Capitalist Financial Processes and
the Instability of Capitalism

by

Hyman P. Minsky
Economics Department
Washington University (St. Louis)

---

Paper Prepared for the
Association of Evolutionary Economics
"The Financial Structure of Contemporary
Western Capitalism"

2 P.M.  Saturday December 29th
Tara 5 Marriott Hotel
Atlanta, Georgia
Capitalist Financial Processes and
the Instability of Capitalism

by

Hyman P. Minsky

A. Introduction

"Banking is a pervasive phenomenon, not something to be
dealt with merely by legislation directed at what we call banks.
The experience with the control of note issue is likely to be
repeated in the future; many expedients for controlling similar
practices may prove ineffective and disappointing because of
the reappearance of prohibited practices in new and unprohibited
forms. It seems impossible to predict what forms the evasion
might take or to see how particular prohibitions might be
designed in order that they might be more than nominally effective."\(^1\)

In the above, Henry Simons, a founder of the "Chicago School,"
recognizes the endogenous nature of money and the impossibility of
managing money by trying to control the quantity of some specific set of
debts, especially in an economy where the lure of potential profits induces
innovations in financial practices. Simons followed the logic of his
insight into the endogenous and evolutionary nature of money by advocating
strict limitations on the permissible liabilities of enterprises and
binding constraints upon the permitted activities of financial institutions.

In Simons' view control over money requires strict limitations upon
"large scale financing at short terms."\(^2\) Simons therefore proposed to
eliminate the financing, through banks and other intermediaries with
short term liabilities, of positions in capital assets and in investment
in the process of production. Unfortunately for Simons' prescription,
bank and other short term financing of activity is a major link in the
investment process under capitalism. Whereas titles to capital assets
may be financed long, the producing of investment output, like other
production activity, is a short term affair that naturally calls for short term financing.

An essential attribute of modern capitalism is that both positions in capital-assets and investment in process are financed by a combination of debts and commitments of the liquid capital of the proximate owners or producers, i.e. of corporations. Debts are best interpreted as commitments to make payments over time. The flow of cash resulting from the operations of firms are used to pay current costs, fulfill explicit payment commitments on debts, and yield a cash position for the firm and income to the owners of the firm. The debts of firms state the minimum profits, broadly defined, that must be generated if commitments as stated on the liabilities are to be fulfilled either by the flow of profits or by funds obtained by a refinancing arrangement. The entering into and the repayment of debts are essential processes of capitalism: Both processes depend upon profits, expected or realized.

If debts are to banks, then the payments which fulfill commitments on debts destroys "money." In a normally functioning capitalist economy, where money is mainly debts of banks, money is constantly being created and destroyed. Economic theory that focuses on only the exchanges that create money or which assumes that money is "... the non-interest paying debt of some agency outside the formal system," induces no need to examine how borrowers are able to fulfill their commitments and the economic consequences of systemically induced failures to meet such commitments.

On the other hand if money is viewed as a "veil" by which the ultimate ownership of wealth is "camouflaged," then the major concern of monetary theory becomes the expected profits that induces debt creation and the realized profits that lead to the validation of debt. The
transition from abstract economics to the economic analysis of capitalism depends upon defining money as a "product" of financial interrelations.

This was well understood by Keynes when he wrote:

"There is a multitude of real assets in the world which constitute our capital wealth - buildings, stock of commodities, goods in course of manufacture and of transport and so forth. The nominal owners of these assets, however, have not infrequently borrowed money [Keynes's emphasis] in order to become possessed of them. To a corresponding extent the actual owners of wealth have claims, not on real assets, but on money. A considerable part of this "financing" takes place through the banking system, which imposes its guarantee between its depositors who lend it money and its borrowing customers to whom it loans money with which to finance the purchase of real assets. The interposition of this veil of money between the real asset and the wealth owner is a specially marked characteristic of the modern world."  

Any economic theory which ignores this "specially marked characteristic of the modern world" cannot serve as an effective instrument for the design of policies for the modern world. In particular, today's standard economic theory - the neo-classical synthesis - which ignores the "financing veil" aspects of money and persists in viewing money only as a "bartering veil" cannot explain how instability is a normal functioning result in a capitalist economy. As a result, neoclassical theory is a defective instrument to use in the formulation of policies that aim at controlling or attenuating instability. If we are to do better in controlling unemployment and inflation we have to go back to the insights of Simons and Keynes and build an economic theory that fully accepts "the financing veil" characteristic of money.

The current significance of Simon's and Keynes's is not surprising for their insights and analysis were born out of the observed instability of capitalism. Our current difficulties in economics and in the economy stem from our failures to understand and deal with
instability. If we are to do better we must accept being forced back to the square zero of the 1930's.

