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A Reconsideration of the Doctrinal Foundations of Monetary-Policy Rules: Fisher versus Chicago

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There has long been a presumption that the price-level-stabilization frameworks of Irving Fisher and Chicagoans Henry Simons and Lloyd Mints were essentially equivalent. I show that there were subtle, but important, differences in the rationales underlying the policies of Fisher and the Chicagoans. Fisher's framework involved substantial discretion in the setting of the policy instruments; for the Chicagoans the objective of a policy rule was to tie the hands of the authorities in order to reduce discretion and, thus, monetary-policy uncertainty. In contrast to Fisher, the Chicagoans provided assessments of the workings of alternative rules, assessed various criteria -- including simplicity and reduction of political pressures -- in the specification of rules, and concluded that rules would provide superior performance compared with discretion. Each of these characteristics provided a direct link to the rules-based framework of Milton Friedman. Like Friedman's framework, Simons's preferred rule targeted a policy instrument.

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> A free enterprise economy can function only within a legal framework of rules; and no part of that framework is more important than the rules which define the monetary system …. No liberal can contemplate with equanimity the prospect of an economy in which every investment and business venture is largely a speculation in the future actions of the Federal Reserve Board.
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> Henry C. Simons (1935, p. 558)

> [The] products emerging from our professional work reveal a wide range of diffuse uncertainty about the detailed response structure of the economy….A nonactivist [rules-based] regime emerges under the circumstances…as the safest strategy. It does not assure us that economic fluctuations will be avoided. But it will assure us that monetary policy making does not impose additional uncertainties…on the market place.
>
> Karl Brunner (1980, p. 61; quoted from Dorn, 2018, p. 180)

I. INTRODUCTION

In the literature on the development of monetary-policy rules, there has long been a presumption that the rules proposed by Irving Fisher in the 1920s and 1930s and by Chicagoans Henry Simons and Lloyd Mints in the 1930s and 1940s were essentially equivalent (Patinkin, 1973, pp. 332-33; Weber, 1980, p. 673; Fischer, 1990, pp. 1156-61; Humphrey, 1990, p. 7; Laidler, 1999, p. 242; 2010, p. 72; Bordo and Rockoff, 2013, pp. 170-71). The standard narrative runs as follows. Fisher and the two Chicagoans advocated policy rules with the aim of moderating the amplitude of the business cycle. While the business-cycle theories underlying the rules put forward by Fisher and the Chicagoans were fundamentally different -- Fisher, for the most part, attributed the cycle to an unstable money supply whereas Simons and Mints, by-and-large, thought that an unstable velocity of circulation of money was a primary cause of the cycle -- the monetary-policy conclusions derived from the respective theories of Fisher and the Chicagoans were essentially the same -- namely, monetary policy should follow a rule that aims to stabilize the price level and, thus, moderate the business cycle. Laidler (2010, p. 72) expressed the policy-equivalence of the standard narrative as follows: "Simons ... combined the quantity theory [of money] with a rule-based approach to monetary policy similar in many essentials to Fisher's, and with a broader commitment to *laissez-faire*, while mention should also be made of ... Lloyd Mints, who came to share his views."[1] Similarly, Bordo and Rockoff (2013, p. 170) stated: "In advocating a mandate of price stability, Fisher was on the same page as Henry Simons and Lloyd Mints at the University of Chicago."[2] It follows from the standard narrative that, since the objectives of more recent rule-based policy frameworks, including those of Milton Friedman (1960) and John Taylor (1993), have also been to stabilize the price level and output growth, a direct continuity runs from the earlier rules of Fisher, Simons and Mints to modern rules.[3]

The standard narrative presented the following puzzle. In 1933, Chicago economists circulated two memoranda that advocated 100 percent reserve requirements against demand deposits, a policy aimed at allowing the monetary authorities to control the money supply (Knight, *et al.*, 1933; Simons, *et al.*, 1933). Fisher became an enthusiastic supporter of the idea and wrote a book devoted to the proposal, giving credit to Simons and his Chicago colleagues for having earlier advanced the idea (Fisher, 1935a). In the Chicagoans' work on the price-level-stabilization rule, however, Simons did not give credit to Fisher for having earlier advanced that particular rule, while Mints, who did acknowledge Fisher, mis-stated -- according to Patinkin (1973) -- the aim of Fisher's proposal. Patinkin (1973, pp. 332-33) expressed the puzzle in the following terms:

> In the writings [on policy rules] of Simons, I have not found any reference to these views of Fisher. And though Mints (1950, p. 10) did recognize that

[1] Laidler (2010, p. 72) stated that Chicagoan Aaron Director also came to share those views.

[2] In his survey of the literature on rules, Fischer (1990, p. 1163) called a rule that aims to stabilize the price level "the Fisher-Simons rule." Humphrey (1990) drew a connection between the policy rules of Fisher and Mints, but Humphrey did not deal with Simons's policy views.

[3] For expressions of this view, see Asso and Leeson (2012) and Taylor (2017). Dimand (1998, p. 196) argued that there were many parallels between the views of Fisher and those of Friedman, including in the area of "rules rather than monetary policy discretion."

> Fisher was 'in more recent years ... the strongest supporter of stabilizing the price level,' he wrongly implied that this was only because of considerations of distributive justice to creditors and debtors, and not because price stability was 'a necessary condition for the effective operation of a competitive system.' As has just been emphasized, however -- and as Mints himself had earlier recognized (1945, p. 272) -- this was precisely Fisher's view of the matter. In contrast, Fisher (1935, p. ix) did refer to the Chicago School, and particularly Henry C. Simons, as being among the primary advocates of '100 percent money' -- a proposal to which Fisher gave his unequivocal support. In order to avoid any possible misunderstanding, I wish to emphasize that what I find puzzling here is the relation of the Chicago School to Fisher's policy views, as distinct from his theoretical contributions.

Several explanations were subsequently offered to explain the puzzle. Patinkin (1993, p. 33) and Dimand (1998, p. 193) noted that, by the mid-1930s, Fisher had developed a reputation in the profession as something of a crank; he was viewed as being, among other things, a vegetarian and a prohibitionist who had made widely inaccurate predictions about the stock market;[4] consequently, the Chicagoans may have wanted to distance themselves from Fisher. Moreover, Bordo and Rockoff (2013, p. 171) stated -- quite accurately -- that "Simons generally did not waste a lot of ink citing his predecessors." In what follows, I provide another possible explanation for the treatment of Fisher by the Chicagoans.

Specifically, I argue that there were subtle, but important, differences in the rationales underlying the policies put forward by the Chicagoans and by Fisher; therefore, the Chicago economists may not have considered Fisher's policy orientation to be a close progenitor of their monetary-policy framework. Beginning in the early-1920s, Fisher's aim was *not* to limit the discretionary powers of the monetary authorities, but to ensure that the authorities were provided with sufficient powers over the selection and the use of policy instruments to pursue a particular

[4] Shortly before the stock-market crash in October 1929, Fisher (1929) expressed the view that stock prices had "reached what looks like a permanently high plateau." For months after the crash, he continued to assure investors that a recovery was just around the corner. See Barber (1999, pp. 14-15).

outcome -- price-level stability. I provide evidence that shows that Fisher's price-level stabilization framework involved considerable discretion in the use of policy instruments and some ambiguity in the choice of policy objective.

The basis of monetary rules proposed by Simons and Mints was very different. In contrast to Fisher, the words "rules versus authorities" were a central part of their lexicon; and, also in contrast to Fisher, they provided comprehensive assessments of alternative policy rules. Simons and Mints emphasized the role of discretionary policies in generating *monetary-policy* uncertainty -- as opposed to price-level uncertainty -- as the prime mover of the amplitude of the business cycle; a policy rule, they believed, would tie the hands of the monetary authorities and thereby stabilize private-sector expectations, helping to also stabilize the velocity of circulation of money. To Simons, a price-level rule was a second-best rule. His preferred rule under ideal conditions, including a reformulation of the financial sector and 100 percent reserve requirements, was one that fixed the quantity of money -- a policy instrument -- and produced a falling price level and stable output growth;[5] indeed, the latter rule was the initial rule proposed by Simons before he switched to a price-stabilization rule -- but with the caveat that his preferred rule under ideal conditions remained a rule that kept the quantity of money constant. The argument that the main rationale for a policy rule is to reduce monetary-policy uncertainty (by tying the hands of the monetary authorities) provides a direct link to the rules-based frameworks proposed by Friedman and Taylor.

