A Modest Step Towards Fixed Parities*

1. The experience of the last ten years has keenly disappointed those, including myself, who thought that floating rates would have lessened inflation, unemployment and balance of payments disequilibria. In addition, daily fluctuations of exchange rates have recently become too sharp, imposing unwelcome risks on business enterprises. Whether the failure of the floating system was due to continued intervention in the market by national monetary authorities, to mismanagement, to external events such as the oil explosion or to the differential rates of inflation, all this does not greatly matter.

Some may think that part of the explanation is to be found in the near absence of concerted action at the international level and in the lack of political will to manage floating by international decisions and by a better coordination of exchange rate and interest rate policies.

It has always been realized that freely floating rates could not solve simultaneously the problems of liquidity, arising from temporary and reversible external imbalances, and those of adjustment arising from fundamental disequilibria. Private speculation did not perform the stabilizing role we all expected of it. On the other hand, depreciation of a currency as an instrument of adjustment proved inadequate owing to its feed-back effects and to the existence in some countries of a large measure of indexation. The appreciation of a currency has proved in many cases successful in keeping down external inflationary pressure but has not helped so much in restoring balance of payments equilibrium.

This sense of dissatisfaction with the functioning of the floating rate system has been one of the reasons for the move in Europe towards regional monetary integration, starting in the early Seventies and leading to the creation of the European Monetary System.

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2. The urge towards more stable exchange rates, even to fixed parities, is becoming more intense. In particular, fixed parities are viewed as a better instrument than fluctuating rates in compelling national authorities to follow correct economic policies and to abide by monetary discipline.

Some people may think that a return to gold, i.e. to an international standard over which individual national authorities have no control, would solve the problem after ten years of mistakes and misgivings. Others may think that gold will never be on the monetary agenda again and that a reconsideration of the problem along these lines betrays a failure to appreciate present realities. The price of gold has been too volatile to become once again a stable measure of values to which currencies could be linked and in which they could be made convertible with some enduring confidence.

Some people would look at SDR, or even better at an improved SDR, as the appropriate standard for such purposes. But this is a long term perspective, because SDR still forms a small fraction of international liquidity and because the "substitution account" — which would have gone a long way towards enhancing the instrument — has been shelved.

Whatever the standard — gold or SDRs — we must not again overlook the fact that it has to be not only a common denominator of currencies, but also an instrument for the conservation of value. A not insignificant cause of the break down of the Bretton Woods gold-dollar standard was the refusal to implement the IMF Articles of agreement concerning uniform changes in par values.

3. In view of the uncertainties as to the future approach to a possible return to a par value system based on an international standard, we might envisage a number of intermediate steps which would not prejudge the final choice. We must recognize that:

— the aim to be attained is convertibility at fixed rates of national currencies held by non-residents into an acceptable international monetary standard and that this aim can be attained only gradually;

— the choice of the standard should for the time being be left open for future decisions;

— the choice has to be made only when inflation has been reduced to manageable proportions and when differential rates of inflation between industrial countries have disappeared;

— in the meantime we have to enhance both the role of SDR and gold;

If we accept these assumptions, the intermediate aims could be identified as the following:

— gradual stabilization of exchange rates;

— gradual stabilization of the price of gold; and

— mobilization of gold, which is now a very illiquid asset, to be achieved along with its increasing monetary role and the increasing role of SDRs.

The attainment of such intermediate aims is desirable in itself, independently of the above-mentioned final aim, because it would introduce into the system a degree of stability beneficial to the improvement of economic relations between countries.

4. The gradual stabilization of exchange rates, given the existence of three main distinct monetary zones (EEC, dollar and yen) whose currencies fluctuate freely against each other, could be pursued in the framework of a tripartite monetary agreement.

Flexible bands of fluctuation could be agreed upon between the three main currencies (ECU, dollar and yen), possibly after the entry of the UK into the EMS. Margins could be fixed at plus-minus, say, 10 percent above and below a central "equilibrium" rate. Margins could be progressively restricted. Margins should be defended by interventions in the market using, in addition to currency reserves, the proceeds of central banks' swaps, IMF drawings, proceeds of SDRs and/or gold sales and so on. The central rate could be changed by common agreement in the presence of a fundamental disequilibrium and possibly within the margins of fluctuations. In this context, a divergence threshold of the EMS type could also be considered.

