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Keynesian Theory and the Current Crisis in Economic Policy

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KEYNESIAN THEORY AND THE CURRENT CRISIS IN ECONOMIC POLICY

by

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I. Introduction

Two items on the current agenda for research in Economics are closely related: the appropriate interpretation of Keynes, and the unsettled state of macroeconomic analysis and policy. The controversy about the appropriate interpretation centers around whether the standard text-book like presentation of Keynesian economics is faithful to the ideas of The General Theory and closely related works. (Keynes 1936) The crisis in macroeconomic policy is most evident in the United States. In quite rapid succession standard Keynesianism, which recommends fiscal measures, and modernized monetarism, which recommends controlling the money supply, have been abandoned as the theoretical basis for economic policy. Policy has most recently taken the form of an imprecise, improvised system of direct controls. These direct controls reflect no coherent explicit view of how the American economy functions. Current American economic policy is being carried out in an intellectual vacuum.

In this paper I will present the 'bare bones' of an alternative interpretation of the 1960's in the United States. This model leads to a perspective which differs from the conventional wisdom on both the way the United States economy can be expected to perform in the 1970's and on appropriate policy. Enroute to the alternative interpretation of Keynes, I will present capsule views of variants of current standard macroeconomics. However the main purpose of this paper is to illustrate how Keynesian theory correctly interpreted leads to an analysis of a current economic situation which differs from that which follows from standard theory.

The strong practical conclusion that emerges from what follows is that conventional monetary and fiscal policy is of limited power. It now seems that if government is big (i.e. as large as 20% of GNP) and if the Central Bank acts quickly as a lender of last resort when financial crises threatens

(as the Federal Reserve did in 1966 and 1970) then economic disasters such as the Great Depression of the thirties can be avoided. On the other hand it also seems that fine tuning is beyond our capabilities: that inflationary expansions are induced by success, such expansions can be financed by portfolio changes even if monetary and fiscal constraint is exercised, that such portfolio financing increases the likelihood of financial instability, and that the imminent threat of financial instability, even if aborted, so affects business investment and household consumption that conditions conducive to considerable prolonged slack develop. Thus, in spite of our apparent sophistication and a willingness to use the conventional instruments of economic policy, the aggregate path of a capitalist economy remains essentially cyclical: the business cycle has not been banished rather its shape has been transformed. Capitalism, even after allowing for modern policy, remains flawed.

II. Keynesian Economics: The Standard Interpretations

The label Keynesian Economics is customarily applied to the doctrines that are taken to be rooted in Keynes' The General Theory of Employment, Interest, and Money, (Keynes 1936) As they now stand these doctrines are more the result of the explanatory and interpretive work which followed the appearance of The General Theory... than of the content of the master work itself.

Keynes did very little theoretical work after the appearance of The General Theory.... He had a heart attack in 1937. His recovery was not rapid, the war was under way by the time he resumed a full schedule. Once able, he became deeply involved in government work. He died soon after the end of the war. Thus what passes for Keynesian thought was polished and refined into its present state without the continuing active participation of Keynes. As is true of many seminal works, The General Theory... is not a logically watertight polished statement. Much of the old, which Keynes was struggling to discard, crops up as Keynes formulates his 'new' view.

Fundamentally Keynes' work in monetary theory prior to The General Theory... was concerned with explaining the mechanism of the Quantity Theory of money. The essential doctrines of this theory are that money is neutral - i.e. the real varables are independent of the quantity of money - and that as between equilibrium states, differences in the quantity of money will lead to equi-proportional differences in prices. Keynes' endeavor was to make precise the channels through which monetary impacts operated in an economy in which real outputs, employment, and relative prices are determined in an interdependent system of commodity and factor markets. He formulated the mechanism in A Treatise on Money, (Keynes 1930) his major work prior to The General Theory..., so that the changes in the quantity of money operate by way of changing profits. The classification problem for the various identified channels and impacts was large.

— Keynes cites his critique of Treatise in Preface to General Theory

The theoretical results of A Treatise... were unsatisfactory. However A Treatise... does contain a great deal of valid and valuable institutional analysis, whereas The General Theory... contains very little. In formulating an interpretation of Keynes' ultimate contribution, the institutional analysis of A Treatise... is best combined with the theoretical analysis of The General Theory..., but the theoretical analysis of A Treatise... had better be disregarded.

It is interesting to note that the modern monetarism, associated with Friedman (Friedman 1968,1970), Brunner (Brunner), and the St. Louis Federal Reserve Bank (Anderson and Jordon), relies upon evidence from the statistical analysis and interpretation of historical regularities rather than a precise specification of the mechanism by which money works its presumed magic. This marks a retreat from the research objective of A Treatise.... Nevertheless the argument of the monetarists does have a valid core, as generalizations from statistical and historical regularities concerning monetary influences may lead to smaller errors than inferences drawn from an econometrically estimated structural model which is based upon misspecifications of the channels by which monetary changes interact with the rest of the economy.

Keynesian theory emerges when output is allowed to be an endogenously determined variable in a world in which monetary and financial factors are among the determinants of various sectoral demands. Whereas in A Treatise... the mechanisms of the commodity and factor markets led to a real system equilibrium, (i.e. the determination of output and employment) at full employment in The General Theory... Keynes abandoned this assumption. No longer is output and employment determined by technical conditions of production and the psychological foundations to labor supply to the exclusion of speculative considerations which affect demand.

The portfolio constraints of the Treatise, the investment process in the Treatise, portfolio balance & its effects in the Treatise are very close to the General Theory?

In The General Theory... output is not in general determined by supply conditions. Output in The General Theory... is determined by those socially conditioned factors which affect the various components of demand. Once the break is made with technical and primitive psychological constructions - in particular once the production function is not allowed to be the dominant construct in macroeconomic theory - Keynes found that a very simple and straight forward set of concepts were sufficient to carry the analysis of how system behavior is determined. Both the terminology and the constructs of The General Theory... are very much simpler than those of A Treatise....

There are three tiers of standard "Keynesian" models: the simple consumption function models which ignore "monetary" phenomena, the Hicksian IS-LM models which incorporate monetary phenomena but do not set up mechanisms to achieve "full" equilibrium, and models which start with Hicksian statements on aggregate demand determination but set up mechanisms so that full employment is the equilibrium solution. All of these models are equilibrium models. The movement that occurs is towards equilibrium following up on either some 'unexplained' initial disturbance or a policy change.

All three tiers abstract from the explicit discussion of uncertainty and thus of the speculative valuation of assets, a concept which is central to The General Theory.... The alternative version we will build takes off from considerations of the inherently speculative demand for capital goods. The explicit introduction of speculative phenomena results in the suppression of production function considerations as proximate determinants of the aggregate behavior of the economy.

The first model - which gives grounds for the accusation that money doesn't matter in Keynesian economics - has the consumption function as its sole analytic construct. It can be written as:

1. $Y = C + I$

2. $C = a_o + a_1 Y$ [a linear form of the consumption function]

3. $I = \bar{I}$ (i.e. exogenous)

so that

4. $Y = \frac{a_o}{1-a_1} + \frac{1}{1-a_1} \bar{I}$.

To a large extent this simple naive formulation is the 'heart' of the first generation of econometric forecasting models. (Suits) All that is required to transform this model into a primitive econometric forecasting model is to break C (consumption) down into types and to define Y (income) as 'disposable' income, thus allowing for the consistent inclusion of Government. Similarly parts of I (investment), such as housing demand, may be explained endogenously without violating the basic structure, as long as the explanation of investment demand runs mainly in terms of demographic and accelerator (induced or derived demand) relations.

This consumption function model, especially in the form which explicitly allows for the impact of fiscal policy, was a useful tool in economic policy analysis during the war of 1939-45. It enabled the emerging data on the National Income Accounts to be exploited. In the form that allows for government taxation and spending this model lends itself to investigations of the influence of fiscal policy on aggregate demand.