I wish to single out several precedents for the views expressed in this paper. First, the idea that Simons's rationale for rules grew from the conviction that discretionary

[5] See Tavlas (2015).

monetary policy could be a major source of instability was previously noted by Director (1948, p. vii), Friedman (1967), Cagan (1978), and Bordo (2019). Second, in the debate about the relationship between the 1930s Chicago monetary tradition and Friedman's monetary framework,[6] Parkin (1986, p. 357) emphasized the continuity stemming from the Chicago emphasis on rules "running from the 1930s to Friedman and coming all the way up to ... the rational expectations framework developed by Robert Lucas." None of these researchers, however, dealt with the distinction addressed in this paper -- namely, the different underpinnings of the Fisher and the Chicago rules.

II. FISHER ON THE BUSINESS CYCLE AND STABILIZATION POLICY

Fisher's views about the mechanisms generating the business cycle and the policy responses needed to moderate the cycle changed during the course of his career.[7] A common theme underlying his business-cycle theory was the role played by price-level changes in driving the cycle; a common element underlying his policy prescription was the need to maintain price-level stability. In what follows, I focus on Fisher's views on these subjects from the time of the publication of his *The Purchasing Power of Money* (assisted by Harry Gunnison Brown) in 1911 until the mid-1930s.[8] My aim is to demonstrate that Fisher's formulation of a policy rule is only a distant relative of subsequent instrument rules, including those of Friedman

[6] For differing perspectives on that relationship, see Patinkin (1969) and Laidler (1993), both of whom provided skeptical views about the existence of a 1930s Chicago monetary tradition directly related to Friedman's views, and Tavlas (1997, 2019a) and Lothian and Tavlas (2018), who provided evidence supporting such a relationship.

[7] Discussions of Fisher's business-cycle and policy views include Tobin (1987), Dimand (1993), Barber (1998), Laidler (1999), and Bordo and Rockoff (2013).

[8] Dimand (1999a, pp. 49-50) discussed the possible role played by Brown in the making of *The Purchasing Power of Money*. Dimand indicated that Brown's views on the role of the banking system in economic crises may have influenced Fisher's theory of the cycle in that book, but that Brown's precise contribution to the writing of the book is not possible to determine.

and Taylor, the latter two of which aim to ensure that the conduct of monetary policy itself does not impose uncertainty on the economy.[9]

Business-cycle theory

In his *Purchasing Power of Money*, Fisher attributed economic fluctuations to monetary shocks which, he thought, could be generated through gold discoveries, and were transmitted to the real economy through the incomplete pass-through of expected inflation to nominal interest rates. Fisher used the linear approximation connecting the nominal interest rate, i, the real interest rate r, and expected inflation, π, $i=r+\pi$, to show that the behavior of the rate of interest is largely responsible for the cycle.[10] A positive monetary shock, for example, would raise inflation but nominal interest rates would adjust to inflation with a lag so that the real interest rate, $r=i-\pi$, would decline[11]:

> Not only will lenders require, but borrowers can afford to pay higher interest in terms of money; and to some extent competition will gradually force them to do so. Yet, we are so accustomed in our business dealings to consider money as one thing stable, -- to think of a 'dollar as a dollar' regardless of the passage of time, that will reluctantly yield to this process of readjustment, thus rendering it very slow and imperfect. When prices rise at the rate of 3 per cent a year, and the normal rate of interest - i.e. the rate which would exist were prices stationary -- is a 5 per cent, the actual rate, though it ought (in order to make up for the rising prices) to be 8.15 per cent, will not ordinarily reach that figure; but it may reach, say, 6 per cent, and later, 7 per cent. This inadequacy and tardiness of adjustment are fostered, moreover, by law and custom, which arbitrarily tend to keep down the rate of interest (Fisher, 1913a, pp. 57-58).

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[9] As a referee pointed out, Fisher's formulation has more in common with modern targeting rules, such as that of Svensson (2003), that allow the use of judgement and extra model information to formulate precise *objectives* for monetary policy. For a comparison of instrument rules and targeting rules, see McCallum and Nelson (2005).

[10] The linear approximation is derived from the formula $\boxed{1+r=(1+i)/(1+\pi)}$. For low rates of inflation, r is well-approximated by $r=i-\pi$. The formula is exactly correct if i, r, and π are calculated on the basis of continuous compounding. In the steady state, Fisher believed that expected inflation would equal actual inflation. For a discussion of the doctrinal origins of this relationship, see Dimand (1999b).

[11] The idea that the nominal rate is equal to the sum of the real rate and inflation was put forward in Marshall (1887) and developed in Fisher (1896). Fisher subsequently investigated the impact of past price changes on nominal interest rates, the volume of real economic activity, and unemployment using distributed lags, an estimation procedure that he originated. See Dimand (1993).

As a result, profits would rise because "the rate of interest [the businessman] has to pay will not adjust itself immediately" (1911, p. 59). The rise in profits leads to an increase in borrowing from the banks and a rise in deposits, raising prices further and also raising the velocity of circulation of both money and deposits.

Fisher's formal presentation of the business cycle was based on the equation, $MV+M'V'=PQ$, where M is the stock of money, V is the velocity of circulation of money, M' is the level of deposits, V' is the velocity of circulation of deposits, P is the average price of the considerations traded for money, and Q is the physical volume per year of those considerations. In the event of a positive monetary shock, the business-cycle sequence was the following:

1. Prices rise.
2. Velocities of circulation V and V' increase; the [nominal] rate of interest rises but not sufficiently.
3. Profits increase, loans expand, and the *Qs* (i.e., the real volume of trade) increase.
4. Deposit currency (M') expands relatively to money (M).
5. Prices continue to rise; that is, phenomenon No. 1 is repeated. Then No. 2 is repeated, and so on (1911, p. 63).

During the twenty or so years following the publication of *The Purchasing Power of Money*, Fisher made several refinements to the business-cycle theory developed in that book. First, in a 1919 article, "Stabilizing the Dollar," he argued that monetary shocks engender changes in the price level, which, in turn, affect profits through not only the effect of lagged adjustments of interest rates on profits, but also through the effect of lagged adjustment of nominal wages on profits. He attributed labor unrest experienced in the United Sates following World War I to the lagged adjustment of wages to prices. That lagged adjustment, he argued, "relates itself to the whole question of the distribution of wealth and to labor unrest. The disproportion between the level of wages and the soaring price level has ... been responsible for much of the recent labor agitation" (1919, p. 158). Fisher made a similar argument in his 1920 book, *Stabilizing the Dollar*:

> the process is like this: when prices rise, great profits are made because ... the profiteer or stockholder wins without effort from the bondholder and from the employees on salary and wages. His easy profits lead him to 'extend himself' until, when interest changes, rents, salaries, and wages do catch up, his prosperity ceases, he gets caught in debt, becomes bankrupt, and involves others in a chain of bankruptcies (1920, p. 66).

The resulting fall in prices, Fisher argued, causes "social discontent," penalizing the debtor class, especially the farmer (1920, p. 66).[12] Second, Fisher argued that it is not price-level changes *per se* which underlies the cycle, but price-level *uncertainty* -- that is, the failure to perceive the extent of price-level changes and to fully adjust interest rates, wages, and other costs in light of changes in prices. In his 1920 book he wrote: "The chief indictment of our present dollar is that it is uncertain ... Business is always injured by uncertainty ... One of the results of such uncertainty is that price fluctuations cause alternate fluctuations in business; that is, booms and crises, followed by contractions and depressions" (1920, p. 65).

During the Great Depression, Fisher came to a theory of the business cycle very different from the monetary theory described above. This new theory was his debt-deflation theory of depression. A key feature of the theory was that "*new opportunities to invest at big prospective profit* ... such as through new innovations, new industries, development of new resources, opening of new lands or new markets fuel a boom followed by a recession" (1933a, p. 348, italics in original).[13] The new opportunities to invest lead to overconfidence, and overconfidence leads to over-indebtedness. The ensuing downturn, however, need not lead to a major depression.

[12] Fisher was concerned that social unrest could underpin revolutionary forces. A continuation of unstable prices could, he argued, "perpetuate a chief source of social injustice, discontent, violence, and Bolshevism" (1920, p. xxviii).
[13] Tobin (1987, p. 375) called this theory a "Schumpeterian" theory of the business cycle.

For the latter to take place, two factors -- or "diseases" -- have to be in place -- "namely, *over-indebtedness* to start with and *deflation* following soon after" (1933a, p. 341, italics in original). The process underlying severe depression, Fisher argued, worked as follows:

> The two diseases act and react on each other ... deflation caused by the debt reacts on the debt. Each dollar of debt still unpaid becomes a bigger dollar, and if the over-indebtedness with which we started was great enough, the liquidation of debts cannot keep up with the fall of prices which it causes .... Then, *the very effort of individuals to lessen their burden of debts increases it, because of the mass effect of the stampede to liquidate in swelling each dollar owed .... The more debtors pay, the more they owe* (1933a, p. 344, italics in original).