Stabilization of exchange rates, to be successful, has to be accompanied by close coordination of interest-rate policies. In 1980, the US prime rate swung from 20 percent in April to 10 percent in July and to above 20 percent at the year end. Such a

high rate is clearly depressing for the world economy at large (US production represents around 40 percent of the global production of the industrial world), not so much because of its level in nominal terms, but because of a very significant divergence with the rate of inflation. US has at present a real rate of interest higher than in most industrial countries. As Germany and other countries will presumably follow the same course by restricting liquidity, the depressing influence of high real rates will spread.

5. Stabilization of the price of gold is a necessary prerequisite of a remonetization of gold, if such a development is deemed desirable. But it has some value in itself.

The experience of the gold pool in the Sixties is a model of the kind of stabilization to be avoided. Anyhow, it cannot now be followed because entirely different conditions (there is no official price of gold) make it impossible to operate in the same way. The principle of that model was to consider the official price of 35 dollars an ounce as the " true " price to be defended on the market.

Any method of stabilization has to avoid, at least initially, the pitfall which consists in predetermining the level at which the price of gold will be pegged. One of the procedures to be followed could be the following:

a) the BIS, acting as agent for a number of central banks, declares itself ready to buy and sell gold against dollars at margins respectively below and above a central price corresponding to the average of the market prices in, say, the previous three fixings;

b) the average of three fixings should be progressively enlarged to some 30 fixings or more in the course of the following months;

c) gold purchased and sold should be allocated to or supplied by the central banks participating in the stabilization programme in proportion to their gold reserves.

Any rising or declining trend of the market price of gold will thus be progressively slowed down. In the course of time, if an appropriate level of the price of gold is identified, the intervention price could be modified away from the averages of market prices indicated above.

6. Gold is at present a largely illiquid asset. In case of need, central banks cannot sell gold in the market without heavily depressing its price, except for very modest amounts, in order to finance balance-of-payments deficits. As in the case of Italy in the past, it can be used as collateral to obtain loans, although at the cost of to some extent impairing external standing and image. An attempt to make gold more usable for monetary purposes has been made in the EEC through the creation of ECUs, which are issued against the deposit, at three months' maturity, of a certain percentage of gold and dollar reserves of member countries.

Working on similar lines, gold could be made to re-enter the international monetary circuit. Some of the aims of the now defunct " substitution account " could also be achieved in the process by injecting dollars in addition to gold into the mechanism. One possible line of action could be the following.

Each future allocation of SDRs could be made available to IMF members in proportion to their quotas on the condition that the receiving member accept from the Fund an additional amount of SDRs, equal — say — to the double of the allocation as a counterpart of gold and dollars (half and half) deposited with the Fund at a renewable three months' maturity. At the maturity of the deposit, the amount of gold and dollars deposited with the Fund against SDRs will be adjusted to the prevailing market prices of the two assets.

Some IMF members — but this does not seem likely to happen — may not agree to swap gold and dollars against the additional distribution of SDRs; in that case, they would not be entitled to receive their basic allocation. The unallocated amounts of SDRs would be apportioned to those remaining IMF members in proportion to their quotas, on the same condition, ie. that they swap gold and dollars for the double of the allocated amount.

In the course of time, as exchange rates and gold prices become more stable thanks to the proposed tripartite agreement and to the interventions of the BIS, the SDR-gold/dollar transactions on a deposit basis could be transformed into direct sales of SDRs from the IMF to member countries against gold and dollars. Moreover, the 1 to 2 proportion of SDR allocations to SDR sales could be modified in favour of the latter.

Subsequent steps are now difficult to foresee. The evolution of the international monetary system could either move further towards fixed parities or stop at this stage for a lengthy period. Even in that event, considerable results would have been achieved: more stable exchange rates, stabilization of the price of gold, mobilization of gold for monetary purposes and enhancement of the role of SDRs.

In the meanwhile, a better coordination between EEC and US would be worked out, particularly in the field of interest rate policy.

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The Chicago Monetary Growth-Rate Rule: Friedman on Simons Reconsidered

I. At Issue

In their monumental *A Monetary History of the United States, 1867-1960,* (1963) Milton Friedman and Anna Schwartz (F & S) expound the causal role of the Federal Reserve System in unleashing the American depression of the 1930s. In particular, F & S argue that despite official pronouncements to the contrary, the Fed had been pursuing contractionary monetary policies prior to and during the Great Depression. F & S also find that "Many professional economists as well as others viewed the depression as a desirable and necessary economic development required to eliminate inefficiency and weakness... and interpreted monetary changes as an incidental result rather than a contributing cause" (1963, pp. 408-09).