B. Finance and the Behavior of a Capitalist Economy

Finance affects the behavior of a capitalist economy in three ways:
1). Positions in the existing stock of capital-assets need be financed.
2). Activities, i.e., the production and distribution of consumption and investment goods, need be financed.
3). Payment commitments, as stated on financial contracts, need be met.

The techniques available for financing positions in capital-assets affect the prices of capital-assets. In a capitalist economy capital-assets are priced. These prices reflect the relation between the cash flows - or quasi-rents - that capital-assets are expected to earn as they are used in production and the payment commitments that have to be agreed upon in order to finance ownership. A debt involves an exchange of money today for promises to pay money in the future. The smaller the amount of money in the future that has to be promised in order to receive a sum of money today to finance a position in a capital-asset with some given expected cash flow, the greater the demand for such capital assets.

In the "short term" the supply of capital assets is fixed; therefore, an increase in demand will lead to an increase in the price. Innovations in mobilizing funds through intermediation and in the contracts used for financing ownership of assets will tend to raise the prices of assets. The various "innovations" in housing finance have led to higher prices of housing, the acceptance of a heavier weight of debt in corporation balance sheets has sustained the price of capital assets, and the explosive growth of money market
funds has increased the availability of short term finance to business. Borrowing and lending take place on the basis of margins of safety. The fundamental margin of safety is the excess of the expected quasi-rents from operating capital assets over the cash flow committed by financial contracts. Two time series - the expected receipts and the contractual commitments - summarize the financial position of units. When Henry Simons delivered his strictures against short-term financing he was railing against financing arrangements in which payment commitments exceed the expected quasi-rents from operations for the near term. If businessmen and their bankers agree upon such arrangements, then they must envisage that there are sources of cash to debtors other than the flow of quasi-rents from operations; i.e., cash can be obtained by refinancing. A secondary margin of safety is the "breadth, depth and resilience" of markets in which refinancing can take place.

The financial relations of units owning capital-assets therefore depend upon borrowers and lenders views as to the assuredness of cash flows, the appropriate margin of safety and the availability of alternative sources of cash if cash from operations falls short of expectations. Expectations with regard to cash flows depend upon the history of cash flows, the margin of safety that is deemed appropriate depends upon the adequacy of past margins of safety and the willingness to rely upon refinancing depends upon the history and institutional structure of the markets in which refinancing may take place. Over tranquil years, success combined with institutional evolution makes borrowers and lenders alike more assured of the cash flows from operations, confident that success is compatible with smaller "margins of safety" and secure in cash flow arrangements which require refinancing. Trends in financing
reflect changes in views of how the economy normally functions and in the preference system of "operators." The liability structures used to finance positions in capital assets reflect subjective views as to what is an acceptable chance of becoming illiquid; the essential liquidity preference in a capitalist economy is that of bankers and businessmen and the observable phenomena that indicate the state of liquidity preference are the trends of business and banker balance sheets.

An immediate effect of a change in liquidity preference is upon the money price of capital assets. A decrease in liquidity preference allows an increase in the ratio of near term payment commitments to near term expected quasi-rents to take place. This leads to an increase in the money price of capital assets. An increase in liquidity preference, which typically occurs when quasi-rents failed to validate debt structures or financial markets failed to refinance positions, will force attempts to reduce near term payment commitments relative to expected quasi-rents. This will lead to a fall in the money price of capital-assets.

In addition to positions in capital assets, the production and distribution of consumption and investment goods need to be financed. The cash that enables the "producers" of consumers' goods to fulfill their commitments to bankers is derived from sales proceeds, which, if we abstract from consumer debt, depend upon consumer disposable income (largely wages and salaries). The cash that enables producers of investment goods to fulfill their commitments to their bankers is also derived from sales proceeds, but the "cash" used by the buyers of investment goods is derived from a combination of retained earnings and external finance. The financing of investment goods production leads to debts by investment goods producers. These debts are repaid when capital-asset buyers pay. The capital-asset buyers typically borrow at the least part of their
needed funds. In the investment process a continued funding of debt occurs - albeit it is the short term debt of the producers of investment goods that is "funded" by the financing arrangements of the purchasers of investment goods as capital assets.

A capitalist economy can be characterized by a layered set of payment commitments that are stated in financial contracts. These payment commitments will be fulfilled either by the flow of cash from operations - for business the flow is an "enlarged" gross profits - or by the issuing of debt. The ability to issue debt rests upon the borrowers and lenders expectations of future cash flows; i.e., of future profits. Thus central to an understanding of the functioning of a capitalist economy is an understanding of how the flow of gross profits measured in money is determined.

