumption that investment goods and capital-asset prices are always equal.[6] This equality assumption is equivalent to assuming that the economy is now and always will be in equilibrium. Assuming the "result" that a theory is "designed" to prove is clearly not admissible. The buttressing of neo-classical theory by the assumption that capital asset prices are equal to investment goods prices reduces neo-classical theory to a tautology.

The view that Keynes advanced in his rebuttal to Viner (a view which appears in *The General Theory*) is that money, along with liability structure preferences, the mix of available capital assets, and the supply of financial assets, generates the prices of capital assets. In Keynes' view, each capital and financial asset is a combination of quick cash and future income. Furthermore, each liability is a dated demand or contingent commitment to pay cash. As a result of the nature of debts and contracts there will always be a subjective return from holding quick cash. The quantity of money determines the amount of quick cash that will be held and thus the subjective returns from holding money. The money prices of those assets which can be exchanged or pledged for quick cash only at a cost and with varying degrees of certainty but which yield cash income streams will have prices that adjust to the standard set by the subjective return on money. In contrast to the way in which the price system for capital-assets is set the price system of current output (both consumption and investment output) is set by the short run profit expectations of firms, demand conditions and the cost of producing output.

In aggregate, and in a closed economy, the costs of using capital assets to produce current output are mainly labour costs. The price system of current output is keyed to the money wage rate as the main determinant of relative unit costs of different outputs.

A capitalist economy, therefore, is characterized by two sets of relative prices, one of current output and the other of capital assets. Prices

of capital assets depend upon current views of future profit (quasi-rent) flows and the current subjective value placed upon the insurance against uncertainty embodied in money or quick cash: these current views depend upon the expectations that are held about the longer run development of the economy. The prices of current output are based upon current views of near term demand conditions and current knowledge of money wage rates. Thus the prices of current output – and the employment offered in producing output – depend upon shorter run expectations. Capital-asset and current output prices are based upon expectations over quite different time horizons: capital asset prices reflect long run expectations and current output prices reflect short run expectations.

The alignment of these two sets of prices, which are based upon quite different time horizons and quite different proximate variables, along with financing conditions, determines investment. Furthermore current investment demand, along with other factors, such as consumption out of profit income, savings out of wages income, the way government taxes and spending respond to income, and the foreign trade balance yields aggregate effective demand. The aggregate effective demand for consumption, investment, government, and export output yields employment.

The financial instability hypothesis starts with the determinants of each period's effective demand. It takes into account the financial residue or legacy from past financing activity and how this legacy both imposes requirements upon the current functioning of the economy and conditions the future behaviour of the economy. The financial instability hypothesis forces us to look beyond the simple accounting relations of the Gross National Product tables to the flows of funds in a capitalist economy where cash payment commitments exist because they are a legacy from past financing decisions.

The Financial Instability Hypothesis which is rooted in Keynes differs from what is explicit in Keynes and other post-Keynesian economists in that financial instititions and usages are integrated into the analysis. Furthermore, because of the emphasis upon finance and the way in which changes in relative prices of current output and capital assets are brought about the Financial Instability Hypothesis is more clearly a theory of the cyclical behaviour of a capitalist economy than the economic theory of other post-Keynesian economists. That is, the Financial Instability Hypothesis leads to an investment theory of the business cycle and a financial theory of investment.

III. Investment, Consumption and the Theory of Effective Demand*

The distinction between investment and consumption demand and the differences in the variables, markets and considerations that affect these demands are crucial to an understanding of:

1. Why a theory of effective demand is necessary,
2. The concept of equilibrium that is relevant for the understanding of an investing capitalist economy and how the relevant concept differs from the concept as used in standard economic theory, i.e. the difference between Keynesian and Walrasian ideas of equilibrium, and
3. The behaviour of a capitalist economy that uses expensive capital assets in production and which has complex, sophisticated and evolving financial institutions and practices.

In recent years a considerable literature on the interpretation and true meaning of Keynes has been produced.[7] Part of this literature consists of interpreting "Keynesian Economics" as a "dis-equilibrium state" within the framework provided by static Walrasian general equilibrium theory. In these interpretations assumptions about market behaviour, in the form of sticky prices, are introduced so that "short side" sales or "rationing" characterizes the equilibrium. The "short side outcome" or "rationing" of jobs yields unemployment as an equilibrium of a constrained system. In these models wage, price, and interest rate rigidities are constraints which lead to the unemployment result. The unemployment result is taken to characterise Keynesian analysis.[8]

This disequilibrium approach completely misses the central problem that was identified by Keynes, which is that in a capitalist economy the variables and markets which determine investment demand are different from the variables and markets that determine the extent to which labour is applied to existing capital assets to produce "current output". Keynes worked with interdependent markets, but the interdependence stretched back and forth through time and the variables and markets that are relevant to one set of time dependent decisions are not the same as those that affect other sets. In these interdependent markets the signals from current utilisation rates to investment demand can be apt, non-existent, weak or perverse depending upon relations and institutions that reflect the history of the economy.

The main issue in the controversy about what Keynes really meant is

*This section reflects discussions with Jan Kregal and Ignazio Mazo and my reading of some of their work in progress

not the discovery of the true meaning of the "Master's" text. The main issue is how to construct a theory that enables us to understand the behaviour of a capitalist economy. Hopefully understanding how a capitalist economy behaves will give us knowledge that will enable us to control and change it so that its most perverse characteristics are either eliminated or attenuated. In this quest Keynes provides us with the "shoulders of a giant" on which we can stand as we do our little bit. Therefore an attempt to understand Keynes is a valid scientific endeavour.