The consumption function model is unsatisfactory for it does not attempt to explain investment behavior in market terms. In forecasting applications, surveys of investment intentions by corporations are often used to provide numbers to the analyist. Whereas practical men may accept the evidence from surveys, economists, who endeavor to explain connections, cannot be satisfied with leaving such a significant part of market determined demand unexplained.

The Hicksian (Hicks) IS-LM apparatus adds two behavioral relations to the consumption function: an investment function and a liquidity preference function. The model can be written as follows:

5. $S = -a_o + (1-a_1)Y$ [S = Y-C, a transformation of equation 1 and 2]
6. $I = I(r)$ [the investment function]
7. $S = I$
8. $M_D = L(Y,r)$ [the liquidity preference function]
9. $M_s = \overline{M}_s$ [money supply exogenous]
10. $M_s = M_D$

Equation 6, the investment function, states that investment is inversely related to the interest rate. In Hicks' original article this function is introduced without any argument. It is simply asserted. It has become a center of controversy. The derivation of investment - i.e. the time rate of change of capital equipment - as a negatively sloped function of the interest rate is not posiible except as a result of heroic abstractions. (Witte) (Jorgenson) Production function constructs may lead to a negatively sloped relation between the cost of capital and the quantity of capital desired, but without introducing cost of production conditions for investment goods, financing terms for investing organizations and speculative considerations with respect to evaluations of prospects from both the "stocks" and increments to stocks it is impossible to determine the rate at which the community's capital stock is to be increased.

It is worth noting that Book IV of The General Theory... is called The Inducement to Invest and that it takes up virtually one-third of the book (8 out of 24 Chapters). The Hicksian analysis depends upon a naive investment function, whereas the investment argumentation in The General Theory... is both subtle and sophisticated.

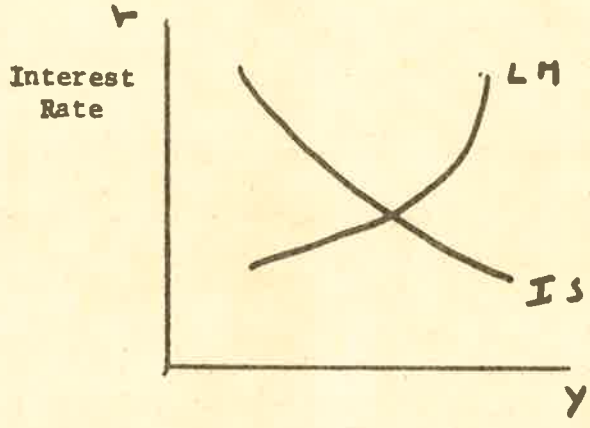
Y is where the 'money' chapters lie

Equation 5 combined with equation 6 by way of equation 7 yields a negatively sloped relation between r and Y, which gives us the set of incomes and interest rates compatible with equilibrium in the commodity market. (This is normally labeled the IS curve.)

Equation 8 states that the quantity of money demanded is directly related to the level of income and inversely related to the interest rate. The higher the level of income more of any given quantity of money will be required for transactions and the smaller the amount that will be available for portolios. If we assume the quantity of 'other assets' to be fixed, this resultant smaller quantity of money combined with 'other assets' in portfolios yields a lower price - a higher interest rate - on these other assets.

Equation 8 combined with the exogenously determined supply of money yields an upward sloping function relating r to Y. (This is normally labeled the LM curve.)

DIAGRAM I
The Standard Hicksian Model



The combination of the IS and LM functions yields the "unique" interest rate and income pair which satisfy commodity and money market conditions. This IS-LM formulation, along with various modifications, is perhaps the key derived construct of standard macroeconomics. (Patinkin, Modigliani, Ackley).

The Hicksian specification of liquidity preference as the demand curve for an asset M in which the proportion of income demanded in the form of money depends upon the interest rate can be interrreted as a generalized quantity theory in which velocity - or cash balances - depend upon r, i.e.

V(1) $M = k(r)Y.$

This was an interpretation placed upon liquidity preference by Viner (Viner) in his review of The General Theory..., an interpretation that Keynes explicitly repudiated in his rebuttal. (Keynes 1937)

The Hicks model determines nominal demand and at given prices this becomes real demand and the demand for labor.

The third set of models completes the transition to a neo-classical - neo-quantity theory view by introducing a labor market-production function framework to determine aggregate supply. This one output interrelated equilibrium system uses the production function along with assumed income - leisure and consumption-wealth preferences to determine employment, the real wage and output.

11. $\frac{w}{p} = f_N(K,N_D)$
12. $N_s = L(\frac{w}{p})$
13. $N_s = N_D$
14. $O = f(K,N)$
15. $Y = pO$
16. $C = C(Y,r,\frac{V}{p})$
17. $I = I(r)$
18. $Y = C + I$
19. $M_D = L(Y,r)$
20. $M_s = M_o$

N_D, N_s = labor demand and supply
k = capital stock
w/p = wages divided by prices
O = output
Y = money income
C = consumption
r = the interest rate
V/p = pK+M/p = real value of wealth
I = investment
$M_D = M_s = M_o$ = money demand and supply

Equations 11 through 20 yields two subsets, each of which determines income. The first four equations yield real income by means of the labor market, equations 16 through 20 yield nominal income by the Hicksian apparatus andequation 15 ties the two together. The two incomes need not be the same. If at the existing price level, p_o, income determined by equations 16 through 20 is less than output as determined by equations 11 through 14 then it is assumed that output and employment will be in temporary equilibrium at the smaller output. However such temporary equilibrium implies excess supply in the labor market, which in turn is taken to imply that nominal wages and nominal supply curves for output fall.

This leads to a fall in the price level; we can ignore whether wages fall in proportion with or by a greater or smaller proportion than prices. The important aspect is that a fall in p is taken to increase V/p in equation 16: V being the market value of privately owned wealth. The market value of at least some items in the privately owned stock of wealth - outside money or gold - is assumed to be independent of changes that occur in the price of current output. (It is assumed that the market value of real capital changes in the same proportion as the price level of current output.) An increase in the command over current goods embodied in wealth is taken to imply an upward shift in the consumption function. This price deflation wealth effect continues until income as determined by aggregate demand equals output as determined by aggregate supply.

Once equilibrium output and employment is determined in the labor market then by substituting equation 16 and 17 into equation 18 an equation with one unknown - the interest rate - is derived: saving and investment schedules determine the interest rate. With the interest rate known, equations 19 and 20 are transformed into

19'. $P = \bar{M}_g/\bar{L}(\bar{O},\bar{r})$ i.e.

the quantity theory with a "variable velocity" determined by system behavior.

This variable velocity is a function of the interest rate. The end result of this evolutionary process of theory construction and refinement is exactly the model that Keynes explicitly repudiated as an interpretation of his views in his rebuttal to Viner.

Whereas in The General Theory... Keynes attempted to break away from the idea that there is a real system equilibrium determined by production and psychological conditions independently of the monetary and financial conditions of the economy, the end result of the decades of interpretation and theoretical refinement since The General Theory... appeared has been the emergence of the aggregate production function as the dominant construct of macro-economic theory.

Although there has been much ado among the so-called monetarists and those of the income expenditure persuasion, the model stated in equations 11 through 20 is the apparent underlying schema for both schools. The income-expenditure school is taken to postualte rigid wages - i.e. assume that there exists a money wage W_o and therefore as price level p_o which, as a first approximation, are constant. With this assumption income settles down at the level determined in equations 16 thouugh 20 and equation 14 is solved for N, given O and K. The postulate that money wages are fixed is taken to be valid in the short run at those times when excess supply of labor exists. (Friedman 1970)

The 'monetarists' primary focus is the longer run when wages and prices are assumed variable. As a result the 'neo-classical' price flexibility mechanism is deemed operative, so that equilibrium at full employment is achieved (Friedman 1970).