C. An Aside On "Money Funds"

The points about banking being a pervasive phenomenon and that profit opportunities from "borrowing and lending" lead to financial innovations are beautifully illustrated by the growth and evolution of money market funds in the past several years. These funds, which first emerged in the high interest rate days of 1974-75 and stagnated during the lower interest "stagflation" of 75-77 grew at an explosive rate in 1978-79, when the assets they managed increased by a factor of 10. In addition the percentage of their funds "invested" in open market paper and "miscellaneous" assets rose from an estimated 16.2% in 1975 to an estimated 46.2% in 1979; these funds are now direct suppliers of short term financing.

Any analysis of these funds which looks at the assets they own and the liabilities they issue must identify the institutions as
banks and their liabilities as money. Because of their success we now have a two tier monetary system in which part of the money supply has the protection of bank equity, established channels for refinancing through the central bank and deposit insurance and another part lacks these "margins of safety." When a money supply consists of instruments that differ in their yield and risk characteristics then runs, in which holders of one type of money try to quickly change to another type of money, are possible. If there is no provision for supplying the "desired money" to the institutions which have the "undesired money" as liabilities a run can have disastrous consequences. As financial markets replicate our experience of 1966, 1969/70 and 1974/5 and drive towards the brink of a financial crisis some lender of last resort in interventions because of the money market funds is likely to be needed.

Money market funds are but the latest in a series of financial market and banking practice "innovations" which have changed the nature of the financial system over the past several decades. Beginning with the emergence of the Federal Funds market in the mid 1950's, changes such as the emergence of bank certificates of deposits, the explosive growth of commercial paper, the rise and fall of REIT's, the internationalization of banking and the wide use of repurchase agreements have taken place. These changes have been in response to profit opportunities which result from changing interest rate differentials due to demand for financing growing at a faster pace (at each set of terms for financing from traditional sources) than the supply of financing from traditional sources.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand Deposits and Currency</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.4</td>
<td>.3</td>
</tr>
<tr>
<td>Time Deposits</td>
<td>0</td>
<td>1.6</td>
<td>2.1</td>
<td>1.5</td>
<td>1.8</td>
<td>5.3</td>
<td>14.2</td>
</tr>
<tr>
<td>Credit Market Instruments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. Government Securities</td>
<td>0</td>
<td>.8</td>
<td>1.5</td>
<td>2.1</td>
<td>1.9</td>
<td>5.1</td>
<td>24.1</td>
</tr>
<tr>
<td>Open Market Paper</td>
<td>0</td>
<td>.1</td>
<td>.9</td>
<td>1.1</td>
<td>.9</td>
<td>1.5</td>
<td>7.1</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0</td>
<td>*</td>
<td>.1</td>
<td>.1</td>
<td>.1</td>
<td>.3</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Shares Outstanding</strong></td>
<td>0</td>
<td>2.4</td>
<td>3.7</td>
<td>3.7</td>
<td>3.9</td>
<td>10.8</td>
<td>39.6</td>
</tr>
</tbody>
</table>

OPEN MARKET PAPER + MISCELLANEOUS as a SHARE OF TOTALS %

|                                | 25.  | 16.2 | 27.0 | 30.8 | 37.0 | 46.2 |

* extrapolated at 1979I rate of change

Board of Governors, Federal Reserve System, Flow of Funds Accounts
D. Federal Reserve Operations to Constrain Inflation

A major portion of the traditional supply of financing is from banks. Federal Reserve operations to constrain inflation first constrain the ability of commercial banks to finance asset acquisition by expanding their reserve absorbing liabilities. Financial innovation and evolution are stimulated by the interest rate effects of such Federal Reserve constraining action. Such innovation and evolution offsets a part, all, or even more than all of the constraint upon financing through banks caused by the initiating Federal Reserve actions.

This evolutionary response makes the rate of increase of activity that is financed greater than the rate of increase of commercial bank liabilities that absorb bank reserves: the velocity of money, where money is narrowly defined as currency and reserve absorbing liabilities of banks, rises. Such an increase of velocity to offset Federal Reserve constraint is a normal functioning result in financial markets. The limit on the offset through changes in institutions and usages of monetary constraint is determined by the effect of the cash payment commitments due to the increments of finance upon the cash flow relations of various asset and liability combinations. Monetary constraint does not lead to a quick or smooth deceleration of an inflationary expansion. In the face of an accelerating inflationary expansion monetary constraint first leads to a sharp increase in financing outside of normal banking channels. With a variable lag this is followed by a sharp rise in payments required by debts relative to business profits. Monetary constraint in a situation in which ongoing investment activity leads to a rising demand for finance is effective only as it forces a sharp breal in asset values caused by market pressures to liquidate or fund positions. Ever since the 1960's monetary constraint has been effective
only as it succeeded in pushing the economy to the brink of a debt deflation as is shown by the credit crunch of 1966, the liquidity squeeze of 1969/70 and the debacle of 1974/75. 7