To understand Keynes it is necessary to recognise that Keynes' analysis was not solely given to explaining unemployment. True the massive and continuing unemployment of the 1930's was a "critical experiment" thrown up by history which forced a reconsideration of the validity of the inherited economic theory. However Keynes, while allowing for and explaining the time to time appearance of deep and persistent unemployment did not hold that deep depressions are the usual, normal or everlasting state of a capitalist economy. The collapse of the World's financial order over 1929–1933 was another "critical experiment" that forced a reconsideration of inherited economic theory. Keynes' special theory argued that in a particular conjunction, where a financial crisis and a debt deflation process had just occurred, endogenous market processes were both inefficient and quite likely perverse, in that they would tend to make matters worse with regard to eliminating unemployment. This state of things would not last for ever, but would last long enough to be politically and socially relevant.

Keynes' *General Theory* viewed the progress of the economy as a cyclical process; his theory allowed for transitory states of moderate unemployment and minor inflations as well as serious inflations and deep depressions. Although cyclical behaviour is the rule for capitalist economies, Keynes clearly differentiated between normal and traumatic cycles. In a footnote Keynes noted that "it is in the transition that we actually have our being".[9] This remark succinctly catches the inherently dynamic characteristics of the economy being studied.

Disequilibrium theorists such as Malinvaud persist in forcing the analysis of inherently dynamic problems into their static general equilibrium framework. In this framework constraints and rigidities are introduced to determine the characteristics of the "equilibrium". In doing this Malinvaud hides the interesting and relevant economics in the market and social processes that determine the constraints. The disequilibrium theorists may construct logically sound models that enable them to demonstrate some degree of a theoretical virtuosity, but at the price of making their economics trivial.

Keynes' novelty and relatively quick acceptance as a guide to policy were not due to his advocacy of debt financed public expenditures and easy money as apt policies to reverse the downward movement and speed recovery during a depression. Such programs were strongly advocated by

various economists throughout the world. Part of Keynes' exasperation with his colleagues and contemporaries was that the policies they advocated did not follow from their theory. In the United States economists such as Professor Paul Douglas, Henry Simon and even Jacob Viner, all of whom were at the University of Chicago, advocated what would now be called expansionary fiscal policies well before *The General Theory* appeared. Before Herbert Hoover was President of the United States he was Secretary of Commerce. As such he sponsored Commissions and Reports which advocated a budget that was balanced over the business cycle rather than annually, i.e. under his auspices contra-cyclical fiscal policies were advocated. However these economists and politicians did not have and hold a theory of the behaviour of capitalist economies which gave credence to their policies: their policy advice was divorced from their theory. Keynes' contribution can be interpreted as providing a theory that made activist expansionary policy a "logical inference from a tightly knit theory".[10]

The concept of "effective" or aggregate demand and the market processes that determine each transitory equilibrium of effective demand and supply are central to Keynesian theory and central to an understanding of the dynamic processes that determine the behaviour of the economy. Significant and serious market failures occur because market processes do not assure that effective demand will be sufficient to achieve full employment. Furthermore when effective demand is sufficient, so that full employment is first achieved and then sustained, market processes will take place which lead to a "speculative" investment and financial boom that cannot be sustained.

Effective or aggregate demand is the sum of two demands: consumption demand and investment demand. (Government and the rest of the world are ignored for now.) Businesses offer employment and thus produce output on the basis of the profits they expect to earn by using labour and the existing capital assets to produce and distribute consumption and investment output. In production and distribution demand for labour to use with existing capital assets depends upon what Keynes identified as "short run expectations". In determining the price at which shoes will be offered to American and German distributors for the "next" season; Italian producers need to estimate their labour and material costs over this relatively short horizon.The American and German wholsale and retail firms have to estimate next summer's market for shoes in their country — which mainly depends upon their expectations of income, employment and price developments. Similar short run considerations centering around investment projects under way, authorisations to spend on investment approved by business, and financing arrangements being made affect the employment and output decisions of the producers of goods used in investment. Employment offered in the construction industry, where projects are undertaken on the basis of "orders in hand", also relate to short run expectations. Thus it is short run expectations that lead to the production of consumer and investment goods. Standard gross national

product statistics measure the result over a period of time of a set of short run expectations.

In addition to deciding how to use existing capacity business has to decide whether and how to expand capacity. Whereas the utilisation of existing capacity is determined by price, cost and therefore profit expectations over a relatively short run (six months, one or two years) the decision to expand capacity is determined by profit expectations over a much longer time horizon: ten, twenty and even forty years. Thus uncertainty, in the sense that there is a need to decide and act on the basis of conjectures about future economic and political situations which in no way can be encompassed by probability calculations, enters in an essential way into the determination of that part of today's effective demand that is derived from investment behaviour.

Investment demand is financed in a different manner than consumption demand. It is true that in a world with consumer credit, banks and financial relations affect consumption demand, but consumer demand mainly depends upon income plus the demand for capital assets while investment truly depends upon the conditions under which short and long term external finance are available. Thus the demand for investment output is affected by the long run expectations not only of business men but also of the financial community. Finance and financial markets enter in an essential way in generating the effective demand for investment output.

The distinction between the external financing of household demand — consumer financing and the financing of home ownership — and of investment demand and capital asset ownership by business centres around the time horizon of the credits and the expected source of the funds that will fulfil the debt obligations. Aside from the financing of housing, consumer debt is typically short run. While the banking system does provide business with short term financing, typically for activity based upon short run expectations, the financing of investment and of capital asset ownership involves longer term equity and debt instruments. The cash required to fulfil consumer debt and housing finance obligations normally is received as wages and other household incomes. The cash required to fulfil obligations on the instruments used to finance business debt will be generated by profits and the way in which longer run profit expectations are transformed into asset prices. The role of debt financing and the considerations bankers need take into account are different for household and business debts.

