



“The Initiated”: Aaron Director and the Chicago Monetary Tradition

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Economics Working Paper 20115

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July 21, 2020

Aaron Director taught at the University of Chicago from 1930 to 1934 and from 1946 to 1967. Both periods corresponded to crucial stages in the development of Chicago monetary economics under the leaderships of Henry Simons and Milton Friedman, respectively. Any impact that Director may have played in the development of those stages and to the relationship between the views of Simons and Friedman has been frustrated by Director’s lack of publications. I provide evidence, much of it for the first time, showing the important role played by Director in the development of Chicago monetary economics and to the relationship between the views of Simons and Friedman.

Keywords: Aaron Director, Henry Simons, Milton Friedman, Chicago monetary tradition.

JEL Codes: B22, E42

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1. Introduction

Aaron Director has long been a revered, but enigmatic, figure in the development of economics at the University of Chicago. Director taught in Chicago's economics department from 1930 to 1934 and, after spending most of the intervening years working for the U.S. government, taught in the Law School from 1946 until his retirement in 1965. His legacy as a revered figure stems mainly from his time at the Law School, where he played a key role in establishing the field of law and economics as a separate discipline and, in 1958, founded *The Journal of Law and Economics*.¹ His reputation as an enigmatic figure reflects the fact that he left very little behind in terms of a written track record through which to assess his contributions. During his career in the Law School, his views became known through his teaching. His influence on the profession was revealed in the writings of his students, many of whom became distinguished legal scholars, and through his influence on Law School colleagues.² As George Stigler put it, "most of Aaron's articles have been published under the names of his colleagues" (quoted from University of Chicago News Office, 2004, p. 2).

Director's published output in the area of monetary economics was, if anything, even sparser than his published writings on law and economics. In the area of monetary economics, he had only four substantive publications: a 1931 book, *The Problem of Unemployment*, co-authored with Paul Douglas; a 45-page monograph, *Unemployment*, published in 1932; a 27-page monograph, *The Economics of Technocracy*, published in 1933; and a 1940 article, "Does Inflation Change the Economic Effects of War?," published in the *American Economic Review (AER)*, that dealt with the appropriate monetary framework for a war economy. Director also signed several Chicago departmental memoranda, circulated in 1932 and 1933, which laid out the Chicago analysis of the business cycle and its preferred policy responses to the Great Depression. Following Director's return to Chicago in 1946, he published nothing on

¹ A press release issued by the University of Chicago upon Director's death in 2004 referred to him as "founder of the field of Law and Economics" (University of Chicago News Office, 2004, p. 1). Ronald Coase, who became co-editor with Director of *The Journal of Law and Economics* in 1964, expressed the view that "Director played an important, perhaps crucial, role in the emergence of that new subject, law and economics, in the United States" (Coase, 1998, p. 601).

² See Coase (1998). In an essay on the development of Chicago economics, Reder (1982, p. 7) wrote: "In preparing this essay, I have been struck by the many strong expressions of intellectual indebtedness both of Chicago economists and legal scholars (such as Edward Levi and Robert Bork) to Aaron Director.... Director appears to have exercised a great deal of influence upon the principal figures in Chicago economics from the 1930s to the present."

the subject of money apart from a 1948 letter that appeared in the *New York Times*.³

The scarcity of Director's published writings in monetary economics is regrettable because his two appointments at the University of Chicago coincided with crucial stages in the development of Chicago monetary economics and because of Director's personal intimacy with the two leading figures underpinning those stages. Director's initial stint at Chicago from 1930 to 1934 coincided with the emergence of the Chicago monetary tradition in the early-1930s under the leadership of Henry Simons. That tradition stressed the role of an unstable velocity of circulation of money in initiating the business cycle, the perverse role played by a fractional-reserve banking system in exacerbating the cycle, the need of money-financed fiscal deficits to combat the cycle, and the necessity of both a monetary rule -- either a stable-price-level rule or a fixed-quantity-of-money rule -- and 100 percent reserves to help achieve long-run economic stability. Until the time of Simons's death in 1946, Director and Simons had been the best of friends (Coase, 1998, p. 602). Director's second stint at the University of Chicago, beginning in 1946, coincided with Milton Friedman's appointment to Chicago's economics faculty and with the emergence of Friedman's monetarist framework from the late-1940s to the mid-1950s. That framework featured the functional stability of the demand for money, a monetary interpretation of the business cycle in general and the Great Depression in particular, and a constant-money-supply-growth rule for long term stability; the framework also called for 100 percent reserve requirements, but not as a prerequisite for economic stability. As was the case with Director and Simons, Director and Friedman were intimate friends. Director was Friedman's brother-in-law -- Friedman having married Director's sister, Rose; the two brothers-in-law had a close personal relationship (Friedman and Friedman, 1998, Chapter 14).⁴

In addition to his close relationships with Simons and Friedman, Director also interacted closely with other faculty members of the economics departments during his

³ The letter was co-signed with seven other University of Chicago colleagues. I discuss the contents of the letter below.

⁴ George Stigler stated the following about Friedman's reaction to Director's lack of published output: "Milton Friedman was always chiding -- to use a mild word -- his brother-in-law for not writing his ideas up. 'It belongs in the public domain,' he said, and 'if you don't write anything, you've got it coming.' If quality is an increasing function of time, this was method by which you create pearls, but it didn't work in this case" (quoted in Kitch, 1983, p. 203). During Director's second stint at Chicago, his best friend became George Stigler, who would be awarded the Nobel Prize in Economics for his work in microeconomics. See Stephen Stigler (2005).

stints at Chicago. During the early-1930s members of the University of Chicago's economics faculty, including Director, met regularly in departmental meetings and Sunday social gatherings at Frank Knight's home to discuss the causes of the Great Depression and to formulate policy responses to the Depression (Tavlas, 2019a). Following his appointment to the Law School, Director "was responsible for generating a great deal of interaction among members of the Law School Faculty, the Economics Department, and the Business School"; he also participated in, and occasionally hosted, "bull sessions" among members of the economics faculty (Milton Friedman, quoted from Friedman and Friedman, 1998, pp. 194-95).