In common with Fisher's monetary theory of the business cycle, changes in the price level were the major force driving the dynamics of the cycle. In contrast to that theory, however, the effect of lagged nominal-interest-rate adjustment on the real interest rate played a subsidiary role in Fisher's debt-deflation theory.[14] Both theories led to the conclusion that to smooth the business cycle, policy should aim to stabilize the price level. As Fisher stated in his exposition of the debt-deflation theory, "If the debt-deflation theory of great depressions is essentially correct, the question of controlling the price level assumes a new importance; and those in the drivers' seats -- the Federal Reserve Board and the Secretary of the Treasury will in the future be held to a new accountability" (1933a, p. 347).

Price-level stabilization

In order to stabilize the price level, in his *Purchasing Power of Money* (1911, Chapter XIII) Fisher introduced the idea of a "compensated dollar," an idea that would remain part of his stabilization proposals, though with diminishing emphasis,

[14] In his 1933 article, "The Debt-deflation Theory of Great Depression," Fisher relegated his discussion of the role of the lag between real and nominal interest rates to a footnote (1933a, p. 350, footnote 4).

for the next twenty-five years.[15] Importantly, Fisher thought that the proposal would be compatible with the gold standard. Although the specifications of the proposal changed over time, the basic plan was as follows. Fisher proposed that the monetary base consist of "gold bullion certificates." These certificates would entitle the holder, on any date, to convert dollars into gold bullion "of such a weight as may be declared to constitute a dollar for that date" (1920, p. 104). Specifically, the certificates would be convertible into a varying amount of gold linked to a general index of prices. Whenever the price level, for example, exceeded that of an "established" index comprised of commodities in a certain period, the price of gold would be lowered by the same percentage in the next period (1920, pp. 105).[16] In his 1920 book, *Stabilizing the Dollar*, Fisher termed this procedure for adjusting the weight of gold bullion an "*adjustment rule*" (1920, p. 105, italics in original).[17]

To explain, assume (as did Fisher) that the amount of gold in a dollar was adjusted every two months. If the price level were, say, one percent above the "ideal composite" index in a certain period, Fisher assumed that the monetary authority would increase the amount of gold in a dollar by one percent in two months, which is the same thing as saying that the dollar had appreciated by one percent relative to gold. If the price level failed to adjust sufficiently, the monetary authority would increase the amount of gold in a dollar in the following two-month period.[18] Fisher

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[15] In the second edition of *The Purchasing Power of Money,* published in 1913, Fisher added an appendix on "Standardizing the Dollar," which spelled-out his plan in more detail than did the first edition.

[16] Index numbers on prices were published in the United States beginning in 1890. See Patinkin (1993, p. 17).

[17] To my knowledge of Fisher's works, this was one of the only two occasions in which the use of the word "rule" entered his lexicon during the period from 1911 until the early-1930s. The other occasion was in 1913: "many people would not object to this limitation which permits prices to fall below the present level, but does not permit them to rise further. Yet it is a poor rule that will not work both ways" (Fisher, 1913b, p. 25).

[18] In an Appendix titled "Technical Details" to *Stabilizing the Dollar*, Fisher (1920, p. 213) stated: 'The Federal Reserve Board could assist in the prompt and efficient operation of the new system by having

noted that the attainment of price-level stability -- or as he called that objective, a stable dollar -- would not "banish all complaint in the financial, business, and industrial world, much less serve as a substitute for progressive economies" (1920, p. 110). He added, however, that:

> It is no exaggeration to say that stabilizing the dollar would directly and indirectly accomplish more social justice and go farther in the solution of our industrial, commercial, and financial problems than almost any other reform proposed in the world to-day; and this it would do without the exertion of any repressive police force, but as simply and silently as setting our watches (1920, pp. 111-12).[19]

Three points about Fisher's compensated dollar plan, in particular, and his overall price-level stabilization scheme, more generally, merit comment. First, as mentioned, Fisher continued to favor the plan, though not as a stand-alone policy, at least until the mid-1930s (1934, p. 396). I return to this issue below. Second, while from 1911 to the publication of *Stabilizing the Dollar* in 1920 Fisher viewed his compensated dollar as an automatic mechanism -- recall, he had referred to it as an "adjustment rule" -- in the early-1920s he began to associate the compensated dollar with discretion in the use of instruments. In Congressional testimony on December 18, 1922, in support of the first Goldsborough Bill -- which aimed to mandate the Federal Reserve to stabilize the price level under the compensated-dollar plan -- he indicated that the plan would leave room for considerable discretion on the part of the authorities:

> So it is just like steering a bicycle or an automobile. If it deviates a little you turn the wheel slightly and if that is not enough you turn it some more, or if you turn too much you turn it back, and keep the automobile in pretty nearly a straight line. Nobody can steer a machine with absolute straightness; but it

due regard to the rise and fall of the Index Number … [by] its adjustment of the rate of discount and its general loan policy to be such as to keep the volume of individual deposits subject to check approximately proportional both to bank reserves and to Government gold reserve against gold billion dollar certificates."

[19] Throughout his career, Fisher placed emphasis on the effects of a changing price level on distributive justice.

> is amazing how straight you can steer it if you only touch the wheel a little here and there; and that is exactly what we mean by ... trial and error every two months (Fisher, 1922, p. 25).

Following the Federal Reserve's success in using open-market operations in stabilizing the price level in the first half of the 1920s, those operations -- along with the changes in the gold content of the dollar under the compensated-dollar plan, rediscounting operations and (in the 1930s) changes in reserve requirements -- comprised important, though not exclusive, parts of Fisher's policy arsenal for pursuing price-level stability.[20] He made numerous appearances throughout the 1920s and 1930s before Congressional committees at which he argued that the Federal Reserve should be mandated to pursue price-level stability. In his testimony before the Committee on Banking and Currency of the House of Representatives in 1926, Fisher stated: "You have got to have your gold control [through the compensated dollar] as well as your credit control [through open-market operations and rediscounting], if you are going to prevent the terrible evils of inflation and deflation in the future" (quoted from Barber, 1998, p. 33).

For both "gold control" and "credit control," Fisher believed that the authorities should be given discretionary powers. The use of discretion in Fisher's "gold control" policy was evident in his 1926 testimony before the House Committee on Banking and Currency. According to Barber (1998, p. 33, italics supplied), in that testimony "[Fisher] held that the Federal Reserve's stabilizing role might be compromised unless *discretionary authority* to alter the gold content of the dollar were available." The notion that the Federal Reserve should be given the power to alter the gold content of the dollar remained an essential part of Fisher's policy platform into the

[20] When Fisher first proposed his compensated dollar plan in 1911, the Fed had not yet come into existence. Therefore, policies such as open-market operations and rediscounting operations were not available.

1930s (1932, p. 216; 1934, p. 396). On at least one occasion, he had added an additional discretionary element to the power that should be entrusted to the authorities: "I would ... remove the present restrictive limits on the gold content of the dollar ... so as to avoid someday finding no further adjustments permissible under the law. Also I would keep redemption in gold *discretionary* on the part of the government" (1934, p. 396, italics supplied). Regarding "credit control," in his 1928 book, *The Money Illusion*, Fisher stated:

> When my *Stabilizing the Dollar* [1920] was written, I relegated credit control to the Appendix.... My aim was to make the whole plan of stabilization -- both gold control and credit control -- as "automatic," that is as free from discretion as possible.... Since that time, however, *discretionary* credit control has actually come into existence. This, when duly perfected and duly safeguarded, will greatly simplify and improve the technique of stabilization and will make gold control secondary to credit control (1928, pp. 192-93, italics supplied).

Similarly, in his 1935 book *100% Money*, Fisher wrote the following about what he called "entrusting" the authorities with conducting open-market operations.

> ... we have long ceased to have any 'automatic' system. Our system is already full of discretion. ... The question now is not at all whether we shall have an automatic (unmanaged) or a discretionary (managed) currency. The question is whether we prefer the present irresponsible management or a responsible management with the definite objective of stabilization (1935a, pp. 195-96).

The third point meriting comment about Fisher's price-level framework is that on several occasions during the early-1930s Fisher argued that price-level stabilization need not be the only objective assigned to the monetary authorities. In this connection, he expressed the view that: "The Federal Reserve System might well exercise such diverse functions as the care of the commodity price level *and* the care of the stock market price level" (1932, p. 133, italics supplied; see, also 1933c, p. 105). In the case that two such objectives were assigned to the monetary authorities, Fisher did not elaborate on the weights to be given to the two objectives nor to whether the weights would be pre-assigned by an institutional body, such as the U.S.

Congress, or would be set by the individuals in charge of monetary policy.