Investment demand determines whether the short run profit expectations of business men who made decisions to utilize the existing production capacity are or are not validated. If investment demand is at the appropriate level then the various outputs produced with existing productive capacity will generate the profits that were expected. If such a result occurs then business will be induced to offer the same employment to produce the same

output, provided that the intervals between the first and subsequent production decisions are so small that the ongoing investments do not significantly affect production possibilities and the liabilities issued to finance investment do not significantly affect cash payment commitments.

Inasmuch as aggregate profits are generated by the way demand affects the utilisation of existing capacity, the validation of short run profit expectations by realised profits depends upon the level of investment activity. It is financed investment demand that forces aggregate effective demand, by means of the multiplier, to the level at which savings equals investment. If investment is stabilised then the aggregate flow of profits is determined and, eventually, by a process of market adjustments, employment will settle at the level that is determined by correctly anticipating the volume of profits that follows from the hypothetically stabilised investment. Thus to each state of long run expectations there corresponds a level of investment, and if short run expectations adjust to the profits implicit in that investment level then there will be a level of employment to which the economy will settle. This level of employment which is consistent with the state of long term expectations, is the "virtual" equilibrium of the system that Keynes considered: it is an implicit rather than an achieved equilibrium, for in truth the effects of investment and financing upon production capacity and payment commitments that were placed in the "ceteris paribus" bag will be taking place and these cumulated effects will change the implicit equilibrium of the system. Furthermore, if the short run equilibrium implicit in the state of long run expectations is attained and then sustained a "stable" or a "tranquil" behaviour of the economy will result. Such a stable or tranquil state of the economy, if sustained for a while, will feed back and affect long term expectations about the performance of the economy. This will affect views of the uncertainties involved which, in turn, will affect asset values and permissible liability structures.

For the economy to sustain a virtual equilibrium of employment in which short run profit expectations are consistent with financed investment, the profit flows must be sufficient to validate debts i.e. business will be able to fulfil their cash payment commitments embodied in their liability structure. But such fulfilment of debt commitments will affect the willingness to debt finance by bankers and their customers: the value of the insurance embodied in money decreases as the economy functions in a tranquil way. Stability — or tranquillity — in a world with a cyclical past and capitalist financial institutions is destabilising.

If a transitory equilibrium defined by the existing short run expectations differs from full employment the question arises as to whether labour, product, or financial market reactions to the ruling situation will affect either short or long run expectations in such a way that a movement towards full employment takes place. Keynes' answer was that this depends upon how the market adjustments affect the state of long run expectations that

guide business men and their bankers as they hold and finance positions in capital assets and as they plan and finance investment spending. In the years of the great contraction 1929—33 it seems clear that responses in labour, product and financial markets to unemployment, excess supply, and difficulty in meeting financial commitments made things worse, not better. Falling wages and product prices, by increasing the burden of cash payment commitments due to existing debts relative to profit flows which depend upon current prices, outputs, and wages, made the state of long run expectations of business men and bankers less, not more, favourable to ordering investment output.

Thus there is a problem of effective demand failures in a capitalist economy that is not due to wages, price or interest rate rigidities. To recognize that such a problem exists it is necessary to specify that we are dealing with an investing capitalist economy that has sophisticated financial institutions. In such an economy employment is offered on the basis of short run profit expectations whereas investment demand, which depends upon long run profit expectations, determines the profits that in fact are realised. Only if market reactions to unemployment change long run expectations so that investment increases and if market reactions to excess aggregate demand change long run expectations so that investment decreases can the system be considered as self-equilibrating with its "equilibirum" in the neighbourhood of full employment.

The financial instability hypothesis by emphasizing the way in which investment demand is generated by the combination of the valuation of the stock of assets, the financing available from internal funds and financial markets, and the supply price of investment output shows how a collapse of asset values, that occurs because of position making problems of units engaged in speculative and Ponzi[11] finance, leads to a collapse of investment. Such a collapse of investment will lead to a short fall in the profit flows generated by capital assets, which in turn makes the fulfilment of business financial commitments more difficult if not impossible. Financial structures and financial interrelations are the phenomena in a capitalist economy that make the development of those long term expectations that lead to a collapse of investment an endogenous phenomenon in the particular circumstances that in fact arise in the aftermath of a sustained expansion.

IV. A Restatement of the Financial Instability Hypothesis

The Financial Instability Hypothesis is rooted in the analysis of the two sets of prices that exist in capitalism, those of current output, which reflect short run or current considerations, and those of capital assets which reflect long run expectations.[12] Thus it is a variant of Keynesian theory.

However the financial instability hypothesis goes beyond what is

explicit in *The General Theory* by integrating the liability structure and the cash payment commitments they imply into the analysis of the determination of capital asset prices and the financing of investment. The view of the economy is from "Wall Street" or "The City". Economic activity is seen as generating business cash flows. A part of these cash flows is applied to validate debt. Anticipated cash flows from business operations determine the demand for and supply of "debts" to be used to finance positions in capital assets and the production of new capital assets (investment output). Money is mainly created as banks finance business and acquire other assets and money is destroyed as debts to banks are repaid or as banks sell assets.[13]

This "Wall Street' or "City" view looks upon the exchange of money today for money later as the key economic transaction. The money today part may involve a financial instrument, an existing capital asset, or investment output. The money tomorrow part may be interest, dividends, repayment of principal *or* the gross profits after taxes from the use of capital assets in production. Acquiring capital assets in general and investment in particular are money today – money tomorrow transactions. Debt financed positions in capital-assets and investments involve two sets of money today – money tomorrow transactions: one set consists of the promises to pay on the debt instrument, the other consists of the returns that will be earned as the capital-asset or completed investment good is used in production.

An economy with a Wall Street cannot be static. Yesterday's debts and capital asset acquisitions have to be validated by today's cash flows; today's cash flows are largely determined by today's investment; today's investment will or will not be validated depending upon the cash flows that are generated tomorrow. Therefore the economic theory that is relevant for an economy with a Wall Street cannot be static; it cannot abstract from time.