Having been at the University of Chicago during two crucial stages of the development of monetary economics at that institution, having had close personal relations with the two leading figures of each of those stages, and having participated in regular discussions among members of the economics departments during those stages, Director was in a unique position to shed light on the relationship between the monetary frameworks of those stages. Professional interest in that relationship stemmed from Friedman's (1956a) claim that his monetary framework was an outgrowth of a 1930s and 1940s Chicago oral quantity-theory tradition, which "differed sharply from the atrophied and rigid caricature [of the quantity theory] that is so frequently described by the proponents of the new income-expenditure approach.... At Chicago, Henry Simons and Lloyd Mints directly, Frank Knight and Jacob Viner at one remove, taught and developed a more subtle and relevant version [of the quantity theory]" (1956a, p. 3). Friedman's claim that his monetary economics derived from an earlier Chicago tradition led to a long-running debate about the nature of that tradition and its relationship to Friedman's monetary economics. An upshot of that debate as it stood in the early-1970s was that Friedman was accused of having "invented" a University of Chicago quantity theory tradition in order to launch a successful monetarist counter-revolution against the then-ruling Keynesian orthodoxy, as issue to which I return in the concluding section.⁵ Although Director's stays at Chicago bridged the two periods of

⁵ The charge that Friedman had "invented" a University of Chicago monetary tradition was made by Johnson (1971, pp. 10-11) and Moggridge and Howson (1974, p. 227). The debate about the relevance of the earlier Chicago monetary tradition to Friedman's monetary framework had the effect of calling into question Friedman's professional integrity. Leeson (2003) edited a two-volume set that reprinted articles dealing with the debate on the earlier Chicago monetary tradition and the possible influence of that tradition on Friedman's monetary economics. For a detailed discussion of the earlier Chicago monetary tradition, see Tavlas (2019a).

dominance of Chicago monetary economics by Simons and Friedman, respectively, Director did not leave behind his view on the relationship of the monetary economics of those two Chicagoans in published work, nor did he leave behind published commentary on the role he may have played in influencing the views of Simons and/or Friedman or on the influence of those two economists on his views.

In this paper, I provide evidence that makes Director's role in the development of both stages of Chicago monetary economics less enigmatic. In particular, I show the close correspondence between (i) Director's analysis of the mechanics of the business cycle and his proposed policy response to the cycle, as provided in his three aforementioned publications of the early-1930s, and (ii) the views that are known to have characterized the earlier Chicago monetary tradition. I show that Director brought those views, especially the emphasis on the important role played by the quantity of money in the economy and the need of policy rules, with him in his second stint at Chicago. In this connection, I discuss the contents of three hitherto undiscovered works by Director: two unpublished 1955 memoranda and a 1956 lecture. In those works, Director emphasized the role of money in the economy and assessed alternative monetary rules, giving credit to Simons for having established the case in favor of rules. I show that Director advocated a constant money-supply-growth-rate rule in 1955, one year before Friedman publicly did so, with the implication that there had been cross-fertilization between Friedman's formulation of a monetary-growth rule and that of Director. Like Friedman, Director also blamed the Fed for causing the Great Depression. Finally, I show that Director supported the 100 percent reserves scheme in the mid-1950s, although, like Friedman at that time, he did not view the scheme as essential for stabilizing the economy.

2. Biographical Sketch⁶

Aaron Director was born in 1901 in Charterisk, Ukraine, which was then part of the Russian empire. At the time, his father worked in a flour mill. The mill failed on two occasions in the early-1900s, and following each of those events, his father emigrated alone to Portland, Oregon. Shortly after the second time, in early 1914, his father sent for the rest of his family.

⁶ This section draws on Coase (1998), Friedman and Friedman (1998), Stephen Stigler (2005), Van Horn (2010a; 2010b), and University of Chicago catalogs for various academic years contained in the University's Special Collections Research Center.

Director graduated from Lincoln High School in Portland in 1921 and, along with fellow student, Mark Rothkowitz (who would later become a famous abstract painter under the name of Mark Rothko), was admitted to Yale on a scholarship.⁷ After graduating from Yale (in three years), Director worked in various jobs, including farm worker, coal miner, and teacher at the Newark Labor College. An interest in worker's education led him to Europe (on a cattle boat) to study the education of adult workers. He then returned to the United States to teach at Portland Labor College, run by the Oregon Federation of Labor.

In 1927, Director entered the University of Chicago as a graduate student to study labor economics with Douglas, who had offered him a fellowship. In 1930, Director was made an instructor in the economics department, where he taught courses on Labor Problems (Econ 240) and Introduction to Statistics (Econ 211). During the early-1930s, his interest gravitated away from labor economics toward monetary economics. This circumstance was noted in a January 31, 1934 letter from Harry Millis, who was Chair of the Economics Department, to Viner; Millis complained that in his course on labor problems, Director had “come to the conclusion that there was nothing worth the while to talk about except monetary theory and policy and business cycles” (quoted from Van Horn, 2010a, p. 266). Director was evidently a very effective teacher. Paul Samuelson wrote of his experience as an undergraduate at Chicago in the early-1930s as follows: “I had learned my first economics from Aaron Director, who had a tremendous impact on me” (letter from Samuelson to Milton Friedman, December 8, 1995).

In the years leading up to 1934, Director had come increasingly under the influence of Knight while his relationship with Douglas cooled. Knight and Douglas, who at one time been close friends, had become bitter adversaries by the early-1930s, communicating only in writing, with the consequence that Douglas refused to support the renewal of Director's contract. Douglas's justification was that Director had not established a strong publishing record. As a result of Douglas's opposition, in 1934 Director's teaching contract was not renewed.⁸ He moved to the U.S. Treasury for two years, before returning to Chicago to write a dissertation under Viner on the quantitative history of the Bank of England. Director traveled to England in 1937 to

⁷ At Yale, Director and Rothko published a left-leaning newspaper called the *Saturday Evening Pest*.

⁸ For a discussion, see Tavlas (2019a).

conduct research on the dissertation, but was denied access to the Bank's records by the Bank's officials. Consequently, he never completed his dissertation. He returned to Washington where he worked at several government agencies and the Brookings Institution until the end of World War II.