Fisher's emphasis on a wide range of discretionary policy instruments and the possibility of using those instruments to achieve up to two objectives deprived the framework of the simplicity and the clarity that marked the rules-based framework developed by Simons and Mints (as discussed below). Reeve (1943, p. 165) reported that: "In his voluminous testimony before the House hearings on this [Goldsborough Bill of 1932], he [Fisher] suggested more than twenty other methods [apart from open-market operations] of increasing the volume or velocity of the circulating medium, all of which he believed had some merit." These methods would be assigned to a monetary authority with the power to use them at the authority's discretion. In both, his 1933 book, *Booms and Depressions*, and his 1934 book, *Stable Money*, Fisher again presented more than twenty measures for increasing the price level -- what Fisher called "reflation" -- and then stabilizing the price level.[21] In addition to the measures mentioned above, other measures included such proposals as a stamped-money scheme,[22] President Roosevelt's 1933 policy of raising the price of gold in an *ad hoc* -- sometimes daily -- manner (while keeping the United States on the gold standard)[23], the use of the profits from the higher price of gold to issue a supplemental

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[21] Fisher's aim in raising the price level during the Great Depression was to bring wholesale prices back to their 1926 level.
[22] Stamped money was a scheme to stimulate the velocity of money by providing what effectively was an interest-free loan to all citizens. Under the scheme a specially-issued money, say $100, would be provided to all citizens (or a subset of citizens). In order to spend the money, individuals would have to buy, say, a $1 stamp and affix it to the money at, for example, monthly intervals. At the end of 100 months, the entire principal of what was effectively an interest-free loan would have been repaid. Fisher wrote a book (1933b) on the stamped-money idea. The stamped-money idea was originated by Silvio Gesell, a German businessman, in the late-19th century. See Fisher (1934, pp. 43-44) and Keynes (1936, Chapter 23).
[23] Fisher (1933c, p. 136) expressed his unabashed support for Roosevelt's discretionary changes in the price of the dollar as follows: "the words given out by the President, under his discretionary control of the currency, constitute thus far the climax to the most basic reform movement in economic history." Fisher's book, *Stable Money* (1934), was dedicated to Roosevelt. See, also, Section 3.5 below. The policy of changing the exchange rate of the dollar had the effect of providing the monetary authorities with greater scope to pursue domestic policy objectives, which was Fisher's aim.

currency designated as "yellowbacks" (to distinguish them from greenbacks), the rationing of credit, the assumption of overdue private debts (on a permanent basis) by government agencies in order "to forestall credit deflation" (1933c, p.106), and the provision by the Reconstruction Finance Corporation of interest-free loans to private enterprises that agreed to enlarge their payrolls.[24]

In proposing that the above-mentioned powers be assigned to the monetary authorities, Fisher was effectively entrusting the authorities to use those powers to stabilize the commodity price level and, possibly, the stock market price level. He was *not* aiming to tie the hands of the authorities in setting the policy instruments. With regard to the mandate that he proposed be assigned to the authorities to change the price of gold at their discretion, Fisher, stated: "But if and when the retention of a constant price of gold and the maintenance of a fairly constant level of prices are found to be incompatible, a change can and should be made. The authorities *can be trusted* not to make it any sooner than need be" (1932, p. 216, italics supplied).

Discussion

Fisher's policy framework was comprised of diverse, time-varying tools, which typically provided further (in addition to open-market operations, rediscounting operations, and changes in reserve requirements) discretionary powers to the monetary authorities -- for example, the determination of the gold content of the currency under the compensated-dollar scheme and the responsibility to decide whether, for domestic economic agents, the currency would be redeemable into gold. Some of Fisher's proposals were decidedly oddball, such as the stamped-money

[24] The specifics of Fisher's policy proposals underwent variations over time. See Barber (1998, p. 68).

proposal. The proposal that the Fed target stock prices in addition to commodity prices introduced additional ambiguity into his framework. All of the policy tools, Fisher believed, would operate alongside the international regime of the gold standard. Recent writers on the doctrinal foundations of monetary rules have singled-out the price-stabilization component of Fisher's framework, while overlooking the fact that Fisher had not formulated a simple, easy-to-understand and coherent framework for monetary policy. Moreover, in contrast to the frameworks of subsequent advocates of rules, including Friedman and Taylor, Fisher's framework did not explicitly aim to reduce monetary-policy uncertainty.

III. THE VIEW FROM THE MIDWAY

Douglas and Director

The advocacy of monetary rules at Chicago originated with the work of Paul Douglas, who produced a series of studies on monetary issues during the years 1927-35.[25] To study the role of money on the economy, Douglas combined the quantity theory with a transmission mechanism that drew on underconsumptionist mechanics (Laidler, 1999, pp. 225-28; Tavlas, 2019a). The important point here is that throughout this period Douglas ascribed depressions to the failure of the money supply to increase as rapidly as the annual trend rise in the production of goods, which he estimated to be between 3 to 4 percent a year. This circumstance would result in a fall in the general price level and, with the structure of prices having embedded within it relatively higher costs (mainly wages) that had been paid out previously, profit margins would shrink and output would, therefore, contract. To prevent depressions, Douglas (1927, p. 40) put forward the following money-supply growth-rate rule: "the

[25] Detailed discussions of Douglas's monetary views are provided in Tavlas (1997; 2019a).

primary need is for stability in the price level ... and this can be secured by a general and proportionate increase of monetary purchasing power," by which he meant currency and demand deposits.

During the course of 1930, Douglas and Aaron Director jointly worked on the book, *The Problem of Unemployment,* published in early-1931.[26] This study is, in part, a wide-ranging survey of then-existing theories of the business cycle as well as policies proposed to ameliorate the cycle. Among the policies critiqued by Douglas and Director was Fisher's compensated dollar. In critiquing Fisher's writings on the compensated dollar, Douglas and Director (1931, p. 231, footnote 4) confined their coverage of Fisher's work to the period "from 1911 to 1920" -- that is, from Fisher's *The Purchasing Power of Money* to his *Stabilizing the Dollar* -- a period during which Fisher's policy framework was largely automatic.

Douglas and Director had two major criticisms of Fisher's scheme. First, they argued that Fisher unrealistically assumed that a change in currency, or M, would result in a proportionate change in demand deposits or credit (M'): "Professor Fisher's plan rests somewhat too heavily upon the assumption that an alteration in the relative amount of money will affect a proportionate alteration in the amount of bank credit" (1931, p. 233).[27] Second, the proposal was, in their view, incompatible with the gold standard. For example, if prices "began to fall over the world and were only maintained in this country by lessening the gold content of the dollar, which, however, was still kept at its former ratio with other currencies in foreign exchange, then it would follow that gold would have a greater value abroad than here" (1931, p. 233-34). This circumstance would lead to "speculative selling of American money

[26] Director began teaching at Chicago in the fall of 1930, having been brought there by Douglas.
[27] Douglas and Director (1931, p. 233) did not believe that this assumption would cause a serious problem "if the United States were a closed economy."

into foreign currencies" (1931, p. 234).[28] Douglas and Director found one positive aspect of the compensated dollar: "Professor Fisher's proposal has the merit of being automatic and not depending on the discretion of government or banking officials" (1931, p. 235). The authors put forward the following policy rule: "If the supply of money and credit were to increase commensurately with the increase in production, the price level would be held constant and the goods produced would be sold at prices which permit industry to go on with undiminished profits and without curtailment of activity" (1931, p. 183).

The 1933 memoranda

During the course of 1932 and 1933, members of the University of Chicago economics department drafted and circulated (to other academics and to Washington policy makers) a series of memoranda that contained policy proposals to combat the Great Depression and to stabilize the economy in the longer term.[29] Two of these memoranda are relevant in the context of the development of monetary rules: (1) an untitled, five-page April 1933 memorandum that presented, among other things, the Chicago Plan of Banking Reform, the main element of which was a proposal to back demand deposits with 100 percent reserve requirements; [30] and (2) a November 1933 memorandum entitled "Banking and Currency Reform", the aims of which were (i) to elaborate on the 100 percent reserve proposal of the earlier

[28] Patinkin (1993) provided a detailed discussion of the compensated-dollar proposal and pointed to the same flaw introduced by Fisher's attempt to disguise his plan for a price-level target as a form of the gold standard: if the dollar was to be convertible at a fixed dollar price of gold that would be adjusted every two months in accord with changes in a specified price index, speculators could, without risk, profit at the expense of the monetary authority.
[29] For a discussion of the contents of these memoranda, see Tavlas (2019a).
[30] The memorandum in question was originally circulated on March 15, 1933. It subsequently underwent two revisions. The first revision was circulated on March 16, 1933; it was published as an appendix in Phillips (1995). The second revision was made and circulated by Simons in April 1933. See Phillips (1995, p. 52) and Tavlas (2019a).

memorandum, (ii) present the Chicagoans' business-cycle theory, and (iii) provide a comparison of alternative monetary-policy rules. The April memorandum was signed by Frank Knight (lead author), Garfield Cox, Aaron Director, Paul Douglas, Albert Hart, Lloyd Mints, Henry Schultz, and Henry Simons. It was circulated to about forty individuals, including Henry Wallace, who was Secretary of Agriculture, and who forwarded it to President Roosevelt with a positive appraisal of its contents.[31] That memorandum referred, without elaboration, to the need of a monetary-policy rule for purposes of long-term currency management:

> We feel that any body like the [Federal] Reserve Board should be only entrusted with a largely technical and strictly administrative function of applying some explicit rule of currency-management -- the rule being chosen by Congress and incorporated in legislation under circumstances designed to minimize the possibility of frequent or drastic change (Knight *et al.*, 1933).