The complex and evolving financial structure of a modern capitalist economy enables businessmen and their bankers to offset monetary constraint until monetary constraint forces the economy to the brink of a crisis that threatens to lead to a deep depression. The fundamental instability of capitalism is upward. Attempts by central banks to constrain upward expansion, or endogenous limits of the financial system lead to present values and cash flow relations that break rather than attenuate the expansion. Once the expansion is broken, the effect on capital asset prices of expected higher nominal profits is removed. This implies that capital asset prices will tend to decline sharply. Such a decline will lead to a fall in the demand price and the available financing for investment. Once the price of capital assets reflects inflationary expectations an end to the inflationary expectations will lead to a sharp fall in investment. The upward instability of capitalism is a necessary precondition for the possibility of a deep depression.

E. Capital Asset Prices, the Supply of Investment and Financing Arrangements

In a brilliant, incisive and unfortunately neglected article published in 1955, Dudley Dillard noted that to Keynes the "problem of economics" was the analysis of the behavior of a Monetary Production economy. Dillard argues that in The General Theory—and in the interpretative literature that followed—the emphasis is upon the way in which money enters into the determination of interest rates. As I pointed out, 9 in The General Theory and in later pieces in which Keynes clarified the content of The General Theory, 10 liquidity preference
was treated as a relation between money and the price level of capital assets.

Although a money-interest rate relation and a money "price level" of capital assets relation can be made formally identical, in truth they lead to quite different perspectives on how a capitalist economy works. Once an interest rate money supply relation is accepted as the theoretical correlative of how financial markets affect the operations of the economy, the way is clear for the monetarist counterrevolution in which the liquidity preference function becomes a demand function for money. The stability of the demand function for money along with the exogenous determination of the supply of money are the rocks upon which the specularist monetarist faith rests.

The price level of capital assets and the interest rate statements of liquidity preference lead to quite different views of the economic process. The perception that the quantity of money determines the price level of capital assets, for any given set of expectations with respect to quasi-rents and state of "uncertainty," because it affects the financing conditions for positions in capital assets implies that in a capitalist economy there are two "price levels"; one of current output and the second of capital assets. A fundamental insight of Keynes is that an economic theory that is relevant to a capitalist economy must explicitly deal with these two sets of prices. Economic theory must be based upon a perception that there are two sets of prices to be determined and these prices are determined in different markets and react to quite different phenomena. Thus, the relation of these prices—say the ratio—varies and the variations affect system behavior.
When economic theory followed Hicks\textsuperscript{14} and phrased the liquidity preference function as a relation between the money supply and the interest rate, the deep significance of Keynesian theory as a theory of behavior of a capitalist economy was lost.

The demand for current output consists of the demand for consumption and investment outputs in the "no government" case. The demand for investment depends upon the price of capital assets, the supply price of investment output, and the financing condition and availability of internal finance for investment output.

In the attached schematic diagram the investment and financing relations of a representative firm are set out. \( P_k \), the money price of capital-assets, is the demand price of investment output \( P_k \). It depends upon what Keynes called the state of long term expectation, which leads to current views about future profits, the financing conditions that are available for positions in capital assets and the supply of money, defined as the default free assets that yield only liquidity.

\( P_I \) is the supply function of gross investment. The "position" of \( P_I \) depends upon the short run profit expectations of the producers of investment goods. The supply curve of investment output states the minimum price at which particular outputs of investment goods would be produced given current money wages, the carrying interest costs of investment goods as they are produced, and the cost of purchased inputs.

The existing liability structure of firms determines the cash payment commitments. The sum of gross profits after taxes and interest paid on debts as reported in the national income accounts is the gross capital income. This gross capital income minus gross payments on debts and dividends yields the gross internal finance. The price
times quantity of investment goods that can be internally financed yields a rectangular hyperbole ($\hat{Q}_1$ in the diagram) which defines the combinations that can be so financed. The intersection of the expected internal finance and the supply function of investment goods yields the amount of investment that it is expected can be financed internally. In the diagram this is labelled $\hat{i}$.