The cash flows that validate debt and the prices that were paid, in the past, for capital assets are profits. These profits are capital's share in gross national product, not the net profits of financial reports. The critical question for an economy with a Wall Street is "what determines profits".

The answer that neo-classical theory gives is that the technical marginal productivity of capital generates profits. This obviously won't do in a world where output fluctuates and market power exists. Once the dynamic and cyclical character of the economy is accepted, the production function construct will not do as the basis for the theoretical analysis of either output or of relative factor renumerations.

The existing set of short-run cost curves, which reflect technical capabilities as embodied in capital assets, is the appropriate starting point for the analysis of profit flows. These cost curves state the in fact relation between out-of-pocket costs and output. When cost curves are combined

with market conditions, variations in demand curves (that reflect variations in aggregate demand) translate into variations in gross profits. If gross profits are large enough, the debt structure and past investment decisions are validated.

If, with Kalecki,[14] we assume that workers spend all they earn on consumption and profit receivers do not consume, we get

1. $\pi = I$ (profits equal investment).

This is nothing more than a restatement of S = I (savings equals investment). However, I is a function of (P_K, $P_I(I)$, $E\pi$, Ext. Finance) where P_K = price of capital assets, $P_I(I)$ = supply price of investment goods as functions of investment price, $E\pi$ = expected profits and Ext. Finance = external financing conditions. Thus

1.′ $I \rightarrow \pi$. The causation runs from investment to profits.

Investment calls the tune and finance affects investment. It can readily be shown that

2. $\overset{*}{\pi} = I + DF$,

when DF is the government deficit and $\overset{*}{\pi}$ is after-tax profits.

Furthermore,

3. $\overset{*}{\pi} = I + DF - B\,PDF$,

where BPDF is the deficit in the balance of payments. The Kalecki model can also allow for consumption out of profits $C\overset{*}{\pi}$ and savings by workers SW which leads to:

4. $\overset{*}{\pi} = I + DF - BPDF - SW + C\overset{*}{\pi}$ so that

5. $\overset{*}{\pi} = \frac{1}{1-C}(I + DF - BPDF - SW)$. Profits rather than being determined by technology, as in the neo-classical synthesis where production functions rule the roost, are determined by the economic, political, social and psychological relations that determine I, DF, BPDF, W, SW and $C\overset{*}{\pi}$.[15]

This view of profits as the result of the way the economy in fact functions clearly identifies profits as a cash flow. Viewing profits as a cash flow quite naturally leads to an analysis of the different roles played by profits in a capitalist economy. Realised profits in a capitalist economy are: (1) the cash flows that may (or may not) validate debts and the prices paid for capital assets: (2) the mark-up on labour costs that assure that what is produced by part of the labour force is allocated to all of the labour force. (This allocating of what

is produced by a part to the whole is a device for generating a surplus); and (3) the signals whether accumulation should continue and where the surplus should be used.

Profits, especially profits relative to the cash payment commitments on debts, affect the long run expectations of business and bankers. Profits are the critical link to time in a capitalist economy: they are determined by the existing size and structure of aggregate demand, they determine whether the past debts and prices paid for capital assets are validated, and they affect the long run expectations of business men and bankers that enter into investment and financing decisions. We are dealing with a capitalist economy with a past, a present and a future. In such an economy the extent to which present profits validate decisions taken in the past affects long run expectations and thus present investment and financing decisions; present investment and financing decisions in turn determine the "parameters" within which future decisions will be made. By focussing on profits a theory based upon Kalecki's insights on how profit is generated clearly recognises that we need build our theory to be relevant for an economy that exists in history.

A capitalist economy only works well as an investing economy for investment generates profits. Profit expectations make debt financing possible and help determine the demand for investment output. Investment takes place because it is expected that capital assets will yield profits in the future, but these future profits will be forthcoming only if future investment takes place. Profits are the carrot and the stick that make capitalism work.

Profits result from an excess of prices over unit labour and purchased input costs. The price system for current output allocates profits to particular outputs and thus to particular in existence capital-assets. In the simple model where government and foreign trade are not taken into account, prices and outputs adjust so that profits equal financed investment. Relative price formation, production and employment take place within aggregate economic conditions that are determined by the need for profits to equal investment.

The identification of profits as a flow determined by the income generating process is but one ingredient in the financial instability view. This ingredient leads to the proposition that current investment determines whether or not the financial commitments on business debts can be fulfilled. At a sufficiently low level of investment, income, employment, and thus profits, a significant proportion of the contractual commitments on business debts cannot be fulfilled from the normal sources. Attempts by debtors to raise funds needed to meet commitments by recourse to extraordinary sources, such as the sale of assets, are part of the mechanism by which an initial financial tautness is transformed into a financial crisis. Fluctuations in investment determine whether or not debts can be validated; the question that now has to be addressed is "why does investment fluctuate?"

To answer this question, we turn to the financial system and the debt structure.[16] Any "position" (i.e. a set of owned assets) needs to be financed. The instruments used to finance positions set up cash flow commitments even as the assets "in position" yield cash flows. We can distinguish three types of financial postures:

1. Hedge finance: The cash flows from assets in position are expected to exceed the cash flow commitments on liabilities for every period. As cash in exceeds cash out in every period the expected present value of a hedge finance unit is positive for every set of finite interest rates. The liability structure of a hedge unit consists mainly of long term debts and equity although short term commercial credits to finance work in progress are consistent with hedge financing.

2. Speculative finance: The cash flows from assets in the near term fall short of the near-term contracted payments, but the income portion of the near-term cash flows, measured by accepted accounting conventions, exceeds the interest cost of the debt, and the expected cash receipts in the longer term are expected to exceed cash payments commitments that are outstanding. A unit engaged in speculative finance needs to roll over or refinance debt to meet its near-term financial commitments. The present value of the net cash flows of a speculative finance unit will be positive for one set of (low) interest rates and negative for other higher interest rates. Banks are speculative finance units.