I find this well expressed and in a manner not even hinted at elsewhere. There are many useful insights & comparisons here. This section is neither redundant nor terse. U.S., U.K. etc audiences would gain from publication. There are sections above where we may differ a little but we can argue those minor points out if necessary.

III. Keynesian Economics - The Alternative Formulation

As was mentioned earlier, Keynes' General Theory ... is largely concerned with the determination of investment, not in an abstract economy but rather in the specific institutional framework of an advanced capitalist economy. In an advanced capitalist economy a 'stock exchange' together with other complex, sophisticated financial institutions exist and households and firms manage 'portfolios' (asset and liability structures) as well as sell labor and produce or consume. To a major extent ownership of real assets by households is represented by financial instruments and is divorced, by means of the corporate form of organization, from the management of business.

This advanced capitalist economy's aggregate behavior has been and is expected to be cyclical. Swings in economic activity, such as those that characterized the behavior of the American Economy in the century prior to 1935, and, more moderately in the years since 1964, are part of experience and affect the expectational climate. As a result, a special type of economic uncertainty exists. This uncertainty with respect to how well the economy will function affects household and business portfolio and investment decisions.

Because much of capital has a long life and the value of assets in portfolios depends upon what unfolds in the future, in the world of Keynes' General Theory ... views of the future affect present behavior. Keynesian economics views the world as cyclical and formulates an investment theory of business cycles.

Keynesian economics examines investment on two planes. One is the choice by households, business, and financial institutions among the real assets and financial instruments available for holding as assets and emitting as liabilities. The second is the use of present resources to produce assets in the form

of capital goods, which will yield productive services in the future. These choices are made in an environment where business cycles are part of experience and are expected to continue. That investment is the active private expenditure in the generation of cycles is a first step generalization in Keynesian theory.

There is a broad spectrum of assets in the economy, ranging from money, default free public debt, private debt with varying protections against default, equities, and real private capital in the form of producers goods, business inventories, and consumer durables.

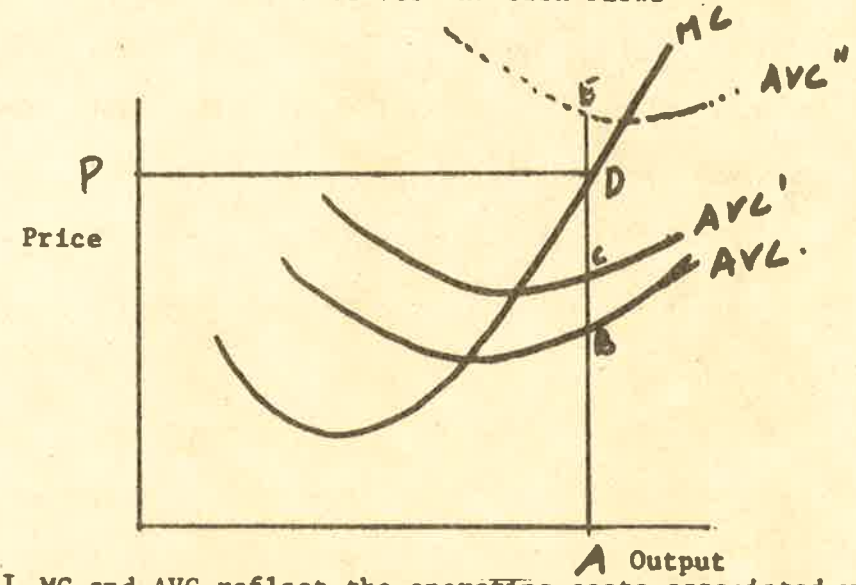
Money is "the" safe asset in only one respect: it is invariant in its power to fulfill the terms of contractual commitments denominated in money. In a world where the money prices of real (productive) and financial assets, the wages of labor, and prices of current output change money is not a riskless asset with respect to its command over assets, labor services, or current output.

A fundamental thrust of Keynesian economics is to explain the rate of output of investment goods. Investment goods are assumed to be perfect substitutes for items in the stock of capital goods (this assumption of technological conservatism is not necessary but there is no need to go into how its elimination would affect system behavior). The items in the stock of capital goods are collected in operating sets in firms. These positions in real capital are financed by various types of liabilities (equities (common stock) and debts). As a result of the liability structure the firms owning the real capital today are now committed, by contract, to make money payments in the future.

Real capital assets as collected in firms are expected to generate cash flows. The services from real capital assets together with the money wages of labor and the 'imputed value' of capital services which could be shifted over

time (Keynes' user cost) determine the current costs-output relations for firms (the average variable and marginal cost curves). The difference between total revenue and the total variable cost is the gross cash flow from operations. This is allocated by law and contract to taxes, overhead costs, debt servicing and debt-repayment: the residual is available for disposal by management either as dividends or retained earnings.

DIAGRAM II
Cost Curves and Cash Flows



In Diagram II, MC and AVC reflect the operating costs associated with a given set of capital assets in a firm: AVC' adds to AVC overhead, debt serving, and taxes. Thus with AD as the price per unit of output, CD per unit of output is available for debt repayment, dividends and retained earnings. It might very well be the CE (>CD) is the debt-repayment necessary per unit of output this period. For such a unit to survive financially it is necessary either to turn over or fund at least CD of debt per unit of output, or to raise cash by selling financial or real assets, or to run down cash positions.

Note that if interest rates are higher when EC is turned over than those that were ruling when contracts now maturing were drawn, then the AVC which includes servicing, taxes and overhead will tend to rise for any level of

indebtedness: the cover of revenue over cash servicing commitments will decrease. The greater the debt servicing and turnover relative to revenue minus variable costs per unit of output, the greater the likelihood that the unit will have difficulty meeting financial commitments, especially if either operating costs or sales revenue are disappointing.

The value per unit of capital goods as collected in firms is the demand price per unit of investment goods, here defined as a part of output. In a given state of expectations with respect to future cash flows, with a given set of intermediary assets, including government bonds, other than money, the price per unit of capital is positively related to the money supply. That is $\Delta M > 0$ implies that $\Delta P_k > 0$. However, if we ignore feedbacks from M to expected inflation, at any state of expectations there is a ceiling to the price of capital that can be achieved by increasing the money supply through say open market operations in government bonds.

The above is the essence of the Keynesian Liquidity Preference doctrine. It argues that there is a spectrum of assets stretching from money to special purpose petro-chemical plants which exist and which must be owned by households, firms or financial intermediaries. These assets are "valued" in money, and if - for a given state of expectations - money is scarce, then other asset prices will be low. If money is plentiful, other asset prices will be high. The primary importance of this liquidity preference doctrine is to determine P_k, the current market price of the inherited produced means of production, capital goods.

The price of the items in the stock of produced means of production is a determinant of the demand schedule of investment goods, that is the current production of produced means of production. The supply price of investment is

determined by the wage rate and the pace of production of investment goods. For every wage rate there is a minimum supply price for investment goods, and if the demand prices for investment goods as determined by the market price of capital goods is too low, the output of investment goods will collapse.

Thus in Diagram III-A, $P_k = f_1(M)$ and $P_k = f_2(M)$ are two pricings of real asset functions. They differ in the assumed psychological and expectational states as well as in the assumed financial institutions and usages. The $P_I = Q(I)$ function of Diagram III-B is a supply curve for investment goods given a money wage rate and the output of consumption goods associated with each level of I.