The November memorandum, was 14 ½ pages in length; it also included a 5 ½-page Appendix, "Banking and Business Cycles," and a 7-page Supplementary Memorandum, "Long-time Objectives of Monetary Management."[32] The November memorandum was unsigned; it was primarily drafted by Simons with substantial input from Director, based on discussions held at regular departmental meetings and social gatherings among the Chicagoans.[33] More than half of the main text and the entire Supplementary Memorandum were devoted to the merits of alternative monetary-policy rules. Both the length and depth of the discussion of alternative monetary-policy rules were unprecedented. Nothing *approaching* the analysis of

[31] See Phillips (1995, p. 49). Wallace served as Secretary of Agriculture from 1933 to 1940. In a 1920 book, *Agricultural Prices,* he argued that statistical economists and production engineers should replace speculative traders and financiers in determining prices. Under his leadership, the Department of Agriculture was at the center of many proposals for economic reform in the 1930s.

[32] The November 1933 memorandum (including the supplementary memorandum) was published in 1994, in Archival Supplement 4 to *Research in the History of Economic Thought and Methodology*.

[33] In a letter, dated October 2, 1934, to Douglas, Simons wrote: "Actually I did write the thing alone; but it would never have been written except for my conversations with other people, Mr. Director especially; and it never would have been circulated without favorable critical reports from yourself and other members of the [Chicago] group" (Simons 1934c). The November memorandum underwent wider circulation than the March memorandum.

alternative rules provided in the November memorandum had appeared previously in the economics literature. For this reason, the November memorandum can be considered to have marked the genesis of the subsequent debate in the literature -- carrying over to the present -- on the merits of rules versus discretion in monetary policy.[34]

Simons

The theoretical framework underlying the policy proposals in the November memorandum was provided in the Appendix on "Banking and Business Cycles." Simons *et al.* attributed the cause of the business cycle to changes in the velocity of circulation of money, which, in turn, were caused by changes in expectations about prices. For example, expectations that prices will increase in the future will, with wages assumed to be "sticky," trigger expectations that business earnings will rise; but, "this change in expected earnings, in turn, means a larger volume of business and [still] higher product-prices, and thus still larger earnings. The further increase of earnings, moreover, will induce further increases in the velocity of money" (Simons, *et al.*, 1933, Appendix, p. 2). The foregoing process is highly exacerbated by the perverse behavior of a fractional-reserve banking system, which expands lending -- that is, creates demand deposits (M' in Fisher's equation of exchange) in booms and contracts lending in depressions. Consequently, to moderate the business cycle,

[34] The November memorandum has been well-cited in the literature -- for example, in Friedman (1967), Patinkin (1969), Phillips (1995), and Laidler (1999). Earlier discussions about rules versus discretion took place in the 19th century, especially in England during the debates surrounding the Bank Charter Act of 1844, which envisioned the Issue Department of the Bank of England automatically adjusting note issue to changes in specie reserves. For discussions, see Laidler (2002) and Glasner (2017). The point made in this paper is that the detailed discussions in the November 1933 memorandum of the benefits and costs of alternative rules and the criteria to be used in evaluating and selecting rules were such that the memorandum can be considered to have marked the beginning of the subsequent debate on rules versus discretion.

policy should aim to stabilize expectations. In contrast to Fisher, however, stabilizing expectations did not necessarily mean that policy should aim to stabilize the price level.

Simons *et al.* considered "the relative merits of [six] different possible rules" (1933, p. 7): (1) a fixed quantity of money; (2) a fixed quantity of money per capita (assuming that population and output would rise in the future); (3) a uniform rate of increase in the quantity of money; (4) a stable price level; (5) a moderately declining price level; and (6) the gold standard. Rule (3), the money-growth rule, and rule (4), the stable price rule, were considered equivalent since the rate of increase in money under the money-growth rule aimed to produce a stable long-term price level. Rule (1), a fixed quantity of money, and rule (5) a moderately declining price level were also considered equivalent since a fixed quantity of money would produce a falling price level under the expectation that population and output would rise in the future. Whatever monetary rule was chosen, it would be need to be embedded in legislation. The aim of the rule would be to tie the hands of the monetary authority: "the Federal Reserve Board [would be constituted] as a strictly administrative body, charged with carrying out the prescribed rule, but vested, with no broad discretionary power as regards fundamental policy" (Simons *et al.*, 1933, p. 5).

The authors evaluated the gold standard as a rule in the main body of the text. Simons *et al.* argued that the gold standard "appears to be incompatible with adherence to any rule or principle" with reference to money (1933, pp. 10-11). In particular, the gold standard, the authors stated, lacks the certainty needed to underpin a monetary rule. If a country has large gold reserves, "the monetary authority is left with excessive freedom for arbitrary, discretionary action, since wide changes in the gold stock might be permitted without effort to neutralize the movements" (1933, p. 9). Conversely, a country with a small gold stock "would be exposed to disturbance from every change in currency and credit conditions abroad" (1933, p. 9). The authors' overall judgement of the gold standard as a rule was as follows: "the gold standard has always been a fair-weather system .... It can hardly survive a serious war anywhere; and most countries discard it readily under pressure, whether of war or depression" (1933, p. 10).

With regard to the remaining five rules, Simons *et al.* stated that what is important is not "the choice among, particular, alternative rules", but "the establishment of some precise" rule because, compared with a discretionary regime, a rules-based regime would reduce uncertainty (1933, p. 8). The preferred rule was the fixed quantity-of-money rule -- that is, rule (1); it was seen as having several advantages compared to the other rules. First, to the extent that changes in the quantity of money are generated by the government's fiscal position -- and the Chicagoans preferred that changes in the money supply be generated through changes in the government's fiscal stance -- a rule that fixes the quantity of money would be compatible with, and contribute to, a balanced budget (1933, Supplement, pp. 4-5). Second, since fixing the quantity of money would contribute to a balanced budget, it would reduce the "danger" of political interference in monetary policy (1933, Supplement, pp. 5-7). Third, the rule has the attribute of being simple and definite so that it would be able to stabilize expectations (1933, Supplement pp. 2-3). Under the conditions of rising output and population, "prices would fall, to be sure, but only at an average rate of, perhaps, three percent per annum." Such a rate of decline would be unimportant "for ordinary business operation" and would come to be expected. Therefore, it would not affect relations between debtors and creditors: "satisfactory relations between debtors and creditors depend mainly upon the establishment and maintenance of substantial certainty with respect to monetary conditions." What is important is that "anticipations of both parties shall be approximately realized ... If there is certainty of declining prices, or an unchanging quantity of money, the prevailing rates of interest will be lower than they would be if a stable price level were assured" (1933, Supplement, p. 6).[35] Under the assumption of sticky wages, a falling price level, with the rate of decline the same in absolute value at the rate of productivity growth, would mean that inflexibility of wages would be consistent with real wages being at their 'right' level -- instead of nominal wage inflexibility being a source of friction. Finally, while a rule that stabilizes the quantity of money would not accommodate counter-cyclical monetary policy, cyclical changes in velocity, "are unlikely to be of a serious magnitude" in light of the increased certainty provided under the rule (1933, Supplement, p. 3).

Simons *et al.* raised several problems with a rule that aims to stabilize the price level. First, since the money supply would grow secularly under such a rule, the rule "implies continuous unbalancing of the federal budget, a practice that threatens abuse" (1933, Supplement, p. 7). Second, and related to the former point, the continuous "injection of new money" would render the rule susceptible to "political pressure for more rapid injection" of money (1933, Supplement, p. 2). Third, a price level rule "is sadly lacking in definiteness ... Thus it leaves too much room for administrative discretion" (1933, Supplement, p. 7).