Following the death of Simons in 1946, apparently by suicide (Rose Friedman, from Friedman and Friedman, 1998, p. 155; Van Horn, 2014), Director agreed to take a position in the Chicago Law School. In addition to his teaching responsibilities, Director headed the Free Market Study Project, financed by the William Volker Fund, which promoted free-market research. The proposal that Director head the Project at the Law School had been pushed forward by Simons and Friedrich Hayek.⁹ After Simons's death, and following the offer made to Director to join the Law School, Hayek wrote to Director encouraging him to accept the offer with the following argument: "It seems to me the only chance that the tradition which Henry Simons created will be kept alive and continued in Chicago" (letter from Hayek to Director, July 10, 1946; quoted from Van Horn, 2010, p. 267). After his retirement from the Chicago Law School in 1965, Director moved to California, where he worked at the Hoover Institution and the Law School at Stanford University. Director died in 2004.

3. The 1930s Chicago Monetary Tradition and Director

3.1. The Chicago Tradition

As mentioned, Chicago economists circulated several departmental memoranda in the early-1930s in which they laid out their business-cycle theory and policy framework. Three of these memoranda were particularly important in providing the Chicago tradition's positions.¹⁰ First, I describe these memoranda briefly. Then I discuss the business-cycle analysis and policy framework contained in the memoranda.

⁹ The proposal by Hayek and Simons that Director be offered the position in the Law School to head the Free Market Study Project was initially turned down by the Law School's administration. Van Horn (2014) provided evidence supporting the view that Simons's apparent suicide was connected with the initial decision not to approve the proposal.

¹⁰ The Chicagoans issued a total of five memoranda in 1932 and 1933 that addressed the causes of, and policy responses to, the Great Depression. Two of these memoranda are not discussed in this paper. (1) A January 1932 memorandum sent to President Hoover. It was signed by twelve Chicagoans (including Director) and twelve non-Chicagoans. In light of the input of the non-Chicagoans to that memorandum, its policy recommendations did not strictly reflect Chicago views. (2) An early-1933 document signed by a group of Chicago academics, including five members of the economics department, and local Chicago politicians; it sharply criticized the fiscal tightening in the budget announced by President Hoover in December 1932. The members of the economics department who signed the document were Department Chair Millis, Douglas, Simons, Viner, and Simeon Leland. For discussions of the contents of the latter two documents, see Tavlas (2019b).

April 1932 Memorandum (Pettengill, 1932). The untitled memorandum was three pages in length. It was addressed to Congressman Samuel Pettengill, who had solicited the opinions of various economists on the advisability of either issuing government bonds or printing money in order to liquidate “adjusted compensation certificates,” which were bonuses paid (in the form of certificates redeemable in cash at a future time) to U.S. military personnel for services rendered in World War I.¹¹ The memorandum dealt with business-cycle theory and counter-cyclical policy; it was signed by twelve Chicagoans, including Director.¹²

March/April 1933 Memorandum (Knight *et al.*, 1933). The untitled memorandum was five pages in length. It proposed both long-term banking reform, introducing the 100 percent reserves scheme, and short-term measures to reverse the economic contraction and deal with the collapse of the banking system. Knight and Simons were the progenitors of the banking reform measures, which were based on the English Bank Charter Act of 1844, sometimes referred to as the Peel Banking Act. Eight Chicagoans, including Director, signed the memorandum.¹³

November 1933 Memorandum (Simons *et al.*, 1933). This document was titled “Banking and Currency Reform” and was fourteen-and-one-half pages in length; it included a five-and-one-half page appendix, “Banking and Business Cycles,” and a seven-page supplementary memorandum, “Long-time Objectives of Monetary Management.” The memorandum (including the appendix and supplement) focused on three main policy issues: (1) banking and currency reform; (2) analysis of alternative long-term monetary rules; and (3) the implementation and objectives of macroeconomic policies. The memorandum was unsigned. It was drafted by Simons, who credited its origination as the outcome of the discussions among all members of the economics department. I provide evidence below showing that Director played a key role in producing the memorandum.¹⁴

¹¹ The legislation that granted the certificates was enacted in May 1924.

¹² The others who signed were: Department Chair Millis, Douglas, Knight, Mints, Simons, Viner, Garfield Cox, Harry Gideonse, Henry Schultz, Chester Wright, and Theodore Yntema.

¹³ See Tavlas (2020). The other signatories were Cox, Douglas, Knight, Mints, Schultz, Simons, and Albert Hart. The memorandum was originally circulated to about forty academics and Washington politicians. It went through two revisions -- in March and April 1933, respectively.

¹⁴ Phillips (1995, p. 74) reported that the November memorandum was more-widely distributed than the March memorandum.

Analytic framework. The *theoretical* edifice of the 1930s Chicago monetary tradition was very different from that constructed by Friedman in the 1950s. The key theoretical characteristics of the 1930s Chicago tradition were the following.¹⁵ (i) In contrast to Friedman's (1956a) presentation of the quantity theory as a portfolio-balance model of the demand for money, under which money-demand was presented as a stable function of a limited set of variables, the earlier Chicagoans used Irving Fisher's equation of exchange, $MV + M'V' = PT$, where M is the quantity of money, V is the velocity of circulation of money, M' is the quantity of demand deposits (or near moneys), V' is the velocity of circulation of demand deposits, P is the average price level of the considerations traded for money, and T is the annual physical volume of these considerations. The Chicagoans argued that economic fluctuations are caused by sharp, autonomous variations in V . (ii) Changes in V have a cumulative effect on prices and on real economic activity. Once prices start to rise, they trigger anticipations of further prices rises. Thus, if individuals expect prices to rise, they will dishoard (i.e., increase the velocity of circulation, V). (iii) The costs faced by businesses, especially wages and interest rates, are sticky. Hence, with changes in costs lagging changes in prices, price increases initially affect profits and output. (iv) The effects of cumulative changes in V are greatly exacerbated by the perverse behavior of a fractional-reserve banking system, which expands credit -- and, thus, demand deposits, or M' -- in booms and contracts credit in depressions. As a result, the quantity of money (M) and near-moneys (M'), and their velocities (V and V' , respectively), increase in booms and contract in depressions. (v) Because of the foregoing factors, the economic system is essentially unstable and there is no bottom to a depression.

Policy framework. What especially distinguished the earlier Chicago tradition from other approaches to the quantity theory in the 1930s was Chicago's policy edifice. That edifice consisted of two pillars -- one involving counter-cyclical policies and the other policies for long-term economic stability.