External finance is required if investment is to exceed $\hat{i}$. Given that $P_K > P_I$ there will be a demand for external finance to acquire investment. The supply price of investment output has to be modified by the cost of debt financing, which reflects the premiums upon a constant interest rate that reflect lenders risk. Furthermore, the demand price for investment will fall away from the price of capital assets to reflect borrowers risk. Investment will be carried to the point where the price of capital as affected by borrowers risk equals the supply price of investment output as augmented to reflect lenders risk. In the diagram say $I_1$ of investment will be undertaken of which $\hat{i}$ is internally financed and $I_1 - \hat{i}$ is externally financed.
As a result of the gross investment of $I_1$, $P_1(I_1 - \hat{I})$ of debt becomes part of the liability structure of firms. The extent of leverage in the financing of investment is given by the ratio of $I_1$ to $\hat{I}$. This ratio depends upon the excess of $P_K$ over $P_1$, the available financing contracts and the evaluation of and attitude towards risk of lenders and borrowers. Whereas lenders risk becomes in part an objective phenomena, in the form of interest rates and contract provisions, borrowers risk is largely a subjective phenomena which sets limits on the ratio of payment commitments to gross profits.

The evolution of financial institutions and usages, such as was discussed earlier, will tend to increase the feasible leverage. The success of business in fulfilling payment commitments due to past financing will increase the "subjectively acceptable" external financing over a run of tranquil good times the acceptable leverage, of investment and of positions in capital assets, increases; the flow-of-funds data for the first three decades after World War II bear this out. With an increase in leverage relative to gross profits the ratio of payment commitments because of liabilities to gross profits rises; the margins of safety in cash flows are eroded. As these margins of safety are eroded the financial system becomes fragile.

Once financial considerations are integrated into the investment decision it is evident that capitalism as we know it is endogenously unstable. As Dillard points out in Keynes the proposition "... that employment depends upon investment" leads to a general critique of the whole capitalist process. Contradictions and tensions associated with the accumulation of wealth comes to the forefront of the analysis. Instability becomes normal rather than abnormal.
Once debts exist some of the cash receipts of debtors are committed to the fulfillment of contracts. Thus the cash receipt of debtors has to meet some minimal standard if the debts are to be validated. Furthermore, debts finance only a portion of the positions in capital assets and investment in process. There is some minimum standard that the cash receipts attributed to capital assets have to meet if the debts and the prices paid for capital assets are to be validated. The validating cash receipts are gross capital income (profits broadly defined). The successful functioning of a capitalist economy requires that the present and expected gross capital income be large enough so that past decisions to invest and to finance are validated.

In a capitalist economy present views about future profits determine current investment and financing decisions, even as present achieved profits determine whether what was done in the past is validated. An economic theory that is relevant to a capitalist economy cannot evade the issues involved in unidirectional historical time by assuming recontracting or the existence of universal systems of future, or contingent, contracts. The essence of capitalism is that units have to take positions in an uncertain world.16

In a world in which investment is taking place, the heroic assumptions that workers spend all of their wage income on consumption goods and capitalists do not consume yields the result that:17,18

1. \( C = W_{C}N_{C} + W_{I}W_{I} \)
2. \( \pi_{I} = P_{C}Q_{C} - W_{C}N_{C} = W_{I}N_{I} \)
3. \( \pi_{I} = P_{I}Q_{I} - W_{I}N_{I} = \pi_{I}; \)
   As \( \pi_{C} + \pi_{I} = \pi \) and \( P_{C}Q_{C} = I \) we have
4. \( \pi = W_{I}N_{I} + \pi_{I} = I \)
As is well known the simple Kalecki result can be expanded to

5. $\Pi = I + Df$ if government is introduced,

6. $\Pi = I + Df + cW - SW$ if consumption out of profits and savings out of wages are allowed and

7. $\Pi = I + Df + cW - SW + BPS$ if the economy is open.\(^{19}\)

Given that Investment is determined by a complex interplay which involves present expectations of future performance, the simple Kalecki relation can be interpreted as meaning that profits are determined by investment. As the Kalecki relation is extended the logic of running from investment to profits is reinforced by the structural and policy determinants of the government deficit, the balance of payments, savings or households and consumption by receivers of capital income.

Investment is carried to the point where, on the margin, equality between the adjusted price of capital assets, [as a function of expected profits and the available financing conditions for holding capital and financial assets,]\(^{19}\)and the adjusted supply price of investment output [as a function of the money wage] where the adjustments reflect uncertainty and financing conditions. The evolution of financial markets affects investment both by way of the pricing of capital assets and the financing available for investment. Normal functioning of the financial system is a necessary condition for investment to be sustained so that profits are forthcoming to validate debt and induce future investment. Any "break" in the financial system—such as occurred on a massive scale between 1929 and 1933 and on "minor," contained scales in 1966, 1969/70 and 1974/75—will disrupt the economy. If institutional change and central bank accommodating behavior allow available financing to expand rapidly, then an inflationary boom is likely to result; if a financial crisis compromised the ability and willingness of institutions to provide credit or central
bank actions constrain credit, a debt deflation/deep depression is likely to occur.