3. "Ponzi" finance: The cash flows from assets in the near-term fall short of cash payment commitments and the net income portion of the receipts falls short of the interest portion of the payments. A "Ponzi" finance unit must increase its outstanding debt in order to meet its financial obligations. Presumably, there is a "bonanza" in the future which makes the present value positive for low enough interest rates. Although "Ponzi" finance is often tinged with fraud, every investment project with a long gestation period and somewhat uncertain returns has aspects of a "Ponzi" finance scheme. Many of the real estate investment trusts that came upon hard times in 1974/75 in the United States were, quite unknowing to the household investors who bought their equities, involved in "Ponzi" schemes. Many of these trusts were financing construction projects that had to be sold out quickly and at a favourable price if the debts to the trusts were to be paid. A tightening of mortgage credit brought on slowness of sales of finished construction, which led to a "present value reversal" (to be defined on page 17) for these projects.

The mix of hedge, speculative and Ponzi finance in existence at any time reflects the history of the economy and the effect of historical developments upon the state of long term expectations. In particular during a period of tranquillity, in which the economy functions at a reasonably close approximation to full employment, there will be decline in the value of the insurance that the holding of money bestows. This will lead to both a rise

in the price of capital assets and a shift of portfolio preference so that a larger admixture of speculative and even Ponzi finance is essayed by business and accepted by bankers. In this way the financial system endogenously generates at least part of the finance needed by the increased investment demand that follows a rise in the price of capital assets.[17]

As the ratio of speculative and Ponzi finance units increase in the total financial structure of an economy, the economy becomes increasingly sensitive to interest rate variations. In both speculative and Ponzi finance units the expected cash flows that make the financial structure viable come later in time than the payment commitments on outstanding debt. At high enough short term interest rates speculative units become Ponzi units and for Ponzi units the accumulated carrying charges at high interest rates on their outstanding short term debts can lead to cash flow requirements that exceed the cash flow expectations that made the initial position viable – that is the initial short run cash flow deficit is transformed into a permanent cash flow deficit by high interest rates.

External finance and interest "rates" enter the investment process at two quite different stages. The production of investment takes time and the early-on costs are compounded at the short-term interest rate in determining the costs of investment output. This is beautifully illustrated in the way construction is financed in the United States. The financing of a construction project leads to the drawing down of funds made available by a Bank; obviously the interest charges on such funds have to be recovered in the "delivered price" of the investment good. The delivered price of an investment good is a positive function of the (short term) interest rate.

An investment good, once delivered and "at work" in a production process, is a capital asset. As a capital asset, its value is the present value of the anticipated gross profits after taxes (quasi-rents) that are imputed to its participation in economic activity. The present value of a capital asset is an inverse function of the (long term) interest rate.

A rising investment demand leads to an increase in investment in process. As investment in process increases, an inelastic component of the demand curve for financing rises. If the supply curve of finance is infinitely elastic, then finance costs do not rise as investment increases. As more investment leads to greater profits, the prices of capital assets, at constant interest rates, increase. Such an increase is an incentive for more investment: the run up of prices and profits that characterises a boom will result. However the internal workings of the banking mechanism or Central Bank action to constrain inflation will result in the supply of finance becoming less than infinitely elastic – perhaps even approach zero elasticity. A rising inelastic demand curve for finance due to the investment in process combined with an inelastic supply curve of finance leads to a rapid increase in short-term interest rates.

Sharp increases in the short-term interest rate increase the supply price of investment output. Sharp increases in short-term interest rates lead to a rise in long-term interest rates. This leads to a fall in the present value of gross profits after taxes (quasi-rents) that capital assets are expected to earn. Rising interest rates shift the supply curve of investment upwards even as they shift the demand curve for investment, which is derived from the price of capital assets, downward. These shifts in the conditions of investment supply and demand lead to a fall in investment, which lowers current and near-term expected profits. Lower profit expectations lower the price of capital-assets, and thus the price that business is willing to pay for investment output.

The fall in profits means that the ability of business to fulfil financial commitments embodied in debts deteriorates. In particular when profits fall some hedge units become speculative units and some speculative units become Ponzi units. The rise in long term interest rates and the decline in expected profits play particular havoc with Ponzi units, for the present value of the hoped for future bonanza falls sharply. The prior Ponzi units find they must sell out positions in assets to meet payment commitments only to discover that their assets cannot be sold at a price that even comes near to covering debts. Once the selling out of positions rather than refinancing becomes prevalent, asset prices can and do fall below their cost of production as an investment good.

What has been sketched is the route to a financial crisis. Whether a full-fledged financial crisis takes place depends upon the efficacy of central bank lender of last resort behaviour and whether gross profit flows are sustained by an increase in the government deficit or changes in the balance of payments. However, even if a full-fledged financial crisis does not take place, the long run expectations of business, bankers, and the ultimate holders of financial assets will be affected by these developments. The risk premiums associated with investment projects will increase and business men and bankers will move towards balance sheet structures that involve less speculative finance.