Counter-cyclical policies. Anti-depression policy, the Chicagoans believed, requires an expansion in M . The necessary variation in M can be generated by either open-market operations or money-financed fiscal deficits. During depressions, policies operating through the banking system are not likely to be effective, in part, because,

¹⁵ For documentation, see Patinkin (1969) and Tavlas (1997; 2019a).

during periods of low confidence, banks do not want to lend, and businesses do not want to borrow. The most effective way to put money into circulation is through money-financed fiscal deficits.

Long-term stability. As mentioned, to stabilize the perverse behavior of a fractional reserve banking system, the earlier Chicagoans favored 100 percent reserve requirements, an idea that became known as the Chicago Plan of Banking Reform (Hart, 1935). The idea aimed to (1) eliminate the possibility of losses by depositors, thereby helping to prevent abrupt shifts from deposits into currency which generate changes in \bar{V} and \bar{V}' , (2) provide better control of the money supply, and (3) prevent the socialization of the bank-lending function and political control over investment. To reduce policy uncertainty and to moderate the business cycle, the Chicagoans believed that monetary policy should be conducted on the basis of a rule -- ideally a rule that fixes the quantity of money; a second-best rule would be one that stabilizes the price level. To help ensure that these domestic objectives could be achieved, the Chicagoans called for the abandonment of the gold standard and for a move to a more-flexible exchange-rate system.

The case for a monetary rule was set-out most persuasively in the November 1933 memorandum.¹⁶ To establish the connection between Chicago thinking on rules in the early-1930s and what Director carried-over to Chicago in the 1950s, I now describe the contents of that memorandum. The memorandum considered “the relative merits of [six] different possible rules” (Simons *et. al.*, 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. The aim of a rule would be to tie the hands of the

¹⁶ In Tavlas (2019c), I argue that the November memorandum marked the origination of the debate on rules vs. discretion. 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*.

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 of the memorandum argued that the gold standard lacks the certainty needed to underpin a monetary rule (1933, pp. 10-11). 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’ 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; it was seen as having several advantages. First, to the extent that changes in the quantity of money are generated by the government’s fiscal position -- and, as mentioned, 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); I return to the argument used to support the latter contention below. 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).

3.2 Director in the Early-1930s

The following summary of Director's business-cycle analytics and policy views is based on Douglas and Director (1931), and Director (1932; 1933). The 1931 book *The Problem of Unemployment*, was primarily written in the summer of 1930, during which time both co-authors stayed at Swarthmore College; given Douglas's seniority, Director regarded it as generous of Douglas to include his name as co-author.¹⁷ I conjecture that the 1933 monograph, *The Economics of Technocracy*, was completed at the very end of 1932 or the beginning of 1933. The conjecture is based on the following: (1) the latest citation in the monograph (p. 5) is to a December 28, 1932 article published in the *Nation*, and (2) the monograph was published under the University of Chicago's *Public Policy Pamphlets* series, then-edited by Harry Gideonse; Gideonse's "Introduction" to Director's contribution was dated February 2, 1933. Consequently, all three publications by Director preceded the appearance of the March 1933 memorandum, which introduced the idea of 100 percent reserve requirements.

Analytical framework. Director believed that there are many initiating causes of the cycle; there is no way of isolating any specific cause (1931, p. 168; 1932, p. 24).¹⁸ At the bottom of a cycle, banks hold large amounts of reserves, costs have declined, stocks have been depleted, and less-efficient workers have been eliminated (1931, pp. 169-70; 1932, pp. 24-25). Eventually, optimism begins to take hold, and the expansionary phase of the cycles begins. Using the $MV + M'V' = PT$ framework, the banking system plays a crucial role in the cycle (1931, p. 236; 1932, p. 24; 1933, pp. 19, 23). The expansion proceeds as follows. (i) The demand for credit rises; the large amount of reserves held by the banks supports an expansion of credit to meet the higher demand (1931, p. 169; 1932, pp. 24-25; 1933, p. 22). (ii) Confidence rises and prices begin to increase, but not equally; wages and interest costs lag behind, and, therefore, profits, output, and

¹⁷ The above information is based on a conversation between Friedman and Director that took place in 1996. Friedman communicated the information to David Laidler, in a letter dated October 9, 1996 (Friedman, 1996). Director's attribution of generosity to Douglas reflected Director's humility. In a 1934 letter from Douglas to Chester C. Maxey (who taught economics at Whitman College), Douglas wrote about Director as follows "During the year 1929-1930 he was my research assistant. We worked together at Swarthmore College under the auspices of the Swarthmore Unemployment Study for six months in 1930, and wrote jointly the book *The Problem of Unemployment*. He was an equal author in every respect" (letter from Douglas to Maxey, October 29, 1934).

¹⁸ Director attributed the Great Depression to the debts imposed on the defeated countries following World War I and to tariff increases (1933, p. 21).

employment rise (1932, pp. 25-26; 1933, p. 22).¹⁹ (iii) The increase in prices gives rise to expectations of further price increases and a “cumulative process” involving higher prices, still-higher price expectations, and so on, ensues (1931, p. 182; 1932, pp. 36-37). (iv) Expectations of higher prices along with sticky factor costs give rise to expectations of still-higher profits. As a result, banks expand credit (\overline{M}) further (1931, p. 171). (v) Two “tendencies” which reverse the expansion emerge: (a) banks reserve ratios decline so that banks raise interest rates and decrease the supply of loans, and (b) the increases in wages and other costs catch-up with the rise in prices, decreasing profits (1932, p. 26). (vi) Once a depression starts, there is no bottom to the fall in output: “There is no certainty of recovery from a widespread and serious depression [T]here is always the possibility of a complete breakdown of our economic organization and hence the great importance of any action to check the violent fluctuations in economic activity” (1932, p. 28).

Counter-cyclical policies. Given the central role that Director assigned to money in the cyclical process, and to the role of stickiness of costs in converting cyclical changes in prices into changes in output and employment, he argued that during depressions there is a need to increase the money supply to raise prices (1932, pp. 25-28). In Douglas and Director (1931), the authors assessed various methods of increasing the supply of money. They considered indirect methods -- that is, open-market operations or a lowering of the discount rate -- unlikely to be effective during depressions because “it is not certain that the reduction in cost [*i.e.*, lowering of interest rates] will be sufficient to induce businessmen to take full advantage of it in view of the increasing unprofitableness of business” (p. 245; see, also, Director, 1932, p. 38). Therefore, they opted for “more direct methods for seeing to it that the increased potential credit is actually put into circulation so that it can buoy up prices” (p. 245). Specifically, Douglas and Director advocated public-works projects, preferably financed by “the issuance of added money by the government rather than by taxes” (p. 248; see, also, Director, 1932, pp. 36-37).