In the schematic diagram that was used to explain investment activity, the extent of debt financing as determined by lenders and borrowers risk and the evolving structure of financial relations affects the level of investment. During an era of tranquil functioning the development of new institutions and new usages leads to an increase in the levering ratio. As \( I_1 \) "drifts" to the right relative to expected \( \hat{I} \), greater achieved investment \( (I_2) \) will lead to realized profits which are greater than anticipated profits. This will lead to realized internal finance being greater and external finance being smaller than anticipated. Even as investing units and their bankers attempt to increase debt financing, greater than expected profits will result in a shortfall of realized over anticipated debts. During business cycle expansions, the "unused" or "open" borrowing capacity of business and owners of wealth increases.

A rise in investment, due to improved financing terms, leads to an increase in profits. As the level and trend of profits enters into the determination of the price of capital assets, the "evolutionary" expansion of financing forms increases the prices of capital-assets in two ways: It increases expected quasi-rents and it raises the price that will be paid in the market for given time series of expected quasi-rents.

The path of a capitalist economy in historic time depends upon the transactions between businessmen and bankers as they finance capital-asset ownerships and investment. During good times these transactions increasingly reflect the view that borrowers and lenders alike had over-estimated the risks in external finance. This means that such an economy
is unstable. This basic instability is "upward" from tranquil expansion to an "inflationary" boom.

As the leverage ratio for new investment increases, "underlevered" positions in the inherited stock of capital-assets are refinanced to conform to the emerging standards. Such "refinancing" leads to debts growing at a faster rate than both the capital-stock and profits. Even if interest rates on financial contracts do not increase, the ratio of payment commitments to profits increases.

Financial innovation, combined with the interactions by which increased investment leads to increased profits, implies that current output prices rise. Either because the central bank attempts to restrict financing available through banks or the pace of the demand for financing outraces the availability of finance in time the rise in investment in the "pipe line" will lead to a rise in interest rates. Because investment decisions lead to a sequence of investment demands a run of tranquil behavior leads to a rising inelastic demand for financing for the production of investment goods. Given this inelastic demand, any emerging inelasticity of the supply of finance will lead to a sharp rise in interest rate. Such a rise by first lowering the price of capital assets lowers the demand price of investment even as it raises the supply price of investment output. As a result the ratio of planned investment demand to expected internal funds will fall; the thrust towards ever higher profits due to increasing investment reflecting ever higher leverage ratios will cease.

The financial processes of a capitalist economy introduces instability by making a tranquil state unstable "upwards" and sets flexible limits to this upward expansion. However the "limit" to external finance requires that weak or fragile financial situations emerge. A decrease in
investment will decrease profits thus increasing the ratio of payment commitments on outstanding debt to gross funds available for such payment and also increasing the proportion of current investment that need be financed externally. Just as rising profits "frustrated" the attempt of bankers and businessmen to debt finance investments, so falling profits frustrate attempts by bankers and businessmen to decrease their indebtedness.

The debt-deflation process can be limited if the financial system is robust. From time to time in history a financial system was sufficiently fragile so the deep depressions, such as 1929-33 occurred. In the era since World War II no such debt deflation/deep depression has taken place.

In the years since the middle 1960's there have been three episodes—in 1966, 1969/70 and 1974/75—when the economy was on the verge of a debt deflation. Nevertheless a debt deflation and deep depression did not occur. In part this was because the Federal Reserve quickly intervened when confronted with the threat of a possible debt deflation and increased the robustness of the financial system by interposing its guarantee to protect banks and other financial institutions; in part it was because a huge government deficit followed quickly upon the threatened debt deflation. A government deficit substitutes for investment in sustaining deficit profits. With profits sustained a debt-deflation process cannot gain momentum.

From equation 5 we have \( \pi = I + Df \). If a decline in investment and employment triggers an explosion of the government deficit so that the increase in the deficit offsets the decline in investment, then profits will not fall. If profits are sustained then the gross cash flow to capital owners is sustained. This means that outstanding debts and the prices that were paid for capital assets tend to be validated.
The combination of automatic stabilizers, lagged adjustments to past inflation in various government transfer payment schemes, and discretionary fiscal interventions means that now when financial stringency is followed by a fall in investment, a massive government deficit occurs. Profits are sustained even as business activity and employment decrease. As a result the business sector is able to validate its debts. The interactions among investment, profits, and financial markets which constitute the downward spiral of a deep depression do not occur.

