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Towards a Meaningful Macro Model of the Economy

H. P. Minsky

1. These notes are designed to start a dialogue within the Department among those who might participate in a cooperative research effort on the aggregate behavioral characteristics of the thoroughly financial American economy.
2. In particular I am hoping for a response from Ed. Greenberg, Larry Meyers and Fred Raines. I hope their response will be operational in the sense that it gives us a basis for operating.
3. Aside from money and glory three considerations motivate this memo:
  - a) The obvious [definition of obvious: no need to document, can be asserted as being so without citing evidence. Almost all proposition which are asserted to be obviously true are not wholly true, at best they are conditionally true] failure of both the large scale econometric forecasting and the monetarist models as guides to economic policy. [Note that the criterion for accepting a formulation is artfully changed to being a guide for policy rather than a replication of channels or prediction]. If challenged on this score we will argue that the events of June 1970--when the Federal Reserve's Monetary Policy became that of a lender of last resort--just cannot happen within the frameworks of the macro-models and the monetarists. Within our model the events of June '70 will be a systemic response to monetary constraint within a particular expectational and financial environment; environments which are endogenously determined. Thus "'quasi'-panics" are policy created phenomena and switching among policy goals takes place.
  - b) In a talk Gov. Maisel implicitly challenged Minsky to make his ideas operational. (He has since avoided facing up to implications of his remarks). What operational as used by Maisel means is, I believe, metric-

even though the metric formulation may only be possible by means of data corruption and the use of corrupting econometric techniques. However, the Maisels of this world will not be satisfied unless equations with estimated coefficients are set down, regardless of how corrupt the data and how corrupting the techniques used in estimation. [We will have to make much of corrupt data and corrupting techniques--I will try to give a precise definition later].

c) Harry Johnson, in his Ely lecture at the meetings in Detroit, set out guidelines for over-throwing a ruling orthodoxy, even if what you have to offer in its stead is neither essentially different, new, nor valid. If the Johnson formula yielded transitory success for a vacuous formulation such as Friedman's monetarism, it should certainly yield a durable success for a deep and meaningful alternative such as we (editorial) will propose.

4. There are two converging orthodox positions that are ripe for challenge and if challenged in a proper manner they should be readily overthrown (we shall overthrow). The two positions are the vulgar Keynesianism of the large-scale macro-models (Klein, Okun, Michigan; Modigliani may be too sophisticated to caricature) and the superficially subtle but fundamentally crude monetarism of Friedman. The vulgar Keynesianism of Patinkin and Modigliani (1963) is a bastard formulation, the dominant genetic traits are derived from the quantity theory and the Keynesian heritage is muted or mutated. The Quantity Theory of Friedman is but a reformulation of the standard improperly specified liquidity preference function as it appears in the main line literature. Although Friedman asserted the Quantity Theory assumed the stability of a function and not of a value that error had already been well established following Hicks, who drew the stable negatively sloped L.M. function. Obviously both Hicks and Friedman are in error. For the LM or the demand for money function to be stable then either financial institutions are 1) invariant or 2) irrelevant or 3) institutional

change is a stable and reversible function of interest rates. In the United States over the period since World War II even the most casual observations heard witness to the heroic nature of the implicit assumptions made in order to assert the stability of the money related function. [Note that if institutional changes are endogenous, during periods of expansion the institutional changes can increase the potential for instability by way of rapid disintermediation: it is the new, or exotic, intermediation which is most vulnerable.

5. As is often true of controversy, the more heated the debate the smaller the substantive differences between the participants. Both the standard American Keynesians and the Friedman monetarist views are conservative, in the sense that they aver that by the correct application of selected monetary and fiscal policy instruments the economy as it is now organized will tend toward (almost?) always operating in a socially satisfactory manner. A satisfactory mode of operation of the economy is most often defined in terms of employment rates and price level changes. Differences as to what exactly characterizes a satisfactory state--i.e., acceptable unemployment and inflation rates--should not obscure the fact that both the Keynesians and the Monetarists believe that the correct application of these limited policy instruments will assure that a satisfactory state will almost rule. To both schools there is no need for fundamental structural reform or the addition of exotic policy instruments: monetary and fiscal policy are sufficient.
6. Johnson points out that an important step to getting a "theory" accepted is a social policy problem and perhaps a social view that the orthodox theories and the approved policy instruments do not successfully handle. The emergence of an extended period of sluggishness accompanied by continued inflation as well as the continued unsatisfactory distribution of appropriately defined income are the social problems that neither the standard American Keynesians nor the monetarists face. A theorem that if any economy with the conventional limitations