¹⁹ Director believed that prices play a key role in coordinating economic activity. He stated: “It is essential to point out that in a capitalistic society the stimulus to economic activity is the making of profits, and the mechanism for coordinating economic behavior of a countless number of businessmen is the pricing process” (1932, p. 23).

Director believed that control over the quantity of money needed to play a key role in “eliminating or reducing industrial fluctuations” (1932, p. 37). He argued that “the most significant line of action is that to be taken by central banks -- the Federal Reserve System -- in the United States” (1932, p. 37). He also argued that: “If the banks act promptly enough, they can so regulate the volume of bank credit [demand deposits] as to check any boom which develops, and counteract any depression which begins” (1932, p. 38). Other than arguing that “Our monetary system is in great need of reform” (1933, p. 27), however, Director did not provide specifics with respect to the way demand deposits can be regulated under a fractional-reserve banking system. In his own work in the early-1930s, he did not suggest that 100 percent reserves might help stabilize the banking system during the business cycle.

Long-term stability. Douglas and Director (1931) introduced into the Chicago literature the view that rules are preferred over discretion. In this regard, after assessing Irving Fisher’s compensated-dollar proposal, they criticized the proposal for being “tied up with the consequences of the future gold production of the world” (p. 235).²⁰ Nevertheless, Douglas and Director argued that “Professor Fisher’s proposal has the merit of being automatic and not depending on the discretion of government or banking officials” (p. 235). As mentioned, the mechanism that underpinned cyclical dynamics in Douglas and Director (1931) and Director (1932; 1933) was the effect of changes in the price level -- with sticky costs -- on profits and production. Consequently, Douglas and Director proposed the following monetary-growth rule for preventing depressions: “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 would permit industry to go on with undiminished profits and without curtailment of activity” (1931, p. 183). Douglas and Director expressed the view that a rule aimed at stabilizing the domestic price level entailed the abandonment of the gold standard and a move to flexible exchange rates: “It is thus possible for one nation to stabilize its price level ... if it is willing to go off the gold exchange standard and allow its exchanges to fluctuate” (1931, p. 251).

²⁰ Fisher introduced the compensated-dollar scheme in his *Purchasing Power of Money* (1911) as a means of stabilizing the general price level. Under the scheme, the monetary base would consist of gold-bullion certificates, which would be convertible into a varying amount of gold linked to a general level of prices. Whenever the price level, for example, exceeded that of a given price index comprised of commodities in a certain period, the price of gold would be reduced by the same percentage in the next period.

3.3 Discussion

There were clear similarities between both the analytic and policy frameworks of Director in the early-1930s and those that marked the earlier Chicago monetary tradition. These similarities include the views that: (1) it is not possible to isolate the causes of the business cycle other than attribute the cycle to an unstable velocity of circulation; (2) the cycle is cumulative in nature, driven by changes in prices and price expectations in association with sticky costs, and exacerbated by the perverse behavior of a fractional-reserve banking system; (3) there is no bottom to a depression; (4) anti-depression policy requires an expansion in the money supply generated through money-financed fiscal deficits; (5) to attain long-term economic stability, policy uncertainty must be reduced, a circumstance that requires monetary policy to be conducted on the basis of a rule; and, (6) to permit the conduct of a monetary policy on the basis of a domestic rule, there is a need to move to a flexible-exchange-rate system. Although Director did not advocate the 100 percent reserves scheme in his own work during the early-1930s, he called for a reform of the monetary system and signed the March 1933 memorandum that first put forward the 100 percent reserves scheme.

Apart from Simons, Director was the main progenitor of the November 1933 memorandum which set-forth in greater detail than the March 1933 memorandum the cases for both 100 percent reserve requirements and monetary rules. There are two pieces of evidence to support this contention. First, in a letter from Simons to Douglas dated October 2, 1934, Simons, responding to a query from Douglas about who drafted the (unsigned) November 1933 memorandum, 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 favourable critical reports from yourself and other members of the group. So what is uniquely my own is merely the phrasing” (letter, Simons to Douglas, October 2, 1934).

Second, as noted, a key reason underlying the case for a fixed quantity-of-money rule in the November 1933 memorandum was that such a rule would stabilize expectations. The argument underlying this view was the following. Under the conditions of rising output and population, and with a fixed quantity of money, “prices would fall, to be sure, but only at an average rate of, perhaps, three percent per annum.” While “some people will be alarmed by the prospect of a continually falling price level,” such a rate of decline would be unimportant “for ordinary business operation”

and would come to be expected (Simons *et al.*, 1933, Supplement, p. 6). 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).

I conjecture that the foregoing argumentation is attributable to Director. The basis of my conjecture is the following. 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.”²¹ In his intervention, Director provided an argument very similar to that contained in the November 1933 memorandum used to support a fixed quantity of money with a falling price level. Director stated: “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, and the changes in the prices of the factors of production -- wages, and so on -- come somewhat later, 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. I, pp. 77).

The following points merit comment. First, while the book co-authored by Douglas and Director was a collaborative effort, some of the policy views set-forth in that book - - namely, the advocacy of a monetary-growth rule to maintain economic stability and money-financed fiscal deficits to combat depressions had been proposed by Douglas in an earlier paper (Douglas, 1927). Hence, Douglas originated those two characteristics that came to mark the early-1930s Chicago policy framework. Second prior to the 1931 book co-authored with Director, Douglas had not framed the issue of a rule in terms of a comparison of rules versus discretion. In the formation of Chicago monetary economics in the early-1930s, both the argument that rules are preferable to discretion, and the view that a requirement for the pursuit of a domestic monetary-policy objective

²¹ The intervention in question was Director’s only intervention during the conference.

is a flexible-exchange-rate system, originated with Douglas and Director. Third, Director's views would undergo development in 1933 in the discussions leading to the circulation of the March and November memoranda of that year. As mentioned, a key feature of those memoranda was the advocacy of 100 percent reserves scheme.²² With his signature on the March memorandum, Director endorsed the scheme in 1933. Fourth, by the mid-1930s, Simons, the architect of the fixed-quantity-of-money rule, had come to believe that such a rule would be unworkable in a financial system characterized by the existence of near-moneys. Consequently, his preferred rule in the then-existing financial system became one that stabilizes the price level. I now discuss Director's views on 100 percent reserves and monetary rules after he left Chicago in 1934.