In a further essay (1967), Friedman identifies his Chicago mentor, Henry C. Simons, as one who "quite clearly accepted the official apologia of the Federal Reserve System — it had done its best, but was powerless to stop the collapse..." (1967, p. 6). Friedman goes so far as to categorize Simons's proposals for monetary reform as "largely irrelevant and wrong" and links these proposals to Simons's interpretation of the events precipitating the Great Depression (1967, p. 2). Specifically, Simons perceived that the depression was caused by an unstable velocity of circulation. For this reason, according to Friedman, Simons opted for a policy rule in terms of price-level stabilization, whereby fluctuations in velocity would be offset by opposite variations in the supply of money. Friedman concludes his essay with the observation: "Had Simons known the facts as we now know them, he would, I believe, have been confirmed in his earlier persuasion as to the merits of the rule of a fixed quantity of money... rather than have accepted,

albeit with great reluctance, stabilization of a price level" (1967, pp. 12-13).[1]

In what follows we take up a series of issues pertaining to the monetary interpretation of the Great Depression as set forth by F & S. Our point of departure is Friedman's view that Simons's propagation of a rule in terms of a price level was largely a result of the latter's misinterpretation of the Federal Reserve's performance during the depression. Briefly to anticipate, we find that espousal of a monetary rule involves, foremost, confidence in the extrapolability of long-term statistical trends, particularly with respect to velocity. Simons, as well as several of his Chicago colleagues who shared an interest in monetary economics during the 1930s, displayed a marked aversion to statistical extrapolation. We also link the initial formulation of the monetary hypothesis of the Great Depression to an entirely overlooked original contribution by the American quantity theorists William Foster and Waddill Catchings. Their contribution, published in July 1929 *before* the initial downturn in economic activity had actually set in — and prophetically entitled, "Is the Reserve Board Keeping Faith?" essentially anticipates views set forth by F & S. Additionally, the monetary economics of Foster and Catchings are shown to have included the formulation of the monetary growth-rate rule.

II. Empirical Economics and the Chicago School

The proposition that Henry Simons would have advocated a rule in terms of the quantity of money, in light of the evidence presented by F & S, requires an exposition of the earlier Chicago School's perspective with regard to empiricism. The association of Chicago with a rule formulated in terms of the quantity of

[1] In a recent paper, PATINKIN refers to the statement by Friedman quoted in the text and argues: "I must confess that I have always found it difficult to understand the operational meaning of such statements: to understand how they can be subjected to empirical test" (1979, p. 222). Patinkin also provides evidence showing that Simons did have at his disposal data that revealed that the Fed had been pursuing a contractionary policy after 1929. Nevertheless, as Patinkin notes, Simons continued to espouse a rule in terms of price-level stabilization (1979, pp. 222-24).

money, or its rate of growth, reflects the emergence of the methodology of empirical verification among Chicago monetarists. Thus, a consideration of the earlier Chicago School's position on empirical economics is in order.

In addition to Simons, other Chicago economists who shared, at least in part, an interest in monetary economics during the 1930s included Frank Knight, Jacob Viner, Lloyd Mints, and Paul Douglas.[2] In contrast to Mints — who expressed some interest in statistical work during the late 1940s and early 1950s — and to Douglas, the Chicago monetarists shared a distrust of empiricism. Consider, for example, Frank Knight, whose well-known approach to economics was an abstract and philosophical one. In a 1940 essay (reprinted in Knight, 1956), "What is Truth in Economics?" Knight reflected as follows on the role of measurement in economics:

> A fundamental weakness in inductive prediction in economics is that empirical (i.e.) statistical data never present anything like an exhaustive analysis of phenomenal sequences down to really elementary components, and the correlation of an extrapolation from composite magnitudes or series never can be very reliable... [thus] studies of "forecasting" make it doubtful whether the results (so far) are much better than random guesses (1956, p. 176).