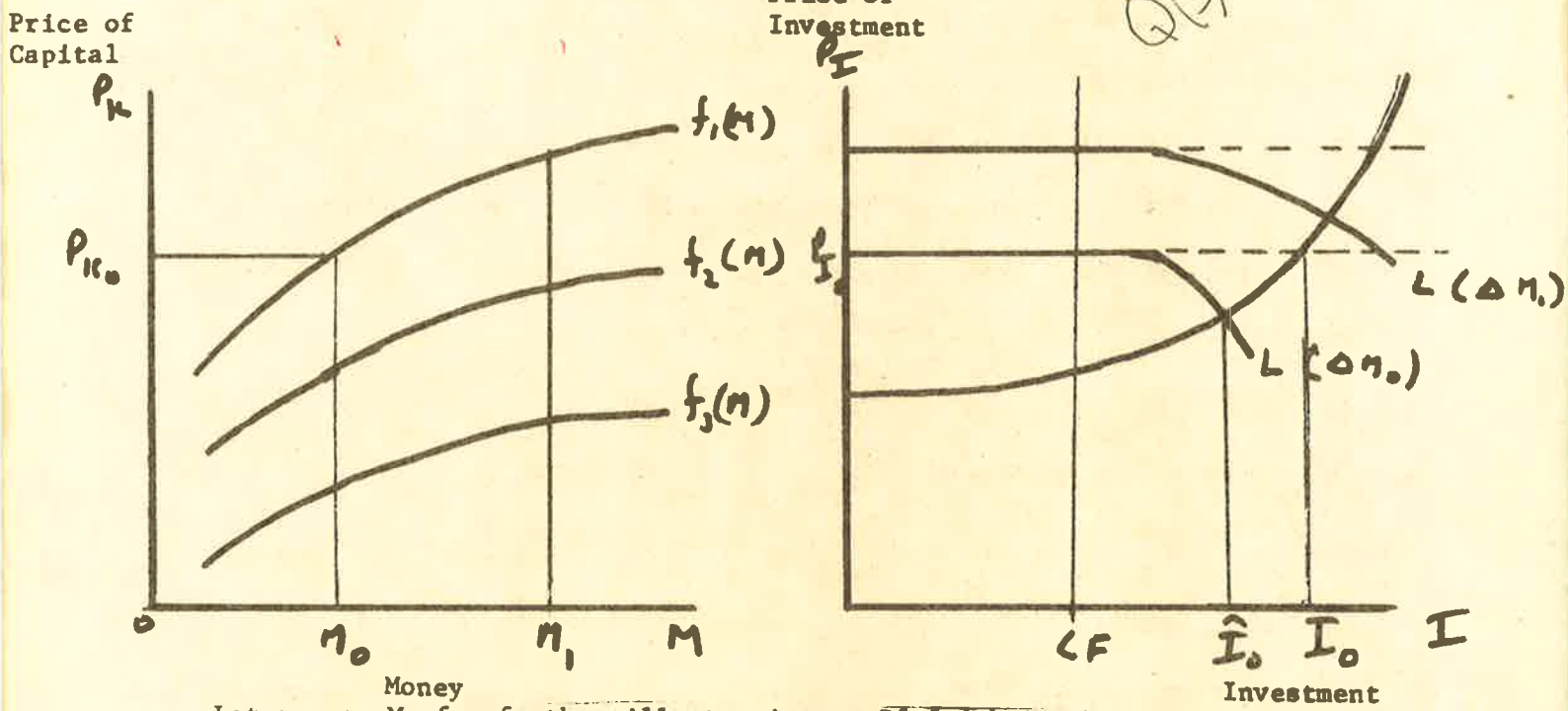
With a money supply M_o and the pricing function $P_K = f_1(M)$, P_{K_o} is the ruling price of capital goods. This P_{K_o} implies that in a world with no financial constraints P_{I_o} is the demand price for investment i.e. $P_{I_o} = P_{K_o}$. If financing is readily available I_o of investment will take place.

The corporate sector will generate CF of funds internally for the financing of investment. (For simplicity internal funds are assumed to be independent of investment and income. In truth the expectation is that internal funds will increase as income increases but not as much). Thus if I_o is to take place I_o-CF will be financed externally. If financing is constrained in that the terms on liabilities become more constraining as the proportion of external to internal financing increases, then actual investment will take place along a function such as is represented by the $L(\Delta M_o)$ curve.

If M_1 is the money supply, still using $f_1(M)$ as the pricing of capital function, and $Q(I)$ as the supply curve for investment output then two differences are worth noting. The greater M_1 implies a higher price of capital and

for M_1 to be brought about ΔM_1 must be greater than ΔM_0. Thus the financing constraint must be easier with M_1 than with M_0; $L(\Delta M_1)$ is less steep in its decline than $L(\Delta M_0)$.

DIAGRAM III
Corporate Investment



Let us use M_0 for further illustrations. If $f_2(M)$ is the stock pricing relation then P_I will be such that at P_I the demand for investment equals the amount that can be internally financed. If $f_3(M)$ is the stock pricing relation then the demand price for investment goods is lower than the minimum supply price. The internal cash flow will be used for purely financial purposes rather than to finance investment. With $f_3(M)$ as drawn, increasing the money supply without limit will not raise the demand price of investment sufficiently to induce production of investment goods. The configuration of stock price and investment supply conditions given by $f_3(M)$ and Q(I) reflect what is usually called the liquidity trap - a situation in which monetary expansion is <u>not</u> able to increase the price of capital goods sufficiently to increase the amount of investment.

The linkages between the stock of money, changes in the quantity of money and aggregate demand run by way of the financing of positions in the stock of real capital and in the financing of investment. First of all, money creation implies an acquisition of assets. The transitory holder of money - even if held for transaction purposes - is ultimately financing the holding of real capital or outside financial assets someplace in the economy. A rise in money relative to the real capital and outside financial assets will tend to raise the price of these "ultimate" assets and simulataneously improve the terms upon which additions to the stock of such assets can be financed.

Note that the financial, capital goods pricing, investment financing and investment producing markets are closely interrelated sets of markets. The first step in determining aggregate demand and employment is to solve for the values in these markets.

Once investment is determined, the passive consumption function gives us the investment multiplier that can be used to determine income. That is, the essentially passive consumption function yields a multiplier which together with investment yields demand and thus income and employment.

Thus the Keynesian theory of investment holds that the price of capital goods - as determined by portfolio preferences and relative supplies of capital goods and other assets (in particular, money) - generates the demand price for the investment portion of current output. To complete the theory four factors which affect the positioning of the price of capital function have to be integrated into the model:

1. transfer costs for real capital
2. equity prices
3. the liability structure for carrying the stock of capital and for financing the flow of investment.
4. psychological and historical factors

These factors affect the "positioning" of the P_k, M relation.(the $f_i(M)$ in Diagram III).

An essential part of the Keynesian theory centers around the psychological and historical factors which affect the valuations placed upon items in the stock of real and financial assets. Three identifiable causes of shifts are taken to be of special significance: institutional innovations in finance, views of success of the economy and experience with crises or stringencies in financial markets.

The costs involved in transferring a particular "machine" from its site in one production process to another are almost always in fact much greater than the costs involved in transferring a 'newly' produced capital good from its place of production to the place where it will be used. Thus almost always the second hand price is lower than the market price of newly produced capital equipment even if their values in site are equal.

On the whole, for many items in the capital stock of the economy, the second hand market is thin. No in fact transaction prices for many items in the stock of capital can be found. What can be observed are the prices of newly produced investment goods and the equity prices of the going concerns which own the stock of capital. From the equity prices an imputed value of the capital assets can be derived. The ratio of this to the current costs of equivalent newly produced capital is an indicator of both the transfer costs for capital goods and the incentive to expand the capital stock of this organization and its competition.

The firms which own the existing real capital stock finance their positions in capital goods and financial assets by emitting some set of liabilities: common and preferred stock, bonds, debts to banks, trade debt, etc. Investment

has to be financed. Gross investment - the only relevant measure of investment for our purposes - can be financed from gross retained earnings, running down of financial assets, and the sale of either long or short term liabilities.