4. *Later Views*

4.1 *1940 AER Paper*

Director's 1940 *AER* paper, "Does Inflation Change the Economic Effects of War?" dealt with the means of financing a "transfer to government of the necessary funds for the acquisition of a given fraction of current output" that was be expected to take place during the adjustment from a peacetime to a war economy (1940a, p. 343).²³ Director distinguished among three methods of financing a war: (1) inflationary finance; (2) government borrowing; and (3) taxation. Under the inflationary method, a continuous rise in wages and prices in both war industries and consumer-goods industries would "make profit prospects appear more promising in all industries, and lead to speculative attempts to purchase raw materials for industries which must ultimately contract their output." This circumstance could "lead to a continuous shifting of workers between and within industries, the chief result of which will be a net loss of output" (1940a, p. 355). In contrast to inflationary finance, the maintenance of a relatively-stable price level during a war would "facilitate the transition from peace to

²² The scheme was developed independently, by Knight and Simons, in the first half of the 1920s, in the context of the English Banking Act (or the Peel Banking Act) of 1844. The English Banking Act of 1844 created a ratio between the gold reserves held by the Bank of England and the notes that the Bank could issue. During the first half of the 1920s, Knight taught at the University of Iowa and Simons was Knight's student. On the origination of the 100 percent reserves scheme by Knight and Simons, see Tavlas (2020).

²³ I know of no previous discussion of the contents of Director's 1940 paper in the literature. In 1940, Director worked at the Brookings Institution. In addition to the above 1940 paper, in 1940 Director published a review in the *JPE* of Ralph Hawtrey's book, *A Century of Bank Rate*. Other than stating that in periods of depression "the manipulation of bank rate may be completely ineffective" and that a "balanced" economic system requires "a substantial amount of certainty" (1940b, p. 444), Director did not express views on money in his review.

war” (1940a, p. 355). Under the borrowing method, Director argued that the central bank would “subordinate its own policy to that of the treasury,” keeping interest rates low (1940a, p. 358). Therefore, “large-scale borrowing is itself likely to promote monetary expansion” (1940a, p. 358). In light of the difficulties associated with both the inflationary and borrowing methods of financing, Director concluded that “we are more likely to adhere to a policy of monetary stability if a much larger fraction of war expenditures is obtained through taxation than was the case in past wars” (1940a, p. 343). How should the goal of monetary stability during a war be defined? Director expressed the view that a rule should be followed: “A given criterion, such as a fixed price level or fixed quantity of money, may therefore be adopted” (1940a, p. 351).

There is one additional point concerning Director’s 1940 article that needs mentioning -- namely, Director’s advocacy of the 100 percent reserves scheme. In this connection, he noted that financing of fiscal deficits “during periods of unemployment” by central-bank credit results in seigniorage for both the government and the banks -- “the creation of income that would otherwise not exist” (1940a, p. 360). To deal with the issue of seigniorage of the banks, Director stated:

The opposition to the creation of money by the state rests on the fear that the state will not exercise the necessary restraint, and that private banks will compete with the state in the creation of money, using the money created by the state as reserve. The latter difficulty, however, can be overcome by applying the principle of Peel’s Act [*i.e.*, 100 percent reserves] to the deposits created by the central bank for government war expenditures (1940a, p. 360).

In summary, in his 1940 article Director affirmed the importance of money in the economy, called for a “criterion” in the form of a stable price level or fixed quantity of money to guide monetary policy during a war, and advocated the 100 percent reserves scheme to control the ability of banks to create or destroy deposits.

4.2 1948 New York Times Letter

In January 1948, Director, Friedman, and six other University of Chicago colleagues coauthored a letter titled, “Control of Prices,” published in the *New York Times*.²⁴ The letter made the following points. (1) Variations in the general price level are “in the main determined by variations in the quantity of money.” (2) The quantity of money is dependent on the volume of reserves. (3) The Fed and the Treasury “are amply

²⁴ The other signatories were Abram Harris, Frank Knight, H. Gregg Lewis, Russell Nichols, and W. Allen Wallis. Nelson (2009) deserves credit for having discovered this letter.

equipped with technical power to control the volume of money and, hence, the general level of prices.” (4) The “greatest contribution” that monetary policy can make is “stabilization of the price level.” (5) What is needed to control the general price level “is a legislative rule directing the monetary authorities to maintain stability” (Director *et al.*, 1948).

4.3 The 1955 Memoranda

In July 1955, Director wrote two memoranda on monetary policy, both of which were sent to John Davenport²⁵ -- a four-page memorandum, dated July 11, and a three-and-one-half-page memorandum, dated July 29. The memoranda were apparently written in response to questions addressed to Director by Davenport. Davenport was a financial journalist, who graduated from Yale in 1926, two years after Director graduated. Along with Director, Friedman, and Stigler, Davenport was one of the original thirty-eight members of the Mont Pelerin Society, having attended the first meeting of the Society in 1947 (Milton Friedman, from Friedman and Friedman, 1998, p. 160). Davenport had been with of *Barron's Weekly* from 1949 to 1954 before becoming an Assistant Managing Editor of *Fortune* in 1954. He was the author of the book, *The U.S. Economy*, published in 1964.

The economic background to the July 1955 memoranda is relevant. The money stock (M_2) rose at a fairly steady rate -- 2.8. percent from June 1953 to June 1954, and 3.9 percent from June 1954 to June 1955 (Friedman and Schwartz, 1963, p. 614). A recession ended in May 1954, and a robust recovery followed (Meltzer, 2009, Vol. 2, Book 1, pp. 112-14). Consumer-price inflation was mildly negative in the year through August 1955. At the beginning of 1955, the Fed raised margin requirements on stock purchases and short sales from fifty percent to sixty percent “to prevent the recovery from being hampered by excess speculative activity” (Federal Reserve Board, *Annual Report*, 1955, p. 84; quoted from Meltzer, 2009, Vol. 2, Book 1, p. 114). Evidently, the state of the economy, including the Fed’s action to raise margin requirements, prompted Davenport to ask for Director’s assessment of monetary policy. The assessment was provided in the July 11 memorandum.