The aggregate demand effect of big government, especially government that expands dramatically when income and employment falls, sustains and increases the mark up on labor costs. Inasmuch as transfer payment schemes sustain money wages in the face of excess supply of labor and the deficit tends to sustain, if not increase, the mark up on money wages, prices do not fall and even rise when unemployment increases. "Stagflation" is truly a result of big government, but so is the absence of a deep depression in the years since 1966.

There is no free lunch; we have eliminated deep depressions but the 'price' has been first chronic and now accelerating inflation.

G. Conclusion

Once we shift from treating an abstract economy and turn to analysing the behavior of a capitalist economy with expensive capital assets and a sophisticated financial system, then the equilibrium, equilibrating and stability properties derived in standard economic theory are not relevant. Such a capitalist economy is unstable due to endogenous forces which reflect financing processes. Financing processes transform a tranquil relatively stable system into a system in which a continued accelerating expansion of debts, investment, profits and prices is necessary to prevent a deep depression.
A comparison of 1929/1933 with 1966, 1969/70, and 1974/75 makes it clear that at the time that a financial crisis is imminent the structure of the economy and discretionary interventions by the authorities determine what happens. At such a juncture policy really matters. If, as in 1929, aggregate federal government spending is small relative to investment and if the Federal Reserve takes a narrow view of its responsibilities, then a debt deflation and a deep depression will follow financial trauma. If, as in 1966, 1969/70 and 1974/75, aggregate government spending is large relative to investment and if the Federal Reserve takes a broad view of its responsibilities, then stagflation and a stepwise accelerating inflation will follow financial trauma.

Whereas 1946-1966 shows that an extended run of capitalism without instability is possible, it should be recognized that these years are a special case. The memory of 1929/1939 made "balance sheet conservation" a dominant characteristic when World War II ended. The available ability to spend which was a legacy of war finance was gradually transformed into actual spending. A long tranquil expansion with all but intermittent price stability resulted, however, as was evident even in the mid-1960's, the basis of this stability was being eroded during the tranquil expansion.

Both the Great Depression of the 1930's and the "Great Inflation cum Intermittent Stagnation" of 1966-1979 are symptoms of the underlying instability of capitalism. A Great Depression is the outcome when government is small and the Central Bank is timid. A "Great Stagflation" is the outcome when government is big and the central bank intervenes forcefully.

Given the fragility of our financial system we will soon experience another brink reminiscent of those of 1966, 1969/70 and 1974/75.
This time however big government will not be as quick nor as able (because of international financial relations) to throw money at the problem, as in 1974/75. In addition the Federal Reserve will be more reluctant to intervene and by increasing the monetary base and extending broad guarantees than it was in 1974/75. The prospect is that the next time financial instability hits the policy response will be slower and more modest than in 1974/75. The subsequent recession will be both longer and deeper.

The current institutional structure offers us unappetizing alternatives; an altered institutional structure is needed. However, if an altered structure is to help it must be based upon a recognition that the essential critical flow in capitalism is instability and that instability is due to the way capital asset holding and accumulation are financed. Simons was correct, "banking", i.e., the financing of capital asset ownership and investment, is the critical destabilizing phenomena. But as Simons realized control of banking—or of money if you wish—is not enough; the liability structures available to units that own the massive capital assets of the economy must be constrained.

The fundamental dilemma in economic organization is how to have the vitality and resilience that goes with decentralizing decisions without the instability that goes with decentralized financial markets. Keynes' solution—the socialization of investment—may be a way of attenuating, though not eliminating, financial instability by removing the financing of the most capital intensive processes and instability by removing the financing of the most capital intensive processes and expensive capital assets from private debt markets. The substitution of government for private financing of capital intensive investment, along with limitations on the liability structure of private business,
could decrease the domain of instability of a capitalist economy.

The economics of Simons of Chicago and Keynes of Cambridge have much in common. But this is not surprising. Both Keynes' General Theory and Simons' Rules Versus Authorities were responses to the same real world situation. However, Simons, never broke with inherited economic theory whereas Keynes saw that one aspect of the crisis of his time was that the inherited theory was incapable of explaining what was happening.

In many ways today's multiple crises of economics—in performance, policy and theory—are reminiscent of the crises of the 1930's. Once again the discipline is divided between those who view the inherited theory as an adequate basis for future progress of both the economy and the discipline and those who hold that inherited standard theory won't do. Today, just as in the 1930's, the control of systemic instability is the critical problem in performance and policy and instability is the phenomena that renders inherited theory suspect.
REFERENCES


2. Ibid, p. 171.

3. In all that follows "corporations" or "firms" will be the proximate owners of the capital assets of the economy. This institutional specification simplifies the exposition and does not do grave violence to reality.