The recursive process between profits and the effective discount rate for business assets can continue even onto a "present value reversal"; i.e. the supply curve of investment output can rise above the demand curve for investment output so that investment, and, with investment, profits collapse. Once profits collapse, the cash flows to validate even initially hedge financing arrangements will not be forthcoming. (These relations are illustrated in Diagrams I and II.)[18]

Diagram I

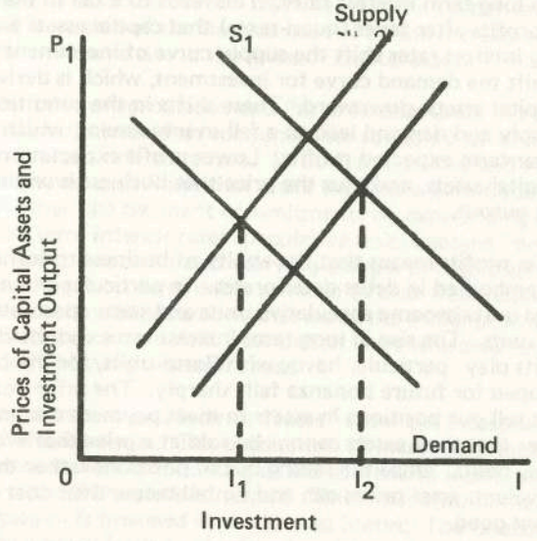
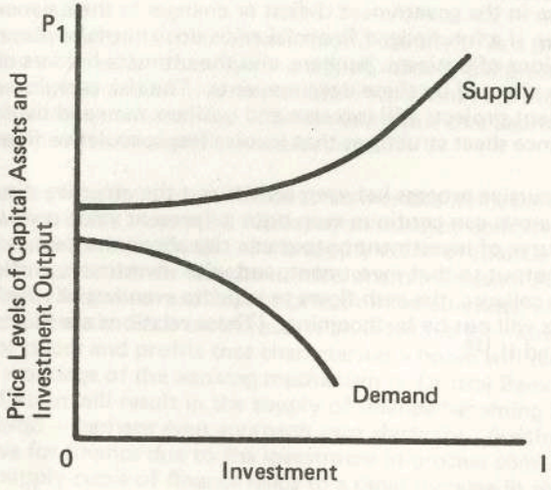


Diagram II



In Diagram I the "normal" situation is illustrated. The demand and supply conditions for investment, taking financial conditions into account, might shift back and forth between I_1 and I_2 as profits, risk premiums and costs of production of investment output vary. In Diagram II the situation in which the repercussions of a 'debt-deflation' have affected both profits and effective financing terms is sketched. In this case the fall of profits has lowered the demand price for capital-assets even as the rise in "lenders' risk" has raised the supply price of investment output for any given level of money wages. What is sketched is the extreme case in which the supply curve "everywhere" lies above the demand curve.

In Diagram I the shifts in the supply and demand curves for investment reflect changes in the variables that enter as proximate determinants of aggregate demand and supply even as the variables that enter into the determination of long run expectations are unaffected. This in particular means that even though there have been variations in earned profits and in the terms upon financing contracts, the current expectations of longer term profits, interest rates and acceptable financial structures have not been changed. In Diagram I a shift to the left of the supply and demand curves can be offset by minor changes in money market conditions, the government fiscal posture and money wages rates.

In Diagram II the position of the supply and demand curves for investment output reflect changes in the long run expectation about profits and desirable financing structure. The shift from the situation illustrated in Diagram I to that of Diagram II reflects the type of unfavourable experience with inherited liability structures that we sketched in the discussion of hedge, speculative and Ponzi finance. In the situation in Diagram II, short term changes in proximate profits, market interest rates, money wages, and the government fiscal posture might sustain income and employment but will not have a quick effect upon the supply and demand for investment output. In particular in a regime of small government, such as existed when Keynes wrote *The General Theory,* neither wage deflation nor money market ease could quickly transform what is sketched in Diagram II into that of Diagram I. In fact because a key element in the emergence and continuation of the situation sketched in Diagram II is the shortfall of profits relative to the financial obligations on inherited debt a decline in money wages which leads to an expected decline in the "dollar" value of profits will make things worse.

That is, whereas variation in market variables that are determined by "supply and demand" conditions in product, labour, and money markets are effective governors of the rate of investment when long run expectations are conducive to investment, variations in these same variables are not effective governors of investment once the shift in long run expectations that occurs with and after a financial crisis has taken place.

Once a situation resembling that sketched in Diagram II esists, the

economy is well on its way to or already in a deep depression. However, whether such a situation fully develops and if it does, how long it lasts, depends upon the government's involvement in the economy; how promptly the government intervenes and how effective the intervention. In 1929/1933 government intervention was minute and late. In particular in the United States the Federal Reserve virtually abdicated its responsibilities as a lender of last resort, which is to assure that those speculative and Ponzi financial positions which would be validated by longer term cash flows at the current (pre-crisis) price level, at a reasonable approximation to full employment income, and at interest rates short of the rates that rule at the peak of the investment boom receive prompt refinancing.

In 1974/1975 the emerging threats of a financial debacle were met by extensive lender of last resort interventions by the Federal Reserve System and a virtual explosion of the Federal Government deficit – which sustained aggregate business profits. The U.S. economy – and with it the world economy – exhibited more resilience in 1974/75 than in 1929/33 because the government's involvement in the economy was much greater and more effective.

The essence of the financial instability hypothesis is that financial traumas, even onto debt deflation interactions, occur as a normal functioning result in a capitalist economy. This does not mean that a capitalist economy is always tottering on the brink of disaster. There are situations where the short term debt financing of business and households is modest, this leads to robust financial markets which are not susceptible to debt deflation processes. There are also fragile financial structures which include a great deal of speculative and Ponzi finance of business and households. The normal functioning of an economy with a robust financial situation is both tranquil and, on the whole, successful. Tranquillity and success are not self-sustaining states, they induce increases in capital asset prices relative to current output prices and a rise in (1) acceptable debts for any prospective income flow, (2) investment and (3) profits. These concurrent increases lead to a transformation over time of an initially robust financial structure into a fragile structure. Once a financial structure includes a sufficiently large weight of speculative and "quasi-Ponzi" finance (of the interim financing of long gestation period investments) a run-up of short-term interest rates, as the demand for short-term financing increases rapidly, can occur. This will lead to "present value reversals", especially if it is accompanied by a rise in the value of liquidity as some units fail to meet financial obligations. As the cost of investment output becomes greater than the value of capital assets being produced, take-out financing will not be forthcoming. This leads to a "collapse" of asset values even further below the supply price of investment output, which further decreases investment. But decreases in investment by decreasing profits makes things worse. The immediate market reactions to a decline in income in the context of a financial structure that is heavily weighted by Ponzi and speculative finance makes things worse; the set of interrelated markets is unstable.