Given the liability structure of a firm, or a sector, or the economy, there exists a maximum amount of investment over a relevant period which can be debt financed so that the 'balance sheet' structure after the investment is the same as before the investment. This maximum amount is some multiple of the corporations cash flow after taxes and dividends and new equity financing. If investment is less than what would be allowed by the ratios for the stock, then the period will have seen an easing of the objective financial position of the investing sector, if it is greater the objective financial position would have become more constraining. We can also expect that the more a firm levers its cash flow, the higher will be the interest rate and the more constraining the other terms in its financing contracts. These considerations determine the slope of the external financing relation LΔM in Diagram III-B.

Much of the so-called takeover activity of the 1960's centered around the liability structure of firms. Corporations with a high price-earnings ratio for their common stock and with a high debt to equity ratio in their financial structure can bid for firms with lower price earnings ratios and lower debt to equity ratio by offering their own shares in "exchange" for the shares of the other company. In the language of Wall Street in the 1960's, these shares constitute a type of "funny money". Once the acquisition is made the earnings per share of the acquiring company is improved, and the lower debt equity ratio of the acquired firm makes additional borrowing acceptable. Thus during the late 1960's the pressure on financial markets exceeded that which would have arisen solely from the financing of investment. Inasmuch as the debt put

forth as a result of such refinancing raises the ratio of cash payout to the markup over variable costs (See Diagram II) the vulnerability of units and of the economy to financial trauma increases more rapidly than the debt-financing of new investment, taken by itself, indicates.

The psychological and historical factors which affect the positioning of the $P_K = f(M)$ function are of central importance. The $P_K = f(M)$ function includes factors influencing demand which enter the standard macro-models by way of the LM curve of the Hicksian models. Whereas standard theory assumes LM to be stable (it is often characterized as a demand for money relation and the stability of such a relation is essential to the new "quantity theorists"), the essence of the alternative approach is to consider the $P_K = f(M)$ function 'unstable'. However, the instability of $P_K = f(M)$ does not render the situation hopeless, as parameters of shift for the $P_K = f(M)$ function can be identified and observed.

Rapid financial innovation - such as has characterized the American economy in the decades since the war - induces upward shifts in the $P_K = f(M)$ function. For any given quantity of M the greater the financial layering ratio - the ratio of total liabilities in the community to the value (reproduction cost) of the community's capital stock and outside assets - the higher the price of capital. There is no need to chronicle the financial changes of the post-war period in the United States. Some of the changes will be taken up as we use the recent experience in the United States to illustrate how this model is "applied".

During a protracted expansion that is not interrupted by financial traumas and serious short falls of cash flows, the logic of profit maximizing, if debt carries a lower interest rate (inclusive of amortization) than the ratio of

expected cash flows to investment goods prices leads to increases in the extent to which positions in real assets are financed by debt and to larger orders of investment goods. This is so because underlying a firm's liability structure are two sets of factors: the expected cash flows to be generated by operations and the preference systems with respect to risk. Both the firm and the lenders form expectations with respect to risk. The expectations are affected by experience. Successful functioning of the economy - especially success in avoiding serious financial pressures and depressions tends to raise expected cash flows attributed to real assets collected in firms and decrease expectations that these cash flows will be "interrupted" by recession or depressions.

In addition to expectations of cash flows, asset valuations are affected by the way in which preference systems evaluate risks. Although we are willing to postulate that on the whole preferences systems exhibit risk aversion, it is also true that the extent of risk aversion must be considered to be endogenous, so that a period of sustained expansion will witness a decrease in the degree of risk aversion in preference systems. Furthermore, as "Bonanzas" are generated by successful functioning of the economy, preference systems may increasingly exhibit "risk seeker" attributes.

These changes in expectations and attitudes toward risk affect investing units, private portfolio holders, and managements of financial institutions. Thus a period of success will not only raise equity prices and the valuation of the stock of capital it will also increase the willingness to finance positions in assets by issuing liabilities, and the willingness of 'other units' to finance such holdings of liabilities by issuing their own liabilities. The ability of any unit to acquire assets by selling its own debt is analogous to the ability of a bank to acquire assets by increasing its debt. The liabilities

Very important but much neglected aspect of financial economics

are not strictly speaking money, but in an era such as the late 60's, when such liabilities had considerable currency (the conglamorate movement), the liabilities used in financing corporate conglomorations and investments were often a sort of counterfeit or 'funny' money.

In this manner, protracted growth leads to a period during which financial layering increases rapidly and equity prices are 'bid up'. These layering-equity price phenomena lead to an investment boom accompanied by an increase in the ratio of outside to internal financing of investment. Furthermore, every increase in asset prices and in the prices of common shares increases 'borrowing' capacity. In an euphoric atmosphere bred by successful functioning of the economy this borrowing capacity is used. As a result the ratio of cash payments resulting from liability structures to cash flows generated by using real assets in production will tend to increase during a period of rapid growth in production. The objective attributes of balance sheets tend to deteriorate even though the subjective evaluation of risks tend to favor the balance sheet developments.

In a limited sense the increase in debt financing of asset positions and of investments can be viewed as the creation of money. To validate this funny money, uninterrupted cash flows from operating real assets and from refinancing debts are required. If we view only the narrow money supply - demand deposits and currency - and define transactions velocity as the ratio of both income related and financial transactions to narrow money, the financial changes bred out of a period of success lead to a rapid increase in transactions velocity and an increase in transactions velocity relative to income velocity. Firms and financial institutions become ever more dependent upon continued success in refinancing positions.

What we have sketched is the development of an unstable situation in financial markets out of an initially stable situation. Financial stringency can develop due to economic policy, the increased vulnerability of some financial institutions, the difficulties of large non-financial corporations, and the evolving pattern of international payments and finance. The significant element unifying these potential sources of instability is that financial markets evolve over a period of sustained expansion in a similar manner, i.e. the size of the disturbance that leads to an unstable reaction decreases.

From any one of a multitude of directions a financial stringency can be set off once the environment has been modified. Organizations which are hard pressed to fulfill their contractual obligations, in an effort to fulfill their cash payment obligations, attempt to sell out positions in assets. This can lead to a sharp decline in equity prices and in the implicit price of real capital.

What happens after the initial stringency depends upon the relative size of the government sector and the behavior of the Central Bank. The size of the built in or policy stabilizers, and the Central Banks action in monetizing, directly or indirectly, financial instruments so that a cumulative, deflationary process is aborted are two determinants of whether stringency develops into a crisis.

The above is a sketch of a view of the world in which speculative asset holding-position financing activities dominate production function and demand calculations in determining investment. This investment model combined with the passive sector consumption function is a simple statement of an alternative view of income determination. This view explains the cyclical and crisis prone behavior of the American economy in the past half dozen years in a more satisfactory way than either of the alternative 'neo-classical' positions: the fiscal Keynesians or the monetarists.

Either elaborate a little or references to other pieces eg. 'Financial Instability . . .

P.T.O.

Although brief, too brief in places,
this is one of the best statements & expansions of the
views I have witnessed you forming. Again this should
be made available, with extra-references to more wordy
expositions of ideas, the significance of which are drawn together
here.

IV. Evolutionary Properties of Financial Arrangement

A neglected aspect of Keynesian Theory argues that investment draws forth its required finance (Cramp) In a sense, Says law is inverted. Whereas Say's law asserted that in the aggregate supply generates its own demand, in Keynesian financial theory realized investment draws forth its requisite finance. This is so because investing and financing units live in the same expectational environment, so that desired portfolios and the financial system respond in similar fashion to market pressures. However, in a strongly expansionary economy the process by which investment draws forth its requisite finance generates balance sheet relations which increase the likelihood that financial instability will take place.

As put forth earlier, the (P_K,M) function shifts as views of the world and preference systems change. The very subjective and speculative phenomena that lead to a shift in the (P_K,M) function from f_3 to f_1 in Diagram III-A will tend to shift the supply curve for the external financing of investment, as illustrated in Diagram III-B. An upward shift in the valuation of capital will initially be accompanied by an endogenously generated improvement in the terms on and an increase in the quantity available of external finance. A willingness to finance investment and positions in capital assets would be of little avail if it were not possible to adjust assets and liabilities in portfolios and to experiment with financial arrangements. Thus the shifting external financing curve reflects changes in financial usages, instruments, and institutions which take place during periods of strong investment demand. These financial innovations make the financing of expansion possible in the face of relatively inelastic supplies of finance from established and contrained institutions, such as commercial banks.