Knight's distrust of empiricism influenced his particular formulation of proper stabilization policy. For example, in a 1941 article on "The Business Cycle, Interest, and Money" (reprinted in Knight, 1956), he argued that the business cycle was caused by independent variations in the velocity of circulation of money which, in turn, were due to changing expectations with regard to the general price level. Any tendency of prices to fall generates an impression of yet further declines and thus causes the velocity of circulation to fall in a cumulative fashion. Stabilization policy, therefore, required that changes in velocity be offset. But since previous variations in velocity could not be extrapolated for purposes of forecasting, Knight opted for discretionary price-level stabilization to control the cycle. He stated, "An approximate constancy

[2] The nature of the earlier Chicago monetary tradition has been the subject of considerable discussion, including work by FRIEDMAN (1967; 1972); DAVIS (1968; 1971; 1979); PATINKIN (1969; 1972 a; 1972 b; 1973; 1979); HUMPHREY (1971; 1973); TAVLAS (1976; 1977 a; 1977 b; 1979; 1981); and ASCHHEIM and TAVLAS (1979).

in general prices, or in the relation between product prices and wages, can in the nature of the case be achieved by deliberate action, based on constant attention, correcting or offsetting incipient tendencies to expansion or contraction" (1956, pp. 224-25).

Jacob Viner shared Knight's distrust of empiricism. For example, in a 1928 paper [3] he echoed a view remarkably similar to the preceding statement on empiricism by Knight and bearing directly upon the question of a rule based on past trends. Said Viner:

> I do not believe that there are many economic time series which forecast their own trend with sufficient accuracy to be much superior to the random guess as to future trends. That there is a law of the growth of population, which can be expressed in a simple algebraic equation; that there is a law of the growth of capital, namely that it grows at the rate of three percent a year; ... that there is a fixed law governing the distribution of income which can be stated in arithmetical terms or shown graphically; such propositions... seem to me to be purely fantastic (1928, reprinted in Viner 1958).

Viner never did espouse a policy rule, not even one formulated in terms of a price level. On the contrary, he consistently favored discretionary monetary policy. He made this point clear in a 1936 paper [4] in which he stressed his objection to policy rules on the grounds that they were incapable of being reduced to a "statistically definable objective" (1936, p. 116).

The early Chicago aversion to empiricism does not, of course, logically preclude the possibility that Chicagoans might have been so convinced by the F & S evidence, had they been aware of it, that they would have opted for a monetary rule. The case of Viner, however, belies this possibility for two reasons. First, as Friedman (1972) has documented, during the 1930s Viner was cognizant of the fact that the Federal Reserve System was pursuing deflationary policies and, as a result, Viner strongly criticized the System's practices. Nevertheless, as already noted, he favored discretionary monetary policy rather than a rule.[5] Second, consider the argument which Viner presented in a 1964 essay:[6]

[3] "The Present Status and Future Prospects of Quantitative Economics" (1928).
[4] "Recent Legislation and the Banking Situation" (1936).
[5] As demonstrated in note 1 to this paper, PATINKIN (1979) argues that Simons also recognized that the Fed had been pursuing contractionary policies. Hence, the remarks made in the text with reference to Viner also pertain to Simons.
[6] *Problems in Monetary Control* (1964).

> They [economic forecasters] are attempting a performance for which there is no logical justification... [their] techniques are suitable only for physical phenomena determined by a great number of variables which are substantially homogenous and coordinate in weight, and when the universe as a whole is a stable one. This is not what the economy is like (1964, p. 9).

Hence,

> There is no simple formula which can be discovered which provides in advance a guide to the decisions to be made or a code of working rules by which to govern the execution of these decisions (1964, p. 7).

It is significant that these remarks were made *after* the publication of the F & S evidence. Viner was skeptical as to the feasibility of rules in monetary policy not because of a misinterpretation of the facts of the Great Depression, but, as the aforementioned evidence substantiates, because of a strong distrust of empirical economics.