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[35] I conjecture that the foregoing argumentation is attributable to Director. At the University of Chicago's June/July 1931 Harris Foundation conference on *Unemployment as a World Problem*, Director intervened during a June 24 session in which Alvin Hansen presented the paper, "Business Cycles, Price Levels, and Unemployment," as follows: "if the secular changes [in prices] were at a constant rate, it seems to me that once the adjustment is made to, say a three per cent fall in the price of finished goods ... once that adjustment was made you could go on indefinitely with a falling price at that per cent ... the adjustment continually being made without any difficulty at all" (Harris Foundation, 1931, Vol. 1, pp. 77).

Simons's next substantive endeavor into the rules-versus-discretion issue was his 1934 pamphlet, *A Positive Program for Laissez Faire*. The arguments for rules and against discretion -- were the same as those contained in the November 1933 memorandum, often using the identical wording as that contained in that memorandum. There was, however, one notable, if subtle, change. After stating that "the adoption of one among the several definite and unambiguous rules is more important than the choice among them" (1934b, p. 63), Simons did not take a position with respect to which particular rule might be preferable. Evidently, his view on that matter was in a state of transition, as evidenced by his next publication on rules.

That publication was "Rules versus Authorities in Monetary Policy," which appeared in 1936. In that paper, he argued that a main rationale for a rule should be to reduce *monetary-policy* uncertainty:

> An enterprise system cannot function effectively in the face of extreme uncertainty as to the action of the monetary authorities or, for that matter, as to monetary legislation. We must avoid a situation where every business venture becomes largely a speculation on the future of monetary policy (1936a, p. 161).

Then, in what appears to have been an anticipation of the Lucas critique, Simons expressed the view that it would not be possible to assess the merits of monetary rules in an economy that has not previously operated on the basis of rules. The adoption of rules in such an economy would effectively amount to a regime change:

> Generally speaking, it is very difficult to judge the merits of any precise rule of monetary policy on the basis of experience in an economy where no such rule has obtained and where economic behavior has been profoundly influenced by extreme monetary uncertainty. The primary objective of reform should be that of minimizing this kind of uncertainty for the future. From the point of ultimate operation, it seems likely that many different rules would serve about equally well (1936a, pp. 129-30, footnote 12).

Simons made it clear that a rule should ideally tie the hands of the authorities -- not only by setting an objective for monetary policy -- but also by applying the rule to an instrument of policy; otherwise, the authorities would be given too much discretion in policy implementation. Thus, in his assessment of price-level stabilization rules, Simons argued that such rules "define programs in terms of ends, with little discussion of appropriate means; they call for an authority with a considerable range of discretionary action and would require much intelligence and judgement in their administration" (1936a, p. 169). A rule that fixes the quantity of money would both bind the authorities to a policy instrument -- the money stock -- and deliver an objective -- economic stability. Such a rule, Simons argued, had several other advantages: (i) it "defines policy in terms of means [*i.e.,* the policy instrument] not merely in terms of ends"; (ii) it "is ideally simple and definite"; (iii) "it is clear enough and reasonable" so as to be easily understood; and (iv) because the money stock would be tied to the government's fiscal position, "it is compatible with the rule of balancing government revenues and expenditures" (1936a, pp. 163-64).

Despite these advantages of a rule that fixes the quantity of money, by 1936 Simons had begun to favor a rule that stabilized the price level. As he explained, due to the inherent instability of velocity under a financial system dominated by short-term debt instruments, the "limitations [of the fixed quantity rule] have to do mainly with the unfortunate character of our financial structure -- with the abundance of what I may call 'near moneys' -- *with the difficulty of defining money* in such a manner as to give practical significance to the conception of quantity" (1936a, p. 171, italics supplied). Thus, "the obvious weakness of a fixed quantity lies in the danger of sharp changes on the velocity side. The fixing of the quantity of circulating media might merely serve to increase the perverse variability in the amounts of 'near moneys' and in the degree of their general acceptability, just as the restrictions on the issuance of bank notes presumably served to hasten the development of deposit [checking account] banking" (1936a, p. 164). Nevertheless, once the necessary reforms to the financial system were in place to make the system more resilient against changes in velocity,[36] Simons believed that a "a rule calling for outright fixing of the total quantity of money...definitely merits consideration as a preferable solution" (1936a, p. 183).

Simons continued to favor a rule that stabilizes the price level throughout the remainder of his career because of his belief that a rule would minimize monetary uncertainty (1942, p. 281; 1945, p. 281). Moreover, the view that a monetary rule would minimize monetary uncertainty was a main reason that Simons rejected the policy message of the Keynesian revolution. In a 1936 review of *The General Theory* in the periodical, *The Christian Century*, Simons criticized Keynes as follows:

> Mr. Keynes nowhere suggests the need for economy in the kinds of governmental interference; and he seems to disregard, or grossly to underestimate, the possibilities of controlling all the variables which his analysis emphasizes merely by controlling the quantity of money...in terms of deliberate monetary policy. He overlooks the need (clearly suggested by his own analysis) for the minimizing of monetary uncertainties and the achievement of a monetary system based on definite and stable rules. Thus, while expressing decided preference for an economic system of free enterprise, he does not seriously consider what monetary arrangements or what implementations of monetary policy are most and least compatible with that system (1936b, p. 1017).

Mints

Simons died in 1946. Until the time of his death, he had been the *only* American economist to provide comprehensive assessments of alternative monetary rules and to single-out the role of rules in stabilizing expectations about monetary policy.[37] With

[36] Simons believed that the reforms would include the conversion of all public debt into currency and consols, anti-monopolistic measures to increase price and wage flexibility, and 100 percent reserve requirements against demand deposits.

[37] To be sure, other economists had advocated rules prior to Simons. For example, during the 1920s and 1930s Carl Snyder and, as discussed above, Douglas and Director proposed money-supply growth-rate rules to stabilize the business cycle. These economists, however, did not provide assessments of alternative rules nor did they deal with the issue of stabilizing expectations about monetary policy. On Snyder, see Humphrey (1971) and Tavlas (1982). In the early-1950s, Clark Warburton (1953) provided

the passing away of Simons, the mantle for assessing alternative rules and propagating the superiority of rules over discretion in stabilizing monetary expectations was picked-up by his Chicago colleague, Lloyd Mints.

Mints taught at the University of Chicago from 1919 until his retirement in 1953.[38] During the period 1919 to 1930, Mints published three articles, each in the *Journal of Political Economy*. Two of the articles (1923a; 1923b) were in the area of financial organization. A third article, "The Elasticity of Bank Notes," published in 1930, brought him into the realm of monetary policy. Apart from occasional book reviews, Mints did not publish *anything* from 1931 to 1945, the year in which his book, *A History of Banking Theory*, appeared. Following the publication of that book, he published several articles and a second book, *Monetary Policy for a Competitive Society* (1950). Mints taught the graduate course on money and banking at Chicago until his retirement.

Mints's business-cycle theory was essentially the same as that of Simons. Once a shock hits the economy, changes in expectations about prices, along with sticky costs, trigger expectations that business earnings will change in the same direction, producing changes in the velocity of circulation. In contrast to Simons, however, Mints believed that shocks to the quantity of money, as well as velocity shocks, could trigger the business cycle (1951, p. 189). Mints was also less concerned than was Simons about the role of a fractional-reserve banking system in exacerbating the cycle; he believed that the creation of deposit insurance in 1934 had sharply curtailed the possibility of bank panics (1950, pp. 6-7).

assessments of alternative monetary rules, but these assessments were in reaction to the respective rules proposed by Simons, Mints, and Friedman in the 1940s. See Tavlas (2019b).

[38] I provide more background information on Mints's writings than I did for Simons since Mints is a less-well-known scholar. Dellas and Tavlas (2019) provide a detailed discussion of Mints's work on monetary economics.

In a 1946 paper, "Monetary Policy," Mints provided an assessment of the following rules: (i) a constant level of the money supply; (ii) a constant growth rate of the money supply "roughly equivalent to the rate of increase in output;" and (iii) the stabilization of a price index (1946, pp. 60-61). Like Simons, he thought that any number of rules "would be about equally acceptable" (1946, p. 60); he opted for the rule that stabilizes the price level because of the familiarity of economic agents with a price index, its simplicity, its definiteness, and its requirement that changes in velocity should be offset (1946, p. 60). What was important to Mints was that a rule would provide an anchor for expectations so that expectations would help stabilize -- rather than destabilize -- the business cycle:

> If we had a definite, announced monetary policy, based upon legislation and firmly accepted, and if Congress provided ample means of implementation, there would be no reason why aggregate demand should continue to decline after an initial disturbance. On the contrary, aggregate demand could be quickly restored by monetary-fiscal measures, if not by mere expectations of such measures, and thus nothing more than a minor recession in business activity need ever arise (1946, p. 60).[39]

Mints's 1950 book devoted two chapters (Chapter 6 and 7), amounting to 58 pages, to an evaluation of alternative rules; several other chapters also contained lengthy discussions of rules.[40] The central argument in the book was Mints's view that economic stability requires monetary stability:

> One of the prime requisites for the automatic and effective functioning of a competitive system is monetary stability. A deliberately provided, definite, and known monetary policy is a unique and indispensable means of reducing to a minimum variations in the expectations of the public. It is as much an essential part of the framework of an enterprise economy as is competition or the law of contracts (1950, p. 9).