on policy instruments achieves extended full employment then inflationary financial and investment reactions will set in, so that either accelerating inflation or a 'crisis' followed by extended sluggishness and unemployment results is superficially consistent with recent observations. It is also radical, especially as it flies in the face of the latent perfectionist philosophy of America. Thus the proposition "American (Financial) Capitalism is inherently flawed" is an alternative to the naive topianism of both the Keynesian and the Friedman view.

7. The extended set of policy instruments necessary to achieve stable growth within an essentially capitalist environment may involve investment licensing and controls over private non-financial organization liability structures, in addition to wage and price restrictions. These extended policy instruments imply that issues of the definition and distribution of income will need to be faced. I do not know whether it is possible to derive from the macro-economic flaws of capitalism, arguments to the effect that capitalism cannot solve problems of pollution etc. It would be nice if we could!
8. Johnson also points out that the orthodoxies tend to be real and technologically based--and the relevant economic problem areas are monetary (or financial) and social. Thus in the dominant Macro-models production function and labor market ideas have supplanted the money-flow ideas that are dominant in The General Theory... The monetarist with their emphasis upon natural rates of employment, see recent formulations by Friedman and in the later St. Louis models, are once again having real phenomena determine real output--excepting perhaps for short run deviations.
9. As a minimum the proposed model will be based upon gross sectoral liability structures (combined not consolidated balance sheets). In principal sectoring will be determined by how the various components of final demand are financed: thus non-durable consumption are those expenditures which are normally financed out of wage or other current income, durable consumption expenditures are

financed by consumer credit, housing by mortgages, investment by business retained earnings and business deficits, etc.... As a result of these financing considerations sectoral liability and asset structures affect spending. The sectoral consumption functions should include not only stock market valuations of equities but also the payment commitments of households on various types of financial contracts. The amount of refinancing of debt, as well as the repayment and emission of new debt by the various sectors becomes important - as well as the cash flow from operations. Note that such a model would a) have to call for changes in data sources and b) have to proxy desired data by using what is available. As a result of the lack of truly appropriate data many opportunities can be created in which data can be corrupted. Thus we can persist until empirical results are achieved that are consistent with whatever we wish to prove. [As this section has evolved it becomes clear that we look at the entire structure of the economy in terms of aggregating units that are homogeneous with respect to their financial structure. In Keynes' formulation consumption financed by wages, investment by use of funds from financial markets. In 1970 may need to further subdivide units. Perhaps households with substantial financial assets are different from others etc.]

10. At some stage it will be necessary to destroy the credibility of the empirical work of both the monetarists and the macro model-builders. To do this their methodology must become suspect and to lend force to this suspicion an alternative scientifically valid methodology must be advanced. The relevant events for a crisis oriented view exist for only a short time. Thus averaging over time corrupts the data by attenuating local peaks and troughs. [Even basic raw numbers are often presented as averages.] Seasonal adjustments also corrupt data [witness the seasonality of financial crises prior to Federal Reserve Systems]. One obvious methodological point will be to deny the legitimacy of averaging - which implies that curve fitting is a corrupting technique.

[Definition: Data is corrupted when relations drawn from the theory to be tested are used to adjust, edit, censor or otherwise transform the data. Corrupt data are only in part observations on the world, in part they are generated by the theory which in turn they are to test. A corrupt experiment is one in which the proposition being tested and the data used to test the propositions are both derived from the same theory. Ideas such as that of Slutsky re moving averages are useful in arguing against permanenting income.]