Lloyd Mints also displayed a lack of interest in empirical work.[7] Although in favor of rules, Mints argued consistently during the 1930s in favor of a rule to be stated in terms of price-level stabilization rather than in terms of the quantity of money. Yet, notably by the late 1940s, Mints began to evince some interest in empirical work. Specifically, in his *Monetary Policy for a Competitive Society* (1950) Mints adduced empirical data confirming a simple correlation between the initial decline in the money stock and the subsequent drop in both wholesale prices and industrial production during the Great Depression. At the same time, Mints showed less skepticism towards a monetary rule.[8]

The only Chicagoan who during the 1930s advocated a rule in terms of the growth-rate of the money stock was Paul Douglas.[9] Thus, on numerous occasions during the late 1920s and throughout

[7] This point is made by PATINKIN (1973).
[8] The simple statistical test used by Mints led him to interpret the early 1930s as a period characterized by a lack of sufficiently vigorous action on the part of the Federal Reserve System. Furthermore, MINTS had, in a 1946 article, "Monetary Policy," given consideration to the possibility of increasing "the quantity of money at some constant rate, roughly equivalent to the increase in output" (1946, p. 61). However, he opted instead for price-level stabilization and adhered to this option in his 1950 volume, albeit with less intense conviction. There were, he argued, two "difficulties" associated with a price-level rule: "(1) the lag in the effect of the monetary action, and (2) the discretionary power that would have to be given to some administrative agency in regard to the volume of open-market operation" (1950, pp. 171-72).
[9] Douglas's monetary views are discussed in TAVLAS (1977 b).

the 1930s, Douglas argued that the annual increase in the stock of money should correspond to the annual increase in production. But much of Douglas' work during this time consisted of the derivation of statistical series. Indeed, his pioneering studies on the relative effects of labor and capital upon production are recognized as seminal contributions. Therefore, it should not be surprising that Douglas favored a rule based on the extrapolation of past trends in production. For example, in a 1933 pamphlet, entitled *Collapse or Cycle* Douglas stated, " Since the long-time advance in production tends to be somewhere between 3 and 4 percent a year... it follows that the monetary purchasing power in the hands of consumers must normally be increased in approximately that rate " (1933, p. 19).[10]

Turning to Henry Simons, and bearing in mind the views of his Chicago colleagues Knight and Viner, it appears to us questionable that Simons would have become a proponent of a growth rule for the money supply in light of the F & S analysis. He did not have the benefit of longevity that would have afforded him the opportunity to be impressed with the F & S evidence, as Knight and Viner did have while apparently still choosing to adhere to their pre-1963 ideas. But in at least two instances a decade apart, Simons displayed skepticism regarding empirical estimation in general, and the measurement of velocity in particular. In the earlier instance,[11] Simons stated:

> The difficulties of drafting satisfactory rules based on elaborate statistical measures of velocity seems decisive (1936, reprinted in Simons, 1948, p. 331).

In the latter instance [12] Simons argued:

> Empirical evidence as to the secular increase in the demand for money or liquidity (i.e., secular decrease in velocity) is, however, a precarious basis for long-term policy. Trends in such demands cannot confidently be extrapolated from periods of extreme monetary instability and uncertainty into a long future of [proposed] highly stable money value (1946, reprinted in Simons, 1948, p. 340).

[10] For additional references to Douglas's advocacy of a monetary growth-rate rule see TAVLAS (1977 b). It is also noteworthy that one of Douglas's students at Chicago during the late 1930s, Martin Bronfenbrenner likewise evinced an interest in empirical work. Indeed, BRONFENBRENNER and DOUGLAS co-authored a paper (1939) dealing with the statistical estimation of production functions. It is of significance, therefore, that during the early 1960s Bronfenbrenner also espoused a monetary growth-rate rule. But this espousal itself, was based on a series of empirical tests of alternate policy norms — including discretionary policy — which BRONFENBRENNER had devised in two separate papers (1961 a; 1961 b).

[11] " Rules versus Authorities in Monetary Policy " (1936).

[12] " Debt Policy and Banking Policy " (1946).

Had Simons known the facts of the 1930s depression as we now know them, would he have abandoned his espousal of price-level stabilization? It is doubtful that he would have. He might have been convinced that the monetary authorities — and not independent changes in velocity — were to blame for the depression. But in accordance with the methodology of Knight, Viner and Mints (during the 1930s), he would have lacked conviction in the statistical extrapolation of velocity. In turn, the emergence of a monetary rule at Chicago is related to the concurrent emergence of Chicago as a center of monetary empiricism, as the writings of Mints, during the late 1940s, and of Friedman illustrate. Simons did not partake of the empirical orientation that evidently did underlie the Chicago espousal of a monetary rule in the case of each of its exponents.