V. Policy Implications

The financial instability hypothesis has serious implications for policy. First of all, it points out that there are inherent and inescapable flaws in capitalism. That capitalism is flawed does not necessarily mean that one rejects capitalism. The financial instability hypothesis emphasises the importance of institutions and the ability of institutions to modify the behaviour of the economy; thus, there are varieties of capitalism. The question may very well be which variety is better, not necessarily for all time, but for now.

In a capitalist economy with a small government, $\pi = I$, so that a collapse in asset values, which lowers I, not only decreases income and employment but it also lowers profits. This not only means that the value of capital assets falls, but it also means that outstanding debt payment commitments, especially by units that are "into" speculative and Ponzi finance, cannot be fulfilled.

On the other hand, in a capitalist economy with a big government, $\overset{*}{\pi} = I + DF$; after tax profits equals investment plus the deficit. If a decrease in I is offset by a rise in the deficit, then profit flows need not fall; in fact, if the increase in the deficit is large enough, profits will rise. This is what happened in 1975 in the United States. The enormous government deficit in the first two quarters of that year helped abort a serious debt deflation process by sustaining gross profits after taxes even as investment fell.

An implication of the proposition that prices must be such as to generate profits equal to investment is that any increase in the ratio of the total wage bill in the production of investment output to the total wage bill in the production of consumption goods is inflationary. Furthermore, any increase in spending on consumption goods financed by transfer payments or profit income is inflationary. As wages that are paid for overhead labour and ancillary business services such as advertising are best considered as allocations of profit, a rise in spending on advertising, executive suites, product research and development is inflationary. Thus, the emphasis upon growth through investment, the bias towards bigness in business, business styles that emphasise advertising and overheads, and the explosion of transfer payments are the main causes of our current inflation.

From the perspective of the financial instability hypothesis, inflation is one way to ease payment commitments due to debt. In the 1970's a big depression has been avoided by floating off untenable debt structures through inflation. Stagflation is a substitute for a big depression. However, the floating off of debt through inflation is a "game" that can be played only a number of times; the propensity to expand into a boom will be atrophied as bankers become wary of Ponzi schemes. Alternatively, government intervention to sustain investment can become so overpowering

that the 'sharp pencils' needed to assure that investment yields real rather than nominal, social rather than private, benefits become blunted.

Every business man and banker knows that for every investment project worth undertaking there are literally an infinite number that are losers. Once the doctrine of salvation through investment becomes deeply ingrained into our political and economic system the constraints on foolish investments are relaxed. This is especially so if the government stands ready to guarantee particular investors or investment projects against losses. A capitalism with a big government that is dedicated to full employment through ostensibly private investment can approach the inefficiencies of a Stalinist economy that refuses to use present value calculations.

In the aggregate the foolishness of bankers, business men and government guarantors are floated off by massive government deficits that lead to profits which validate aggregate past investment and overall business liabilities, albeit at a price in inflation and increasingly inefficient business techniques. The inefficiency of the chosen techniques is reflected by the unemployment that accompanies inflation: stagflation is a symptom of an underlying inept set of capital-assets.

Given that instability is due to the emphasis upon investment and that inflation is due to the emphasis upon investment, transfer payments, and the need to bail out the threatened financial structure,the financial instability hypothesis indicates that an economy that is oriented towards the production of consumption goods by techniques that are less capital intensive than those now being induced by policy will be less susceptible to financial instability and inflation. This suggests that the policy emphasis should shift from the encouragement of growth through investment to the achievement of full employment through consumption production. The financial instability hypothesis suggests that a simplification of financial structures is a way of achieving greater stability, although being rooted in an analysis of the historical dynamics of the financial structure, it also recognises that the enforcement of simplicity in financial arrangements will be difficult.

The financial instability hypothesis also suggests that while there are better ways of running our economy than the way it has been run in the recent past, there is no economic organization or magic formula which, once achieved and set in motion, solves the problem of economic policy for all times. Economies evolve, and with the internal evolution of the economic mechanism the apt structure of legislated institutions and policy operations change: there is no way one generation of economists can render their successors obsolete. I am afraid economists can never become mere technicians applying an agreed-upon theory that is fit for all seasons within an institutional structure that does not and need not change.

NOTES

1. Of the mathematical economists, perhaps F. H. Hahn has been most open about the limitations of mathematical theory. See F. H. Hahn: "On Some Problems of Proving the Existence of an Equilibrium in a Monetary Economy", in R. Clower (ed.), *Monetary Theory* (Penguin, 1969).
"Professor Friedman's Views on Money", *Economica,* February 1971, 38 (149), pp.61–80.
On the Notions of Equilibrium in Economics (Cambridge: Cambridge University Press, 1973).