Director’s appraisal of the Fed’s policy stance was generally positive, although

²⁵ The memoranda are contained in Box 2 of the Davenport Papers in the Special Collections Section of the Hoover Institution at Stanford University. I know of no previous discussion of the contents of these memoranda.

critical of the measure aimed at reducing speculative activity in the stock market. Director pointed to the steady growth in the money supply: “If the monetary authorities are now committed to a policy of increasing the supply of money by 2 to 3 percent per year, it marks a decided improvement in monetary management. Providing, of course, they adhere to this commitment and quit worrying about particular sectors of the economy” (July 11, 1955a, p. 1). With regard to the Fed’s attempt to curb stock-market speculation, Director queried: “How does one know that [stock] prices are too high?” (p. 1). He expressed the view that the Fed’s concern with stock-market speculation could trigger an unwarranted “general monetary contraction” (p. 2). He continued: “Facing the [contractionary] consequences of such action on the general level of activity, [the Fed] will [then] go out of [its] way to foster monetary expansion,” bringing about “a general inflation” (p. 2).

Director then considered the appropriate framework for monetary policy. He asked: “What standards or rules shall it [the monetary authority] use?” (p. 3). He wrote:

[The Fed] has these alternatives.

- (a) Regulate the supply of money to prevent substantial changes in the level of economic activity.
- (b) Regulate the supply of money to prevent significant changes in the general level of prices.
- (c) Increase the supply of money by some given percentage per year (p. 3).

“Rule (a)”, he argued, “provides more discretion than we should provide any government agency” (p. 3). While he thought that there was “little difference between rule (b) and rule (c),” rule (c), he noted, “requires no forecasting, and no discretion” (p. 4).²⁶

Director concluded his appraisal of the Fed’s monetary-policy framework with a call for a monetary-growth rule and a comment on the fixed-quantity-of-money rule (*cum* falling price level) as contained in the November 1933 memorandum:

A steady increase in the supply of money is required to prevent a decline of prices resulting from the growth of output due to the growth of the labor force and capital equipment, even in the absence of increases in productivity. While we could adjust ourselves to a falling price level, this would entail unnecessary strain on the economy (p. 4).

²⁶ Director did not state that rule (b), price-level targeting, involves some discretion. He was certainly aware, however, from Simons’s work (1936), that price-level targeting involves discretion in the choice of a specific price index and in the use of policy instruments. Director made this point in his 1956 lecture, discussed below.

Director followed his advocacy of a monetary-growth rule with a criticism of Hayek's position on such a rule, noting that, all else equal, an increase in the supply of money would keep prices stable in the event that productivity increases. He continued: "Some people call this inflation. And Hayek and others have talked about resulting structural maladjustments with disastrous consequences. I wish I knew what they are saying" (p. 4).

The July 29 memorandum evidently represented an initiative by Director to answer queries about monetary policy that Davenport had addressed to Hayek. A handwritten note by Director to Davenport was attached to the memorandum. It read, in part, as follows:

Dear John:

I am enclosing some brief additional notes on your questions. I doubt whether Hayek will answer your questions. He has gone to Aspen for the month.... Monetary policy has been one of the bright spots of the Eisenhower administration. So you better be cautious in undermining it.

The July 29 memorandum was mainly a critique of Hayek's monetary framework. Director stated: "[Hayek] still adheres to the conclusion that inflation -- including an increase in the supply of money which because of an increase in productivity keeps general prices stable -- creates maladjustments.... But he cannot set out the mechanism which leads to his conclusion" (1955b, p. 1).

The memorandum contains an important argument about the origins of the Great Depression that is directly related to Friedman's emerging monetarism of the 1950s. In the first-half of the 1950s, Friedman introduced and tested two hypotheses about the Federal Reserve's role in the Depression, namely that (1) the Fed initiated the Great Depression with its policy tightening in 1928 and 1929 and (2) the Fed deepened the Depression with its policies of the early-1930s. Friedman posited the second hypothesis in 1951 and confirmed it in 1954; he introduced the hypothesis that the Fed had caused the Depression in 1956 and confirmed it two years later.²⁷ Evidently, discussions between Director and Friedman in the mid-1950s on the causes of the Great Depression had been taking place. In the July 29 memorandum, Director stated: "There was nothing wrong with the 20's except that they did not last long enough. What I just outlined is not an inaccurate account of what happened when the Board became

²⁷ For documentation, see Lothian and Tavlas (2018) and Nelson (2020).

concerned with overspeculation and brought on the depression” (p. 4).

4.4 1956 Lecture on Full Employment Policies

In June 1956, Director gave a series of eight lectures at the Institute of Humane Studies. Seven of the lectures dealt with issues related to the ideas of classical economists and to the issue of monopolies. However, one of the lectures, titled ‘Full Employment Policies,’ focused on the role of money in the economy. The lecture was delivered in two parts on June 20; each part lasted approximately forty-five minutes. From the question-and-answer session towards the end of the lecture, it is clear that Hayek was in attendance. I describe the views on money expressed by Director in that lecture and I compare them with Friedman’s views in the 1950s.²⁸

Director began the lecture by expressing the view that the Keynesian emphasis on the role of the government’s income and expenditure policies in stabilizing economic activity -- a role that he considered incompatible with the liberal emphasis on the minimization of the government’s involvement in the economy -- was giving way to a revival of interest in the role of monetary factors in the determination of short-run variations in income (p. 2). This revival of interest, he argued, directed attention to an examination of the appropriate monetary system (pp. 2-3). That system, he believed, was an exception to the liberal emphasis on reducing the role of government. Director stated that “the issuance of fiduciary currency is a natural monopoly” and should not be left unregulated: “Monetary arrangements are a necessary function of government” (p. 2). Once it is determined that the government has a role in the monetary system, Director argued that: “The only problem that remains is the [choice of monetary] standard that should be adopted.” The liberal position, he argued, is that “discretionary authorities should be eliminated or at least minimized” (p. 3).²⁹

Director argued that discretionary policies cannot successfully stabilize the

²⁸ The lecture is available at the Hoover Institution Archives as a sound recording. I have transcribed the lecture (word-for-word) into written form. The typed-up version of my hand-written transcription is twelve pages in length. The page numbers below refer to the typed-up version.