The period since the end of World War II has been exceptionally dynamic for American finance: institutions and usages changed; bankers, financers, and corporate officers innovated. This can be illustrated by sketching one, particularly important, aspect: how the position making activity of commercial banks changed over this period.

At the end of World War II the financial system was dominated by the huge federal government debt. Not only was the war financed by massive deficits, but the associated household, corporate and local government surpluses meant that "private" debt decreased. The Federal Reserve maintained a stable rate structure in Government Securities during the war, and was committed to the maintaining of this structure as the war ended. To this end, in the immediate post-war period it purchased government debt as the market dictated. During this first post-war period non-financial intermediaries, in particular insurance companies, sold off a large portion of their holdings of government securities and used the funds so acquired to buy business liabilities. As a result of the Federal Reserve operations the reserve assets of banks grew rapidly. Thus banks were able to expand their asset holdings without decreasing their absolute holdings of government securities to any significant extent. The Federal Reserve was accused of operating as an engine of inflation over this period.

As the result of an "accord" between the Treasury and the Federal Reserve, the Federal Reserve abandoned the peg in the government security market in March of 1951.

In the mid-1950's, as a result of rising interest rates, two important changes took place: government security dealers began to finance their positions by borrowing from non-financial corporations and banks began trading in bank reserves: the so-called Federal Funds. (Minsky, 1957).

Rising interest rates on bank funds along with the preferred position of Treasury debt in portfolios (for example, the usefulness of Treasury debt as collateral for local government deposits) made the bank borrowing rate for security dealers higher than the rate on Treasury debt. Whereas, prior to the mid-1950's, security dealers "made on the carry" at this time bank interest rates rose so that at least on short terms securities dealers lost on the carry if they financed their position by borrowing from banks. Either by direct borrowing or by repurchase agreements government security dealers turned to tapping the cash holdings of non-financial corporations to finance their position. Once these government security dealers resort to short term borrowing from corporations they need a standby or reserve source of funds in case it becomes too expensive to make their position by borrowing from corporations. Commercial banks, or rather a particular commercial bank, undertook this responsibility, with an "understanding" with the authorities that this bank could borrow at the Federal Reserve Bank of New York's discount window if it became necessary to do so in order to accommodate dealers.

The change in the 1950's in the way in which bond houses were financed introduced two themes into American finance that have remained important: the careful management of cash as an income earning asset by economic units and the development of arrangements and markets which depend upon commercial banks as standby or reserve sources of financing.

A second early 1950's development was the resurrection and expansion of the Federal Funds market. In the Federal Funds market excess bank reserves are traded on an overnight basis. These loans of reserves tend to absorb available excess reserves and use them to sustain positions in earning assets. Aside from making a given quantity of reserves able to finance a greater amount of bank assets, the introduction of trading in Federal Funds was a

major step in the growth of what is called liability management banking. In this view of Banking - and of any other financial activity - banks hold or acquire assets and operate in various financial markets so as to sustain their position in the owned assets. Asset possession and the asset acquisition process are taken as 'givens' and units adjust their liabilities so that asset positions are financed. Thus a bank actively operates in liability markets and for both a bank and the banking system the quantity of liabilities that can be sold responds positively to an "increase" in the terms offered.(Minsky, 1966).

A further step in the evolution of commercial banking was the introduction in 1960 of negotiable certificates of deposit. Certificates of deposit are time deposits. At the time of their introduction, interest rates were being regulated so that interest rates on long term deposits were substantially higher than on a short term deposit. By creating a negotiable instrument with a functioning secondary market the holding period yield could be divorced from the period for which a certificate was originally written. These certificates of deposit have turned out to be an important step in the evolution of banking. It is an instrument that is suitable to liability management. A bank needing funds can sell certificates of deposit to corporations, state and municipal governments, etc. meeting market interest rates and simultaneously tailor-making the instrument to fit the needs of the holder.

During the entire post-war period the Federal Reserve System has sustained a set of ceiling interest rates on such certificates. Whenever interest rates on competing instrument (i.e. Treasury Bills, commercial paper) rose to or above the ceiling rate on certificates of deposit, the Federal Reserve had the policy option of raising the ceiling rate or allowing the market to engender a run off of such certificates of deposits. In two instances, 1966 and 1970,

such runs were permitted. In both instances, threats to the stability of the financial system followed. Certificates of deposit combined with ceiling interest rates create an additional weapon for the Federal Reserve System to use: "economic brinkmanship". (Minsky, 1968, 1969) This weapon has been used twice, in 1966 and 1969-70, in an effort to break expansions with inflationary overtones. In both instances the effort was successful. Following 1966 the pause was shortlived. The 1969-70 liquidity squeeze ushered in a period of recession, sluggishness and slack that is still continuing at this writing.

By the middle 1960's commercial banks were heavily dependent upon their ability to "sell" certificates of deposit in order to maintain their position. As the Federal Reserve allowed the ceilings on the interest rate they paid to become effective, commercial banks were confronted with a crisis as their liabilities ran off. In the crunch of 1966 they were "unprepared". Large banks took substantial losses as they sold state and municipal debt to raise funds required by the running off of their liabilities. As a result of this experience, after the credit crunch of 1966 banks developed additional liabilities which would enable them to raise funds if ceilings on deposit rates forced a run off of certificates of deposits. Among the steps taken by banks were 1) borrowing from the Euro-dollar market, 2) the issuance of commercial paper by Bank holding companies as a substitute for certificates of deposit and 3) the development of non-eligible acceptances.

As banks tapped the Euro-dollar market they offset monetary constraint by making it possible for the reserve base and its efficacy to grow quite independently of Federal Reserve Policy. As balances denominated in dollars were borrowed from the European market by United States banks, the reserve funds of European Central Banks were made available to serve as 'reserves' of United States banks. Inasmuch as there was no offsetting reserves requirements against these borrowings, the reserve base grew by the full amount of these borrowings.

The Euro-dollar market ties together the various central banks. In the liquidity squeeze of 1969-70 Euro-dollar borrowings offset the balance of payments flow. It is apparent that a sufficiently high New York money market rate will draw 'gold' or its equivalent from Europe. The "dollar" crisis of August 1971 was the result of accumulated deficits obscured by short term capital inflows to the United States. As American interest rates went down from their peak and the need for Euro-dollar borrowings to meet domestic credit demand diminished, a reflux of Euro-dollars from the United States to Europe triggered the speculative flow which led to the devaluation of 1971.

Commercial paper issued by bank holding companies is quite simply a way of evading the interest rate ceiling on certificates of deposit. — More on mechanism & significance

Ineligible acceptances are a way in which a bank's credit can be used to facilitate financing, even if the bank does not do the lending. An "acceptance" is created when a bank accepts a contingent liability on a debt. An eligible acceptance is documented by evidence that goods are in trade - i.e. trade bills? such acceptances are "eligible" for discount at the Federal Reserve Banks. A non-eligible acceptance is not documented in such a manner. Nevertheless, as a result of the bank's contingent liability such an acceptance will be purchased on favorable terms by third parties. Inasmuch as potentially a bank can transform every item in its business loan portfolio into an "ineligible" acceptance, this instrument is a way in which bank credit can be extended without any direct absorption of bank reserves. In a sense, ineligible acceptances are a device by which the banking system can make the "money supply" "elastic" even if the reserve base is "inelastic".

As a result of these developments in 1969-70, the constraint on Federal Reserve Credit and the ceiling rates on certificates of deposit did not yield a credit crunch - rather there was a more protracted liquidity squeeze which culminated in the Penn-Central bankruptcy.