13. When neo-classical theory is extended to deal with problems of accumulation and growth, in one form or another the assumption is made that the depreciated value of historical investments equals the value of the capital stock as determined by the present value of future profits; i.e., two sets of prices are equal. But this assumption is an attribute of an investing economy in equilibrium. Neo-classical general equilibrium theory, when extended to investing capitalist economies, proves the existence of equilibrium by first assuming the economy is in equilibrium. See G. C. Harcourt, Some Cambridge Controversies in the Theory of Capital (Cambridge, 1972). This point is very clear in the writings of Jan Kregal, see especially The Reconstruction of Political Economy, (London, 1973).


17. \( C = \text{Consumption}, \ W_C, W_I = \text{Wages in consumption and investment production}, \ N_C, N_I = \text{Employment in consumption and investment production}, \ \pi, \ \bar{\pi} = \text{profits in consumption investment and total production}, \ Df = \text{Government Deficit}, \ C = \text{consumption coefficient out of profits}, \ s = \text{saving coefficient out of wages and BPS = surplus in the Balance of Payments.} \)


19. There is a formal equivalence between \( Y = C + I, \) etc., and \( \pi = I + Df, \) etc.; the difference is in the treatment of received income as a homogeneous glob int he \( Y = C + I, \) etc., formulation and the differentiation by source of income in the \( \bar{\pi} = I + Df, \) etc. formulation.

The emphasis upon \( \pi \) as the expecially relevant attribute of a capitalist economy is important once the financial structure is specified and it is recognized that it is the flow of profits that determines whether past financing and asset values are to be validated.

20. From the Kalecki relations we have
\[
P_C Q_C = W_C N_C + W_I N_I
\]
which yields
\[
P_C = \frac{W_C}{(Q_C / N_C)} \left(1 + \frac{W_I N_I}{W_C N_C}\right)
\]
or
\[
P_C = \frac{W_C}{A_V} \left(1 + \frac{W_I N_I}{W_C N_C}\right)
\]
where \( A_V \) is the average productivity of labor in the production of consumer goods. The higher the ratio of \( N_I / N_C \) the higher the price level of consumer goods.

21. \( G_{Q_C} = W_E N_E + W_I N_I + Df; \ P_C = W_C N_C \left[\frac{1}{W_C N_C} + \frac{W_I N_I}{W_C N_C} + Df\right]; \)
\[
P_C = \frac{W_C}{A_T} \left[1 + \frac{W_I N_I}{W_C N_C} + Df\right]. \text{ The markup on labor is}
\]
\[
\frac{W_N + Df}{W_C N_C}.
\]
(I am not entirely confident about the wisdom of including this additional page. But I have decided to go with it on the guess that its effects are more likely to be positive than otherwise. The idea behind it is to spotlight in a very preliminary way, some current thought and questions that suggest the immediacy and power of the topic. If the pieces don't arouse your interest, or don't reach what you regard as most important, just ignore them.)

Do we need to ponder and torment over meanings and interpretations of "capitalism" and "the kind of market economy to which we are accustomed?" My response is, "no". My thinking is that knowledgeable people probably will have in mind closely similar meanings for these terms. There should be consensus around the importance of a large private sector (defined by private property and private organizations) and market control (through open and active capital, labor, and product markets) rather than nationalized organization and political direction. We know where in the world such systems exist. A stickier question arises over the direction in which some economies may be heading — say France, Italy, or Britain. Well conceived ideas along those lines might make an interesting statement for this discussion.

A question often raised, and yet to be answered, turns on the problem democratic capitalist systems face in striving for both full resource employment and acceptable price stability. Have we encountered at last a genuine "contradiction of capitalism", or is there a solution that is both politically and economically workable?

Is the development of a "consensus ethic" or, put another way, a "prevailing ideology" the key to the future of market-directed capitalist systems. If so, it seems clear that no such dominant ideas have emerged in societies organized along free enterprise lines. Given what you see as the present Western intellectual milieu, what are the chances for such a set of beliefs coming to prevail?

In another AEA Presidential address, Tibor Scitovsky raised the question of whether modern Western capitalism is losing much of the dynamic adaptive capacity that has been one of its hallmarks. Have political intervention and the power of particularized interests rendered the system incapable of restraining the multitude of claims on output, or of preserving the crucial linkages between those claims and contributions to production? Are the effects of price signals and unemployment blocked by political intervention — thus negating adequate adaptive responses? And is inflation simply an outlet of last resort for unmoderated claims on the national product?

If "consensus economics" has broken down, it seems reasonable to expect increasingly polarized debate — perhaps between the merits of a market-directed economy versus a centrally controlled economy. What outcome would you anticipate?