In a departure from Simons's view, in the late-1930s Mints argued that a rules-based

[39] Like Simons, Mints believed that changes in the money supply should mainly be generated through changes in the government's fiscal position, with open-market operations playing a secondary role.

[40] One of the rules that Mints evaluated at length was that proposed by Friedman (1948), under which changes in the government's fiscal position would produce variations in the money supply with the aim of balancing the budget at full employment. Mints was, on balance, critical of that rule. See Dellas and Tavlas (2019).

monetary framework could have prevented the Great Depression (Dellas and Tavlas, 2019). In his 1950 book, Mints expressed this argument as follows:

> … today we have utter confusion and uncertainty in our monetary system. We do not know when or to what extent the banks may extend or contract the stock of money; we do not know what policy the Federal Reserve System will pursue. Who would have predicted before 1929 that the Reserve System would take an almost completely passive attitude during conditions such as those that developed from 1929 to 1932? (1950, p. 8).

Fisher, Simons and Mints

As mentioned, in his writings Simons did not cite Fisher's work on price-level stabilization, a circumstance that was puzzling to some authors on doctrinal monetary history. To help explain that puzzle, I have argued that Fisher was not a progenitor of monetary rules in the sense of Simons; Fisher did not provide assessments of alternative rules, his framework entailed considerable discretion in the use of policy instruments, and he did not discuss the role of rules in reducing monetary-policy uncertainty.

Although Simons did not refer to Fisher's work on price-level stabilization, Mints did refer to Fisher's policy framework and, in doing so, Mints expressed the view that Fisher's framework was not on a par with that of Simons. Consider the following.

- In his 1945 book, *A History of Banking Theory*, Mints referred to Fisher, along with John Commons and Gustav Cassel, as primary "advocates of price-level stabilization" (1945, p. 272). In an implicit reference to Fisher's willingness to use a multitude of policy instruments, Mints noted that, in contrast to Commons and Cassel, Fisher was "not ... so ready ... to believe that the central bank alone could achieve this end [*i.e.*, price-level stabilization]" (1945, p. 272). Immediately following that comment, Mints made clear that he considered Simons's rules-based framework to be of a different character from the frameworks of other writers: "At any rate the problem of a legislatively prescribed and definite rule, as opposed to discretionary action by the central bank, has been explicitly presented, and very definitely defended, *only* by H. C. Simons" (1945, p. 162, italics supplied).

- In his 1950 book, *Monetary Policy for a Competitive Society*, Mints drew a distinction between the advocacy of *price* stability by Fisher and the espousal of *monetary* stability by Simons: "Irving Fisher has been the stoutest advocate of price-level stabilization. Henry Simons has been the more convincing, although he was more interested in the fundamental problem of monetary stability than in this particular criterion of [*i.e.,* price-level] stability" (1950, p. 126).

- Mints made a similar argument in the introductory chapter of his 1950 book: "Irving Fisher has been the strongest supporter of a policy of stabilizing the price level" (1950, p. 10). Then, after implying that Fisher was primarily concerned about considerations of distributive justice between debtors and creditors, Mints wrote:

> Monetary stability, as evidenced by a stable price level, has seldom been looked upon as a necessary condition for the effective operation of a competitive system. Nevertheless, some few writers have seen the essential need for monetary stability and have proposed deliberate efforts to maintain price-level stability for this reason, rather than merely on grounds of justice (1950, p. 10).

In assessing the state of play of previous work on price-level stabilization, Mints again drew a distinction between Simons's contributions and the work on stabilization by other economists, including Fisher:

> Henry C. Simons saw most clearly the essential character of the need for monetary stability. While he believed that stabilization of the price level is

> (for the present, at least) the most feasible policy for this purpose, he was much more interested in pointing out the urgent need for some definite and announced criterion than in this, or any other, specific indicator of stability. His work was consistently directed toward the statement of the proper rules and conditions for the effective functioning of a competitive society, and he looked upon *a rule for monetary stability* as one of the most important of such conditions (1950, p. 11, italics supplied).

A final point about the differences in the policy perspectives between Fisher and Simons is important to mention. As discussed earlier, Fisher had been highly supportive of Roosevelt's discretionary policy with regard to the price of gold in 1933. Moreover, the ascendency of Roosevelt to the Presidency in March 1933 had been followed by numerous measures that increased the government's role in the economy and restricted competition. Fisher was supportive of these measures. In his book, *Mastering the Crisis*, published at the end of 1933[41], Fisher wrote:

> In economic affairs … the comparatively recent idea of regulation has superseded the dogma and brutal rule of *laissez faire*, and has been abundantly vindicated in doing so …. Today it [*i.e.*, business] plans ahead on an unprecedented scale; and perhaps planners should take government into partnership …. Mr. Roosevelt is doing things which a generation ago -- nay, a decade ago -- would have been denounced as 'socialism' (1933c, pp. 107-08).

Simons had a decidedly different view of Roosevelt's gold policy and of his policy interventions into economic affairs. In an article published in the *Chicago Tribune* in March 1934, he characterized Roosevelt's gold policy "as a resort to cutthroat competition in the international field" that aimed "to shift unemployment to other nations." As for Roosevelt's measures that sought to increase the role of the government in the economy, Simons (1934a) wrote:

> Of crucial importance now is the question of whether it will be possible after the orgy of legislative witch-hunting, ill-conceived measures, and misleading slogans, to retain or re-establish the essential foundations of political and economic freedom. Will it be possible to secure a stable system of rules under which a free enterprise system can function effectively?

[41] The preface to the book was written in November 1933.

For Simons, the rules of the game with respect to money aimed to reduce monetary uncertainty in order to preserve the market-based economy.[42] For Fisher, any relationship between the policy of price-level stabilization and the preservation of the market economy was of a second order of importance.

Fisher in the mid-1930s

By the mid-1930s, Fisher's policy framework had undergone several notable changes. First, the experience of the Great Depression provided Fisher with additional reasons for advocating that the monetary authorities be assigned a price-level objective. He expressed the view that the Fed could have prevented the Great Depression had it acted to ease monetary policy after the October 1929 stock market crash. In this connection, Fisher (1935a, p. 115) pointed-out that the Federal Reserve, under the leadership of Benjamin Strong, Governor of the Federal Reserve Bank of New York, had pursued a policy of price-level stabilization before Strong's death in 1928; had Strong lived, Fisher suggested that the Great Depression could have been avoided, an argument that anticipated Friedman and Schwartz's (1963) indictment of the Fed.

Second, Fisher began to qualify the amount of "trust" that could be delegated to the monetary authorities. In particular, he began to argue that the authorities would not simply be directed to achieve a price-level objective, but would be disciplined for failure to achieve that objective. In a 1934 appearance before Congress for a bill calling for the creation of a Monetary Authority that would be directed to stabilize the price level, he stated:

(T)here should be a provision that if at any time for 3 successive months

[42] The argument that Simons advocated a policy rule to effectuate a liberal policy agenda was made by Laidler (1993).

> there is a deviation from that norm by as much as 10 per cent, then the board is automatically removed by that fact. It need not be impeachment proceedings and not by the President, but simply by the fact, and it would be the duty of the President to proclaim the facts -- here are the facts, and according to law those men are out (Fisher, Hearings before the Subcommittee of the Committee on Banking and Currency, House of Representatives. 73:2, February 1, 1934, p. 28; quoted from Barber *et al.*, 1997, p. 1).

Third, likely reflecting the influence of the Chicagoans, in the second edition of his book *100% Money,* published in 1936, Fisher recognized the possibility of monetary rules other than the price-level objective. As pointed out by Loef and Monissen (1999, p. 103, footnote 8), Fisher listed the following alternatives: a fixed total money supply; a fixed per capita money supply; and, setting the per capita money supply at a fixed fraction of per capita income (1936, pp. 22-27). Other than listing the alternatives and stating that his preferred objective was one that stabilized the price level, Fisher did not provide a discussion of the merits of the rules or a comparison of the rules.