These financial innovations by banks were accompanied by parallel changes on the corporate side. Corporations began to use a greater variety of liabilities to finance positions in assets. Although these tendencies are evident for non-financial corporations - witness the 'funny money' episode in corporate financing - a clear picture of what is involved in liability management can be drawn by examining how consumer finance companies "juggle" liabilities in financing their position.

Basically, finance companies have four liabilities: equity capital, long-term bonds, bank credit and short-term open market (commercial) paper. These companies manage their liabilities so as to minimize the costs of financing their position, which consists of household debt. The minimum cost combination of liabilities depends upon the interest rate structure. Because of the nature of their relations with the suppliers of their paper, to a considerable extent, in the short-run the sales finance companies absorb whatever amount of paper their contacts submit. Through most of the post-war period the favored liability of these companies was short-term open market paper. However, a condition which underlay their ability to sell such paper was that they have sufficient unused bank lines of credit to cover a large part of their commercial paper outstanding. Whenever short-run surges in financing demand or market conditions for their commercial paper lead these organizations to borrow from banks (use their lines of credit) to an unusual extent, these organizations sell long-term debt - mainly to free their bank lines. To a large extent the bank lines of credit are a last resort financing source. Any market failure in the commercial paper market means that Banks have to act as lenders of last resort to the institutions involved.

During the late 1960's, non-financial corporations increasingly resorted to the commercial paper market as a source of short-term financing. In addition, during the late 1960's, the amount of financing of non-financial corporations by way of finance companies paper increased very rapidly. Thus, both directly and indirectly, non-financial corporations became increasingly dependent upon the continued availability of funds from the commercial paper market.

As the 1960's progressed the term to maturity of commercial paper decreased. Given the continued expansion of business and in particular the sharp run up in the ratio of external finance to investment, business became ever more dependent upon refinancing its positions in the short-term paper market - Peter was being repaid by borrowing from Paul.

The implications of these developments are that throughout the 1960's an even more taut financial system developed. In such a financial system, any untoward event - the failure because of mismanagement or generally miscalculated projections of a large heavily involved organization, the feedback to market prices of rising interest rates, or the shortfall of corporate income due to costs increases or revenue shortfalls - ~~can~~ may lead to a significant attempt to "liquidate" (sell out) positions in assets. That is the financial development over the post-war period as a whole and during the 1960's in particular made the financial system ever potentially more unstable.

Again another good section that U.S. & U.K. readers would gain from reading. The 'liability approach' is absent from the literature & requires an applied exposition such as this.

V. Postwar Financial Developments

Aggregate financial developments over the post-war years can be traced in the Flow of Funds Accounts and this information can be used to examine the current situation of the American economy. As the theory emphasizes the importance of corporate investment in determining aggregate behavior, we will look at only a small segment of the available data, that dealing with non-financial corporations. We recognize that this specialization may lead to error, for the effects of financial relations truly result from the way in which markets interact.

In Table I the rapid growth of fixed investment by the non-financial corporate sector in the second half of the 1960's is evident. It is also evident that corporate gross internal funds grew at a substantially lower rate than fixed investment in the latter part of the 1960's. This resulted in an explosive growth in the aggregate corporate deficit as a percentage of fixed investment. As is shown in Table II, this was paralleled by an explosive growth in the amount of long-term external financing by corporations.

Prior to the mid-1960's the corporate sector ran surpluses whenever corporate investment slackened (1955 and 1965 among the years included in the Tables). Since 1966 the deficits have been chronic and increasing as a proportion of fixed investment. In terms of Diagram II, these financing changes mean that the vertical distance between the average variable cost curve excluding financial commitments and one that fully includes the cash payments due to liabilities has been increasing for every level of output.

In Tables I-A and II-A the same data is presented for the last eight quarters (annual rate, seasonally deflated) for which data is available. The data shows that corporate investment well-nigh stagnated between 1969 IV and

1970 IV (the period of the official "recession") and that but a small growth occurred in the first three quarters of 1971 (a period of "sluggishness" or unsatisfactory growth)*. Through 1970 IV gross internal funds grew slowly, but in 1971 I through 1971 III such funds grew quite rapidly.

As a result of these trends, corporate deficits as a percentage of fixed investment declined from the 24.0% range of 1969 and 1970 to a 17.0%-18.0% range in 1971 I through III. These 1971 rates, though substantially lower than those of 1969 and 1970, are nevertheless markedly higher than those of the years examined prior to 1969.

The improvement in corporate cash flows is mainly responsible for the decrease in the ratio of external financing. This reflects a combination of the change in tax laws, which allow a larger retention of gross profits, and the fact that the recession though continuing is mild.

Beginning in 1966 there was a large increase in long-term external financing by corporations and this increase accelerated in 1970 and 1971 I and 1971 II. As a result of these accelerations, long-term external funds as a percent of total long-term financing rose to 34.5% in 1970 and 41.4% in 1971-II. In contrast this ratio ran between 14% and 20% in the years prior to 1967.

The amount of long-term funds that were raised in 1970 and 1971 far exceeded the deficits due to fixed investment exceeding gross internal funds. This reflected a "funding" of the short-term debt which had been increased and an offset to the running down of liquidity which took place during the late 1960's.

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*Looking at the investment data in Table I-A and recalling that 1971-I through 1971-III was a period of inflation [Nixon changed economic policy midway in 1971-III] in real terms I expect investment was lower in 1971-III than in 1970-III. I would argue that the recession was still underway in 1971-III.

	Deficit	Long Term External Funds	Excess Long Term Funds Over Deficit
1969	18.9	21.3	2.4
1970	20.1	32.4	12.3
1971*-I	15.2	41.6	26.4
II	14.7	50.8	36.1
III	15.0	40.1	25.1

*annual rate

The data in Tables III and IV give some cursory views of what happened to corporate liquidity. The ratio of liabilities to gross profits after taxes rose from 5.3 to 7.2 in the years 1966-70, the first consistent trend in this ratio in the post-war period. Over this same period the liabilities liquid asset ratio increased markedly.

The deterioration in the quality of the so-called liquid assets over this period is evident from Table IV. Over the period from 1950 to 1966 demand deposits and currency plus U.S. government securities fell from 96.2% to 62.3% of total liquid assets - by 1970 these two classes of assets totaled but 45.6% of liquid assets. Of especial interest is the growth of open market paper. By 1969 these assets were 28.8% of corporate liquid assets and at the end of 1970 - even after the Penn-Central failure - these assets were 24.7% of total corporate liquid assets.

Perhaps brief, but the approach comes over well.

VI. Current (Early 1972) Prospects and Conclusion

In spite of the fact that the current 1972 fiscal year is expected to yield a Federal budget deficit of the order of $35 to $40 billions, through 1971 III (the first quarter of Fiscal 72) the non-financial corporate sector still ran a substantial deficit. The "normal expectation" is that a huge Federal deficit is accompanied by a balanced budget or a surplus for the corporate sector. This will not be achieved if households run an unusually large surplus. An unusually large household surplus can sustain a simultaneous corporate and Federal deficit of the size now apparent. Unless there is a strong autonomous increase in consumer demand, the relative sluggishness of the economy can be expected to continue through the first part of 1972.

The reasons why only relative sluggishness can be forecast in the face of stagnant investment is the very large fiscal stimulus that now is built into the economy. If we assume that 4% is the "full employment" unemployment rate (and using the rule of thumb that every 1% decrease in the percentage unemployed leads to a 3% increase in output) the current approximately 6% unemployment rate implies that there is about 6% slack in the economy. At current levels of GNP a 6% slack in the economy implies a more than $60 billion shortfall of GNP. Even if we assume that $20 billion would be gathered in taxes or in reduced government spending from such a $60 billion increase in GNP, the full employment deficit is of the order of $15 to $20 billions of dollars. Given the financial history of the late 1960's this full employment deficit is <u>not</u> sufficient to set off a strong boom immediately. Government expenditure increases are now providing a sustaining stimulus to the economy. However, the combination of government expenditures in sustaining income and the large government deficit in increasing the robustness of the financial system is setting the stage for

another expansionary burst of investment. As this coming investment boom can be expected to start with a larger long-term debt position for the corporate non-financial sector relative to income and financial assets than was true of previous post-war investment booms, the expectation is that either the investment boom will not be as vigorous as that of the late 1960's, or if it is as vigorous it will be of shorter duration.