   Also see

   K. Arrow and F. H. Hahn, *General Competitive Analysis,* (San Francisco Holder Day, 1971), especially Chapter 14, The Keynesian Model, pp.347–369. In introducing their discussion they note that in their earlier proof that a temporary equilibrium always exists they ". . . supposed that at the moment an equilibrium was shown to exist, economic agents had no commitments left from the past . . ." i.e. there are no debts and no capital assets as we know capital assets. It is interesting to note that Arrow and Hahn head Chapter 14 with a quotation from W. B. Yeats, The Second Coming, "Things fall apart, the centre does not hold".
2. Perhaps the best references are:
J. R. Hicks, "Mr Keynes and the Classics: A Suggested Interpretation", *Econometrica,* 5 (1937), pp.147–159.
A. Hansen, *Monetary Theory and Fiscal Policy,* New York: McGraw-Hill, 1949).
F. Modigliani, "Liquidity Preference and the Theory of Interest and Money", *Econometrica,* XII, 1944.
D. Patinkin, *Money Interest and Prices,* (Evanston, Ill.: Row-Peterson and Co., 1956).
3. Among the "key works" in the emerging post-Keynesian synthesis are:
Joan Robinson, *Economic Heresies,* (London: MacMillan, 1971).
P. Davidson, *Money and the Real World,* (New York: John Wiley & Sons, 1972).
J. A. Kregal, *The Reconstruction of Political Economy,* (London: MacMillan, 1973).
S. Weintraub, *A Keynesian Theory of Employment, Growth and Income Distribution,* (Philadelphia, Chilton 1966).
Victoria Chick, *The Theory of Monetary Policy,* (London: Gray-Mills Publishing Ltd., 1973).
4. J. Viner, "Mr Keynes and the Causes of Unemployment", *Quarterly Journal of Economics,* (November 1936), 147–167.
J. M. Keynes, "The General Theory of Employment", *Quarterly Journal of Economics,* (February 1937), pp.209–223.
5. M. Friedman, "The Quantity Theory of Money – A Restatement" in M. Friedman (ed.) *Studies in the Quantity Theory of Money,* Chicago: University of Chicago Press, 1956.
6. This is the outcome of the two Cambridge debates on Capital Theory, although the standard discussion and summary of the debate, G. C. Harcourt, *"Some Cambridge Controversies in the Theory of Capital,* (Cambridge, England: The Cambridge University Press) does not make this clear.
7. R. W. Clower, "The Keynesian counter-revolution: a theoretical appraisal" in F. H. Hahn and F. C. R. Brechling (eds.) *The Theory of Interest Rates* (London: MacMillan 1965), and A. Leijonhufvud, *On Keynesian Economics and the Economics of Keynes,* London (Oxford University Press, 1968), are non-Post-Keynesians who had a part in triggering the discussion of what Keynes "truly meant".
8. E. Malinvaud, *The Theory of Unemployment Reconsidered,* Yrjo Johnsson Lectures, Basil Blackwell, Oxford, (1977), is a sophisticated statement of this approach.
9. J. M. Keynes, *The General Theory of Employment, Interest and Money,* (London: MacMillan, 1936), p.343.
10. M. Blaug, "Kuhn versus Lakatos on Paradigms versus Research Programmes in the History of Economic Thought", in Spiro Latsis (ed.) *Method and Appraisal in Economics,* (Cambridge University Press, 1976), p.164.

11. The Label "Ponzi" refers to a Boston event soon after World War I in which a "pyramid" financing scheme swept through the working class and even affected "respectable" folk.
12. H. P. Minsky, *John Maynard Keynes,* (New York: Columbia University Press, 1975).
13. Malinvaud (op. cit.) introduces money as follows: "Let us consider an economy with r commodities (h = 1,2,..., r), the last one being money; ..." (p.18). Arrow and Hahn in their Chapter 14 of *The Keynesian Model* write "Let the subscript "n" stand for money that we now regard as the non-interest-paying debt of some agency outside our formal system, say the government" p.349. It is clear that "money" in Malinvaud and Arrow/Hahn has no relevant resemblance to the "money" of those economies whose behaviour we are trying to understand when we "do" economic theory. Arrow and Hahn recognise that they are violating reality in their definition and offer apologies for the "primitive monetary ideas" they explore. Malinvaud does not articulate any recognition of the "heroic" nature of his abstractions, even as he offers his work as being "relevant" to the analysis of policy.
14. M. Kalecki, *Selected Essays on the Dynamics of the Capitalist Economy* (1933–1970) (Cambridge: Cambridge University Press 1971), Chapter 7, The Determinants of Profits, pp.78–92. The Financial Instability Hypothesis identifies profits, determined as Kalecki shows, as a cash flow that does or does not validate past financial commitments: it integrates Kalecki's vision of the dynamic determination of profits with the capitalist institutional fact of a liability structure inherited from the past that commits current and future profits. (Incidentally the paper by Kalecki first appeared in 1942).
15. See Thanos Skouras *Government Activity and Private Profits,* Thames Papers in Political Economy (London: Thames Polytechnic, Summer 1975).
16. H. P. Minsky, "The Modelling of Financial Instability: An Introduction", *Modelling and Simulation,* Vol.5, Proceedings of the Fifth Annual Pittsburgh Conference, Edited by William G. Vogt and Merlin H. Mickle. School of Engineering, University of Pittsburgh.
"Suggestions for a Cash Flow Oriented Bank Examination", *Conference on Bank Structure and Competition,* Federal Reserve Bank of Chicago, December 1975.
17. The shift towards speculative and even Ponzi finance is evident in the financial statistics of the United States as collected in the Flow of Funds accounts. The movement to "bought money" by large multinational banks throughout the world is evidence that there are degrees of speculative finance: all banks engage in speculative finance but some banks are more speculative than others. Only a thorough cash flow analysis of an economy can indicate the extent to which finance is speculative and where the critical point at which the ability to meet contractual commitments can break down is located.
See H. P. Minsky, "Suggestions for a Cash Flow Oriented Bank Examination" (op. cit.).
The Flow of Funds reference is: Board of Governors of the Federal Reserve System, *Flow of Funds Accounts 1946–1975,* (Washington, D.C., December 1976).
18. H. P. Minsky, "A Theory of Systemic Fragility", in E. Altman, A. W. Sametz, *Financial Crises* (New York: Wiley Interscience, 1977).