In short, the foregoing evidence points to the existence at Chicago of a link between empirical orientation and espousal of a monetary growth-rate rule, as well as a concurrent link between non-empiricism and a skeptical view towards a quantitative growth-rate norm. Of no less relevance is the circumstance that the non-Chicago pioneers of the monetary growth-rate rule who have been acknowledged in the recent literature — William Foster and Waddill Catchings, Carl Snyder, Lionel Edie, and Clark Warburton [13] all were empirically inclined. Even more notable is the fact that Foster and Catchings — two non-academic joint authors — not only proposed a (4%) monetary growth-rate rule based on their empirical work but used that policy norm to predict the contraction of 1929. In so doing, Foster and Catchings essentially anticipated the F & S monetary hypothesis of the Great Depression.

[13] For evidence with regard to Foster and Catchings, see TAVLAS (1976). The work of Snyder, Edie, and Warburton is discussed by HUMPHREY (1971). See also CARGILL's recent paper (1979) on Warburton.

III. The Monetary Hypothesis of the Great Depression: The Foster and Catchings Anticipation

As previously noted, in their *Monetary History*, F & S state the prevailing conventional wisdom during the 1930s was that the monetary authorities had done their best to prevent the depression from occurring. F & S do, however, identify several economists who criticized the Federal Reserve Board for failure to mitigate the banking and liquidity crisis of 1930 and 1931, thereby permitting the depression to worsen. Among the economists mentioned in the latter context are quantity theorists James Angell, Irving Fisher, Harold Reed, and James Harvey Rogers (1963, p. 410).

Subsequent to the publication of the F & S volume, several other doctrinal antecedents of the monetary interpretation of the Great Depression have been noted in the literature. Thus, Thomas Humphrey [14] cites the writings of quantity theorist Lauchlin Currie during the mid-1930s and links Currie to the "current Chicago interpretation of American financial history" (1971, p. 14). Friedman (1972),[15] in turn, cites the views of Jacob Viner during the 1930s. In an exchange concerning the relevance of the earlier Chicago quantity-theory tradition,[16] Friedman documents Viner's position that the severity of the depression was caused by the Federal Reserve's inaction. Friedman concludes his presentation of Viner's view as follows:

> Can anyone who knows my work read Viner's comments and not see the direct links between them and Anna Schwartz's and my *Monetary History*? ... Indeed, as I have read Viner's talk for the purposes of this paper, I have been amazed to discover how precisely it foreshadows the main thesis of our *Monetary History* for the depression period and have been embarassed that we made no reference to it in our account (1972, pp. 940-41).

As we have noted, an even more striking — though entirely neglected — anticipation of the monetary hypothesis of the Great Depression is due to Foster and Catchings.[17] The most remarkable

[14] "Role of Non-Chicago Economists in the Evolution of the Quantity-Theory in America: 1930-1950" (1971).
[15] "Comments on the Critics" (1972).
[16] The exchange was with PATINKIN (1972 b).
[17] The monetary doctrines of Foster and Catchings, and their relation to monetarism, are discussed in TAVLAS (1976).

aspect of their depression thesis is that — unlike other antecedents of the monetary hypothesis that were formulated during the 1930s — theirs was written *before* the initial downturn in economic activity had occurred in 1929. In their critique of contemporaneous American monetary policy ("Is the Reserve Board Keeping Faith?" *Atlantic Monthly*, July 1929), Foster and Catchings, propounded the debacle of Federal Reserve policy in the genesis of the Great Depression. In order to convey the significance of the Foster and Catchings thesis of 1929, it is useful to juxtapose to it the F & S interpretation of the depression as set forth in 1963.

F & S distinguish between the initial decline in economic activity of 1929-30 and the subsequent collapse beginning in late 1930. The source of the former was the tight monetary posture adopted by the Federal Reserve System in mid-1928 as a result of its concern with stock-market speculation. When the Fed commenced its policy of restraint, the economy was experiencing stable economic growth. In consequence of the Fed's policy, "The stock of money failed to rise and even fell slightly during most of the cyclical expansion from November, 1927 to August, 1929" (Friedman, 1967, p. 9). The Federal Reserve could have prevented this decline in the money stock had it desired to do so, but was preoccupied, instead, with controlling the qualitative side of credit. The concern with security speculation, in particular, reflected a fundamental shift of power within the Fed. Prior to his death in October, 1928, Benjamin Strong, Governor of the Federal Reserve Bank of New York, had been the dominating force within the Federal Reserve System (1963, pp. 411-14). But following Strong's death, the center of power shifted from New York to the Federal Reserve Board. The latter was preoccupied with controlling the specific uses of credit, and accordingly, was following a policy of monetary restraint. F & S argue that the System's actions directed at the stock-market boom not only failed to stem the boom, but, additionally, exerted a "steady deflationary pressure on the economy" (1963, p. 290). Had Strong remained in office, according to F & S, the Board would not have been preoccupied with stock-market speculation. They conclude, "In our view, the Board should not have made itself as 'arbiter of security speculation or values' and should have paid no direct attention to the stock-market boom" (1963, pp. 290-91).