Fisher had become cognizant that his policy framework entailed more discretion than the Chicago fixed-quantity-of-money rule. In Congressional Testimony on March 22, 1935 he explained the difference between his price-level framework and the Chicago framework as follows:

> Yes; you could do away with the whole management of currency .... All you would need to do would be to decree that we should increase our per capita circulation until it reached $250, or whatever you decided on, and then keep it there. That is really what was proposed by these—or substantially what was proposed by these economists at Chicago. Personally, I would prefer to have some discretion enter in order to get a higher degree of stabilization. This is like running your automobile with a robot instead of with a chauffeur. I would rather have a chauffeur and give him a little discretion, although he would be told where he is to go (Fisher, 1935b, pp. 541-542).

IV. FRIEDMAN ON POLICY RULES

During the course of his career, Friedman espoused two main rules-based frameworks.[43] A primary objective of both frameworks was to reduce monetary uncertainty: "[P]olicy implications that monetarists like myself have drawn ... is that the primary task of the monetary authorities should be to avoid introducing uncertainty in the economy" (Friedman, 1983, p. 3). In the early part of his career -- from the late-1940s until the mid-1950s -- he proposed a largely automatic framework that would link changes in the stock of money to the state of the federal budget (Friedman, 1948). The stock of money would be raised when there was an increase in the budget deficit -- by the amount of the deficit; it would be decreased when there was a surplus in the federal budget -- by the amount of the surplus. The surpluses and deficits, in turn, would result from the impact of changing economic conditions on a stable tax structure and a stable expenditure policy. The aim of the proposal was to use the built-in flexibility of the federal budget as a means of producing counter-cyclical movements in the stock of money.[44] Discretion would be limited to "the determination of the level of income underlying the stable budget" (1948, p. 139).

Like Simons and Mints, Friedman did not claim that a policy rule would eliminate the business cycle, but he believed that it would reduce "cyclical fluctuations to tolerable proportions," and that it would do so by minimizing policy uncertainty (1948, p. 136). Friedman argued as follows: "Its claim to serious consideration is that it provides a stable framework of fiscal and monetary action; that it largely eliminates the uncertainty and undesirable political implications of discretionary action by governmental authorities" (1948, p. 155).

[43] Friedman (1969) also considered a third rule -- one of setting the nominal interest rate to zero, but he explicitly disavowed its use by policy makers. Nelson (2020) provides the definitive analysis of the evolution of Friedman's theoretical and policy views.
[44] As Friedman (1948, p. 136) pointed-out, for the framework to be entirely automatic the adoption of the 100 per cent reserves scheme would be essential. Friedman (1948) advocated the abandonment of open-market operations.

Friedman began his collaboration with Anna Schwartz in 1948, leading to their *A Monetary History of the United States* (1963). The findings from that research -- in particular the empirical confirmation of the dual hypotheses that the Federal Reserve had initiated the Great Depression with its policy tightening in 1928 and 1929 and deepened the Depression with its policies beginning in 1930 -- convinced Friedman of the damage that could be inflicted by inappropriate monetary policy and was the key factor underpinning Friedman's switch to a constant-money-growth rule.[45]

In a 1959 lecture delivered a Fordham University, Friedman (1960) presented the reasons underlying his preference for monetary rules over discretion, in general, and his constant money growth rule, in particular.[46] He began his discussion of this issue by noting that Simons (1936a) had contrasted two ways of dealing with the issue: one way was "by specifying a general goal and then giving monetary authorities wide powers to use at their discretion in promoting it; the other [way], by assigning specific responsibilities to monetary authorities to be carried out in accordance with rules specified in advance and known to all." The major argument against discretion, Friedman stated, is that "it renders *monetary policy uncertainty* a potential source of uncertainty and instability ....[E]xperience [notably, that of the Great Depression] suggests that eliminating the danger of instability and uncertainty of policy is far more urgent than preserving 'flexibility'" (1960, p. 86, italics supplied). Friedman made clear that "a satisfactory policy guide or rule" should be tied directly to a policy instrument (1960, p. 88). His proposed money-growth rule fulfilled that criterion, he

[45] Friedman first proposed the constant-money-growth rule in 1956. Friedman's collaboration with Schwartz continued into the 1990s. It was their collaboration on *A Monetary History*, however, that played a pivotal role in underpinning Friedman's switch to a monetary-growth rule. For detailed discussions of the evolution of Friedman's views on that rule, see Tavlas (2015), Lothian and Tavlas (2018) and Nelson (2020).

[46] Friedman (1960, p. 90) stated that he had come to believe that his earlier (1948) rule was overly complex and had the unattractive attribute of not separating "the monetary problem from the fiscal."

believed, since the Fed could control the money supply through the control of its earning assets: "the links between Reserve action and the money supply are sufficiently close, the effects occur sufficiently rapidly, and the connections are sufficiently well understood, so that reasonably close control over the money supply is feasible" (1960, p. 89). In turn, a rate of increase in the money supply of three per cent to five per cent a year would be expected to correspond "with a roughly stable price level" (1960, p. 91). In his Fordham lecture, Friedman stated that his proposed rule would not be a magic bullet; he left the door open to other rules that could become more-suitable should the understanding of the economy improve.

Friedman made the following additional arguments in favor of the money growth rule. First, it guards the authorities from "continual exposure ... to political and economic pressures and to the deceptive effects of short-lived tides of events and opinions." Second, it provides "criteria for judging performance." Third, it avoids "continual and unpredictable shifts in the immediate guides to policy and in the content of policy as the persons and attitudes dominating the authorities have changed" (1960, p. 85). Fourth, and in contrast to a rule that aims to stabilize the price level, a money-growth rule does not subject monetary policy to the problem of long and variable lags, which can magnify rather that moderate, the amplitude of the business cycle (1960, pp. 85-88). [47]

V. CONCLUDING REMARKS

I have argued that there were subtle, but important, differences between the rationales underlying the policy frameworks of Irving Fisher, on the one hand, and Chicagoans Henry Simons and Lloyd Mints, on the other. This circumstance helps

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[47] In an influential paper on the effects of long and variable lags in monetary policy, Friedman (1951) showed that discretionary policy can be destabilizing.

explain the puzzle of the lack of recognition of Fisher's framework by Simons and Mints. Fisher advocated price-level stabilization as the objective of the central bank, with the aim of moderating the amplitude of the business cycle. The Chicagoans drew a distinction between their policy rule, the objective of which was to reduce *monetary-policy* uncertainty -- thereby stabilizing both monetary-policy expectations and the business cycle -- and Fisher's framework. For Simons and Mints, monetary policy itself could be the main source of shocks to the economy.

I have also argued that there were other important differences between the policy frameworks of Fisher and the Chicagoans.

- The Chicagoans wanted to tie the hands of the monetary authorities, binding them to a rule; Simons believed that an ideal rule should target a policy instrument which, in turn, would stabilize the economy. Mints favored a rule that targeted the price level but considered a money-growth rule to be "equally acceptable." Friedman's money-growth rule was also an instrument rule. Fisher wanted to "entrust" the authorities with discretionary powers in the setting of instruments.

- The Chicagoans provided comprehensive assessments of alternative rules, concluding that each of the rules-based frameworks they evaluated (apart from the gold standard) was essentially equally good; Fisher did not undertake such an assessment.

- The Chicagoans provided assessments of "rules versus discretion," a term they coined; Fisher did not do so. The words "rules versus discretion" or "rules versus authorities' never entered Fisher's lexicon.

- The Chicagoans evaluated the characteristics that should comprise a good rule, concluding that such a rule should: define monetary policy in terms of means, be compatible with a balances budget, be simple and easy to communicate, definite, and able to guard the authorities against political interference; Fisher did not do so, although he did express the view that a price-stabilization framework would reduce political pressures on the authorities. Fisher's framework for policy implementation was far from simple or definite; it involved more than twenty policy instruments. Fisher's proposal that the Fed target stock prices, in addition to wholesale prices, introduced additional ambiguity into his framework.

There was, however, a key similarity between Fisher's view of the Great Depression and what would emerge as the Chicago view of that episode in the 1940s and 1950s. Fisher attributed the Great Depression to the failure of Fed officials to ease monetary policy after the October 1929 stock-market crash. Beginning in the late-1930s, Mints made a similar argument. Friedman and Schwartz provided comprehensive evidence validating that view. Friedman contributed to the rules-based framework by, among other things, showing that discretionary policy can amplify, rather than moderate, the business cycle through the effects of long and variable lags.

Tobin (1987, p. 369) wrote the following about Irving Fisher: "Fisher is widely regarded as the greatest economist America has produced." Fisher made original contributions in such areas as monetary theory, the distinction between nominal and real interest rates, the development of index numbers, the trade-off between inflation and unemployment, distributed-lag estimation, and the theory of interest-rate determination. When it comes to the modern view on monetary-policy rules, however, credit for the origination and development of the debate about rules versus discretion, and the idea that rules are preferable to discretion, belongs to Henry Simons and Lloyd Mints.

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