There is nothing in recent changes such as Nixon's introduction of peacetime wage and price controls which leads one to expect that the fundamental financial characteristics which led the economy to overshoot its stabilization constraints in 1966 and in 1970 will not be operating once the economy again returns to and sustains full employment. Stability in a capitalist environment is destabilizing as it tends to set off an investment boom. Given 1) the ability of a complex financial system to generate the finance required by such an investment boom and 2) that finance so generated increases the susceptibility of the system to a financial crisis, the only way the cycle of euphoric boom and relative stagnation can be broken is if the rules of the game are changed so that direct constraints are available for the boom period. These constraints would have to take the form of either investment licensing or the setting of effective liability standards for corporations.

The evidence from the 1960's for the United States is that the standard monetary and fiscal tools offer at best a poor defense against strong investment powered booms and an uncertain stimulus to a sluggish or stagnant economy. As it is still prone to business cycles, American capitalism remains flawed. The available policy prescriptions are able to ameliorate some symptoms and ease some pains, but they are not able to cure the disease. Furthermore, the need to depend upon economic brinkmanship to constrain strong expansions means

an inexact policy in terms of expected outcomes

that the danger remains that at some future date policy errors can "override" the defenses built into the income generating and financial systems so that a serious depression is triggered. Awareness by the authorities of the dangers of disaster is in these circumstances necessary for the defense against disaster.

Hy: I ~~think~~ this paper is good & that it should be available for U.S. & U.K. readers. Having read it I feel your fears (in your letter) re redundancy of the 'textbook model' section and the 'abrupt' shift into empirics are not met in a degree to prevent U.S./U.K publication. In fact the ideas, comparisons and approach of all sections should prove more than helpful to the profession ~~still~~ linked with IS-LM and the 'asset' sides of financial affairs etc. In a word 'Publish' — in U.S/U.K. journal. I gain a great deal from thinking upon your work.

Maurice

TABLE I

Fixed Investment and Gross Internal Funds
Non-Financial Corporate Business
1950, 1955, 1960, 1965-70
(Billions of Dollars)

Item \ Year	1950	1955	1960	1965	1966	1967	1968	1969	1970
Gross Internal Funds	17.9	29.2	34.4	56.6	61.2	61.5	61.7	59.5	61.5
Fixed Investment	19.3	26.6	36.0	54.9	62.7	64.7	69.7	78.4	81.6
Surplus (+) or Deficit (-)	-1.4	+2.6	-1.6	+1.7	-1.5	-3.2	-8.0	-18.9	-20.1
Surplus (+) or Deficit (-) as a % of Fixed Investment	-7.3%	+9.8	-4.4%	+3.1	-2.4%	-4.9%	-11.5%	-24.1%	-24.6%

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

H. P. Minsky
February 1972

TABLE I-A

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

Item \ Year	1969 IV	1970 I	1970 II	1970 III	1970 IV	1971 I	1971 II	1971 III
Gross Internal Funds	57.9	59.7	61.8	62.1	62.4	68.3	71.8	71.6
Fixed Investment	81.4	79.8	81.3	84.1	81.2	83.5	85.5	86.6
Surplus (+) or Deficit (-)	-23.5	-20.1	-19.5	-22.0	-18.8	-15.2	-14.7	-15.0
Surplus (+) or Deficit (-) as a % of Fixed Investment	-28.9	-25.2	-24.0	-26.2	-23.1	-18.2	-17.2	-17.3

Source: Board of Governors of the Federal Reserve System
Flow of Funds, Seasonally Adjusted
3rd Quarter, Nov. 5, 1971, pg. 6.

TABLE II

External and Internal Long-Term Financing of Investment
Non-Financial Corporate Business
1950, 1955, 1960, 1965-70
(Billions of Dollars)

Item \ Year	1950	1955	1960	1965	1966	1967	1968	1969	1970
Corporate Bonds	1.6	2.8	3.5	5.4	10.2	14.7	12.9	21.1	20.3
Corporate Stock	1.4	1.9	1.6	-	1.2	2.3	-.8	4.3	6.8
Corporate Mortgages	.9	1.8	2.5	3.9	4.2	4.5	5.8	4.8	5.3
Long Term External Financing	3.9	6.5	7.6	9.3	15.6	21.3	17.9	21.3	32.4
Gross Internal Funds	17.9	29.2	34.4	56.6	61.2	61.5	61.7	59.5	61.5
Total Long-Term Financing	21.8	35.7	42.0	65.8	76.8	83.0	79.6	80.8	93.9
Long Term External Funds as a % of Total Long Term Financing	17.9%	18.2%	18.1%	14.1%	20.3%	25.9%	22.5%	26.3%	34.5%

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

TABLE II-A

External and Internal Long-Term Financing of Investment
Non-Financial Corporate Business
1969 IV - 1971 III
Seasonally Adjusted Annual Rates
(Billions of Dollars)

Item \ Year	1969 IV	1970 I	1970 II	1970 III	1970 IV	1971 I	1971 II	1971 III
Corporate Bonds	10.9	13.9	22.7	20.7	23.8	23.8	22.1	16.2
Corporate Stock	9.1	6.3	6.2	5.0	9.6	9.0	16.4	12.1
Corporate Mortgages	5.7	4.3	3.4	5.8	7.8	8.8	12.3	11.8
Long Term External Financing	25.7	24.5	32.3	31.5	41.2	41.6	50.8	40.1
Gross Internal Funds	57.9	59.7	61.8	62.1	62.4	68.3	71.8	71.6
Total Long-Term Financing	83.6	84.2	94.1	93.6	103.6	109.9	122.6	111.7
Long Term External Funds as a % of Total Long Term Financing	30.7%	29.1%	34.3%	33.7%	39.8%	37.9%	41.4%	36.9%

Source: Board of Governors of The Federal Reserve System
Flow of Funds, Seasonally Adjusted
3rd, Quarter, 1971, Nov. 5, 1971 , pg. 6.

TABLE III

Liabilities, Gross Profits and Financial Assets
Non-Financial Corporate Business
1950, 1955, 1960, 1965-70
(Ratios)

Item \ Year	1950	1955	1960	1965	1966	1967	1968	1969	1970
Liabilities ÷ Gross Profits After Taxes	5.4	5.2	6.0	5.2	5.3	5.6	6.0	6.6	7.2
Liabilities ÷ Financial Assets	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5
Liabilities ÷ Liquid Assets	3.0	3.5	4.8	5.4	5.8	6.1	6.0	7.0	6.8
Liabilities ÷ Protected Assets*	3.0	3.6	5.0	5.9	6.6	7.0	7.2	9.8	9.0

*Protected Assets are liquid assets minus commercial paper

Underlying Data from the Flow of Funds Accounts

TABLE IV

Composition of Liquid Assets
Non-Financial Corporate Business
1950, 1955, 1960, 1965-70
(% of Liquid Assets)

Item \ Year	1950	1955	1960	1965	1966	1967	1968	1969	1970
Demand Deposits and Currency	55.8	55.7	56.6	39.8	40.3	40.0	37.4	38.0	34.4
Time Deposits	1.9	1.7	4.9	27.1	25.9	28.9	27.9	17.0	29.8
U.S. Government Securities	41.4	40.4	34.3	24.0	22.0	17.6	17.4	16.3	11.2
Open Market Paper	.8	2.1	4.2	9.2	11.8	13.5	17.2	28.8	24.7

Underlying Data from the
Flow of Funds Accounts

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