Consider now the thesis advanced by Foster and Catchings in July, 1929. " During the past two years," they argue, " the Federal Reserve Board has shifted its position so many times... that the whole world of commerce and finance has been kept in a state of nervous apprehension " (1929, p. 93). Foster and Catchings observe that " when the Federal Reserve Board entered upon this vacillating course, economic conditions in the United States were remarkably sound. Real prosperity was high — never higher... prosperity was not illusory, as it always is when accompanied by inflation of commodity prices." (*Ibid.*) During such periods of prosperity " sudden reversals of monetary policy are sure to be injurious. They cut to the heart of commerce and industry." (*Ibid.*)

The particular change in Federal Reserve policy that Foster and Catchings were concerned with, was the Board's request to its member banks during the spring of 1929 that the banks reduce loans on stock-exchange collateral. The Board informed the banks that unless it was satisfied with the extent of their cooperation, the banks would suffer the penalty of being cut off from the resources of the System. Foster and Catchings argue that this was " another complete reversal of policy. From the beginning of the Federal Reserve System, bankers and businessmen generally have understood that the control of the *volume* of credit is a proper function of the Board, but control of the *uses* is not " (original italics) (1929, p. 97).

As previously noted, F & S argue that the reversal in the System's 1928-29 policy was largely due to the death of Benjamin Strong in October 1928. Foster and Catchings implicitly argue likewise. Characterizing their case that the function of the System is to control the volume — and not the uses — of credit, they state:

> This was the position also taken by the late Benjamin Strong, Governor of the Federal Bank of New York; and Governor Strong was the outstanding leader in the whole Federal Reserve System. Indeed, this was the position firmly held by the Federal Reserve Board itself until the past year. It has now executed a right-about-face (1929, p. 98).

Foster and Catchings argue that the stock market boom of 1929 was a reflection of the unprecedented prosperity of the 1920s. In any event, they question how the Reserve can determine whether stock prices are too high. This is a " quantitative " question and such questions " cannot be answered by opinions " (1929, p. 98).

Moreover, " the Board has also reversed its policy in connection with the purchase and sale of securities in the open market " (1929, p. 99). And in accordance with its policy of " controlling the uses of credit " the Board " has reversed its policy regarding bankers' acceptances " and engaged in open-market sales (1929, p. 99). Foster and Catchings infer that " the facts of the present sound situation, however, do not warrant such action " (1929, p. 99). In their view, the Fed is inflicting on " the business world the very evils which the System was designed to prevent " (1929, p. 100).

During the 1920s, Foster and Catchings had expressed their misgivings concerning discretionary changes in the money supply. These misgivings were based on empirical findings and derived from their recognition of the variability of lagged effects of changes in the money stock upon the level of economic activity. Thus, they recommended the use of a monetary growth-rate rule whereby the stock of money would be increased at the rate of 4 percent a year, in accordance with the average rate of increase in output.[18] This recognition of the destabilizing effects of sudden changes in Reserve policy is repeated in their " Is the Reserve Board Keeping Faith? ". If there is any one quotation that conveys the thrust of Foster and Catchings policy critique of Fed complicity in the depression genesis it is the following:

> By lack of consistent policy, by undertaking the new task of controlling the uses of credit, by employing open market operations for that purpose, the Board has kept businessmen in a state of nervous apprehension... Indubitably, the Board has injured business. How severely, nobody can yet tell; for not all of the depressing effects of arbitrary restrictions of credit supply appear promptly. Usually, there is a lag of several months (1929, p. 101).

Foster and Catchings conclude with the warning: " In short, *the Board has created a state of mind which breeds business depression* " (italics supplied) (1929, p. 102).