11. From the doctrine of corruption, it follows that a necessary condition that empirical work must satisfy if it is to be valid is for it to be enlightened by a clear statement of market processes that would produce the asserted relation and by some evidence that such market processes in fact take place. This econometric work and institutional analysis must be integrated; in particular institutional consistency is necessary for the results of econometric research to be accepted. The as if methodology not being disciplined by the need to specify mechanism is really a license to corrupt. Similarly the best fit criterion for relations in macro-models opens the way to corruption: after all the statistical character of the often corrupted data used in such model building almost always do not conform to the specifications of the statistical model used in deriving best fit criteria.
12. Johnson points out that a successful new orthodoxy will throw out some relations from the old and introduce some new relations. The fundamental throw away will be the production function. The production function is to be attacked as a construct which does not yield useful theorems. In its place will be the valuation of a firm where a firm generates future cash flows. Expected cash flows for a firm will be total revenue minus those items that go into making up total variable cost. The valuation of the firm will depend upon risk aversion and the expected distribution of earnings. A state preference view of uncertainty combined with risk aversion is used to determine

the value of the firms capital. The likelihood of different states of nature, the probability distribution of output in each state of nature and the risk aversion of portfolio holders determine the certain value that will yield utility equal to the expected utility of the uncertain choices. Changes in these likelihoods and preferences will change value yielding utility equal to expected utility: the crisis generating mechanism as well as the attenuation of the memory of a crisis are used to endogenously generate changes in expectations and preferences.

13. From the valuation of the firm and the supply price of capital the demand price for various produceable items that can enter firm's production processes will be derived. Supply price of such items is a function of wages and the pace of production.
14. In particular the valuation of a firm is sensitive to liability structure and the desired liability structure responds to subjective views as to the future of the economy as well as preferences with respect to risk. If we consider a probability distribution of total revenue minus out of pocket costs the liability structure of the firm tells you how much of this residual flow is committed. During a period of euphoric investment demand the views as to the future of the economy are such that entrepreneurs feel they can safely pledge a larger part of the large expected cash flows from increments to scale, and portfolio holders preferences are such that they feel they can hold such instruments. The ratio of commitments to expected flows increase, but changes in expected frequency distribution and in preferences are such that objective deterioration is accompanied by subjective appreciation. In the U.S. this is transformed into a stock market boom.
15. A change in the view of what is forthcoming as well as a change in preferences can lead to a sharp fall in asset (stock exchange) value as well as to a change in desired liability structure so that firms use cash flows to clean up balance sheets etc.



16. Along side this real "liquidity" phenomena are the phenomena of the evolution and innovation in financial usages and institutions. This also is cyclical, being induced and facilitated by an extended boom. The process accelerates as the boom is extended in time.
17. To summarize the model is to be an extension of the following proposition: American capitalism continues to have its historic cyclical propensities but the impact of these propensities has been attenuated by the large increase in the relative share of the Federal Government. Nevertheless the fundamental latent time path of the economy is strongly cyclical.
18. One further note: the paradigm for both standard Keynesianism and monetarism is that of either static equilibrium or steady growth. The paradigm for our alternative will be business cycles. Jean Robinson et. al. have fallen into a trap when they want to discuss the behavior of a steady growth state. The production function is a guide to investment and hence income distribution is thrust aside when (1) cyclical uncertainty dominates productivity considerations in investment decisions and (2) the size of gross quasi-rents depend up system performance.
19. In formal model construction we thrust aside as irrelevant any model based upon a modification of a barter formulation, rather we insist upon beginning with a fully developed financial system. Money is not a commodity that has become the numeraire. Money is one form that the financing of real capital goods takes place: money holdings just like stocks and bonds represent an interest, albeit indirect (like insurance policies), in real capital goods. That is while some hold common stocks to reflect their participation in the financing of the economy's stock of real capital, others own money. [Of course if there exists a government with a debt, money may represent a proprietary interest in the debt. Commodity money offers no difficulties.]

20. I don't know whether from the above a proposal can be formulated. Obviously such a proposal will require the **corruption** of my ideas, after all we cannot expect N.S.F. to fund research **whose** first premise is that everything that the N.S.F. has funded in monetary or macro analysis has been irrelevant if not foolish and perhaps downright harmful.