Foster and Catchings completed their joint work in 1930.[19] In 1932 Foster separately appeared before the U.S. Senate Com-

[18] See TAVLAS (1976).

[19] The case of Foster and Catchings is also relevant because of the association of their monetary economics with the corresponding monetary economics of Chicago of the 1930s. In particular, their monetary doctrines in general, as well as their formulation of a monetary growth-rate rule, greatly influenced Paul Douglas. Indeed, DOUGLAS's generous acknowledgement of their " brilliant and suggestive " writings indicates the derivative nature of his own monetary analysis (1927, p. 38).

mittee on Banking and Currency. During his testimony, he argued that the causes of the depression were "wholly monetary" and again placed the blame for the depression on the Federal Reserve:

> They [consumers] lack the currency and credit [to buy goods] mainly because it has been driven out of circulation. The driving campaign has been deliberately carried out, with the "liquidation" hounds all the while barking at the heels of frightened business. So far as the United States had any public banking policy in 1930 and in 1931, it was a policy of deflation... Those in command piously accepted defeat, convinced apparently that the suffering was good for us, and that, in any event, it was foreordained and nothing could be done about it. They fervently believed in the economics of original sin (1932, p. 63).

Foster's criticism of the policy pursued by the Federal Reserve during 1930 and 1931 foreshadows the F & S argument that the Fed's failure to provide liquidity to the banking system during these years caused the depression to worsen.

IV. Summary and Conclusions

In the vein of the influential interpretation of the Great Depression by Milton Friedman and Anna J. Schwartz, Friedman has subsequently analyzed the monetary economics of Henry C. Simons, a pioneering contributor to the Chicago School. Friedman maintains that if Simons had had before him the evidence marshalled by F & S, Simons would have embraced a monetary growth-rate rule in place of the price-level rule that Simons expressly proposed as a norm for monetary policy.

This paper, while acknowledging the influential role of the F & S interpretation of the Great Depression, takes issue with Friedman's analysis of Simons. Espousal of a monetary growth-rate rule stems from an empirically oriented approach to economic research that Simons explicitly rejected as a reliable basis for the derivation of long-term statistical trends. Simons, as well as several of his contemporaneous Chicago colleagues, did not share the conviction in the soundness of empiricism that Friedman's imputation to Simons logically requires. In contrast, those Chicagoans who did partake of this conviction in empiricism, such as Paul Douglas, Martin Bronfenbrenner, and Milton Friedman, have also been exponents of a monetary growth-rate rule.

Concomitantly with reaffirming Simons's nonconcurrence in a monetary growth-rate rule, we identify William Foster and Waddill Catchings as the original formulators of the monetary interpretation of the Great Depression. Many of the arguments that are contained in F & S's *Monetary History of the United States* had already been anticipated by Foster and Catchings in July 1929 — prior to the initial downturn in economic activity. Foster and Catchings argued that (1) the Federal Reserve was wrongly pursuing a contractionary monetary policy based on an unwarranted concern with stock-market speculation while the economy was fundamentally sound; (2) hence, the Fed had become preoccupied with the uses of credit rather than the proper policy of controlling the volume of money; (3) such a restrictive policy probably would not have followed but for the death of Governor Benjamin Strong in October 1928; and (4) the Fed's actions were threatening to cause an economic depression. In turn, Foster separately criticized the Fed's failure to provide liquidity during 1930 and 1931.

In light of the aforementioned evidence, Foster and Catchings merit recognition as having set forth the initial monetary interpretation of the Great Depression including a monetary growth-rate rule. It has been aptly observed that "Scientifically, the Keynesian failure of the 1970s has resulted in a new openness... increased attention and respect are accorded to the theoretical casualties of the Keynesian Revolution, to the ideas of Keynes's contemporaries and of earlier economists whose thinking has been regarded for years as outmoded." (Lucas and Sargent, 1978, p. 57). The work of Keynes's contemporaries Foster and Catchings is a case in point. Their seminal contribution deserves increased attention and respect — the more so in light of the implicit validation of its essentials at the hands of Friedman and Schwartz a generation later. The fact that Simons did not, while Friedman and Schwartz do, reaffirm a monetary growth-rate rule renders the contribution of Foster and Catchings, as among the initial rule formulators, all the more worthy of the new scientific openness. They were non-Chicago progenitors of what has since become acknowledged as a scientifically important Chicago monetary tradition.

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