²⁹ In a 1959 lecture (published in 1960) at Fordham University, Friedman provided a similar argument: “The production of a fiduciary currency is, at it were, a technical monopoly” (Friedman, 1960, p. 7). After enumerating “the features of money that justify government intervention” in the issuance of currency -- including the resource cost of a pure commodity currency, the need to enforce contracts involving promises to pay in the medium of exchange designated to be money, and the need to set limits on the amount of money issued -- Friedman argued: “Something like a moderately stable [monetary] framework seems an essential prerequisite for the effective operation of a private market economy” (1960, p. 8). See, also, Friedman (1951b).

economy for two main reasons. First, to be successful, such policies need to have access to accurate forecasts, but there is an “inherent difficulty -- some would say, the impossibility -- of forecasting short run changes in the economy” (p. 3).³⁰ Second, echoing the argumentation made in the November 1933 memorandum, Director stated that a basic component of successful policies is to “provide some certainty in the way of [policy] expectations” which “[discretionary policies] cannot provide” (p. 3-4). Such certainty can only be provided by a rule. What is important, he argued, is not the particular rule followed, but that the rule be complied with. At this point, Director referred to Simons.

I would point out that the late Professor Simons’s original emphasis was primarily on the role of stable rules [rather] than on the character of the rules themselves. There were occasions when he was inclined to argue that it really didn’t make a difference what kind of monetary system you establish -- one that led to rising prices or falling prices, and so on -- but what was important was that the rules should be fixed and known in advance so that the community could rely upon them (p. 4).

Director then considered the following alternative monetary standards.

Gold standard. Director criticized the gold standard as a rules-based regime. Its main advantages, he stated, are “the fact that it provides a check to governmental irresponsibility,” and “it removes discretion or authority.” However, it contains the following problems. (1) It is costly since it entails devoting “a fraction of [the community’s] resources to produce the gold necessary” to operate a monetary standard (p. 4).³¹ (2) While it eliminates discretionary authority, it does not stabilize expectations, which would have to be based on prospective changes in gold production. (3) It is subject to destabilizing shifts from deposits to currency -- unless there is a system of insurance on deposits or the abolition of the fractional-reserve system: “But if fractional reserves were abolished, then the cost of producing the necessary gold to continue operations on the present level of prices might not be a minor factor anymore.” (4) Its successful operation depends on not only the adherence of any particular country, “but it mainly requires the adherence of other countries” (pp. 4-5).

Director’s overall evaluation of the gold standard was the following: “My own

³⁰ As Nelson (2020, Chapter 4) documents, the same argument was made by Friedman (1948).

³¹ Friedman (1960, p. 81) argued similarly: “A full-fledged gold standard ... would have the great merits of complete automaticity and of freedom from government control. It would be costly in terms both of the resources used to mine gold and of the price movements resulting from the relative cost of producing gold and other commodities.” See, also, Friedman (1953, pp. 178-79).

conclusion is that the conditions for assuring adherence to the system are now lacking. Consequently, we can no longer say that it will provide a check to government irresponsibility” (p. 5). What is needed, he argued, is “a new religion” to replace the gold standard (p. 5). Here, the influence of Simons on Director’s thinking deserves mention. In his 1936 paper, “Rules versus Authorities in Monetary Policy,” Simons wrote:

In a free-enterprise system we obviously need highly definite and stable rules of the game, especially as to money.... To put our present problem as a paradox -- we need to design and establish with the greatest intelligence a monetary system good enough so that, hereafter, we may hold to it unrationally -- on faith -- *as a religion*, if you please. The utter inadequacy of the old gold standard, either as a definite system of rules or as the basis of a *monetary religion*, seems beyond intelligent dispute (italics added, 1936, p. 169).

Price-level stability. Director argued that the main advantage of a rule that aims to stabilize the price level is that it is easy to comprehend. Its disadvantages are: (1) it introduces “a considerable amount of discretion with respect to the timing and magnitude of the operations of the monetary authority” and (2) “it introduces the problem of the definition of the price level” (p. 6). Friedman (1960, p. 87) provided a similar assessment of the use of price stability as a policy guide: “Entirely aside from the technical problem of the specific index number of prices that should be used, the key difficulty is that the link between price changes and monetary changes over short periods is too loose and too imperfectly known to make price level stability an objective and reasonably unambiguous guide to policy.”³²

Fixed-quantity of money. Director stated that a rule that fixes the quantity of money was “the original position of the so-called Chicago view or Chicago School, which is essentially the work of Henry Simons” (p. 6). A “great advantage” of such a rule is that it is easily understood. The early-1930s Chicagoans, he noted, combined their advocacy of a policy rule with the 100 percent reserves proposal:

In the original formulation of the fixed-quantity-of-money rule or the stable-level-of-prices rule, great importance was attached to the reorganization of the banking structure, which is really a different thing from the rule adopted. This is the part of the formulation which has received most criticism. If it had not been incorporated in the original scheme, the scheme [*i.e.*, policy rule] itself might have received a lot more support. Why this should be I have never known except the fact that we seem to believe that everything we have must be the

³² Friedman’s argument was based on a 1951 paper showing that the existence of long and variable lags associated with discretionary policies can amplify the business cycle. See Friedman (1951a).

result of natural forces and any drastic change [such as] that embodied in the 100 percent reserve banking scheme suspect (pp. 6-7).

Director then discussed the rationale underlying the 100 percent scheme. In common with the argument made in the November 1933 memorandum, he argued that the scheme aimed to prevent the “possible loss of confidence in banks [during] unfavorable conditions which would lead to striking changes in the supply of money” (p. 7). One key development had taken place, however, after November 1933 that reduced the possibility of a loss in confidence in banks: “At the time [that] this proposal was first made we didn’t have an insurance system for banking. Now [with deposit insurance] this [reason for the 100 percent scheme] has been largely eliminated” (pp. 7-8).

Director also provided an argument in favor of the 100 percent reserves scheme not contained in the November 1933 memorandum -- “the choice between fractional reserves and 100 percent reserves depends on the extent to which we want to rely on discretionary authorities” (p. 8). The argument ran as follows. Suppose, as Director did, that monetary policy followed a growth-rate rule: “With 100 percent reserve banking, all the authorities would have to do is to make certain that they, themselves, created the necessary addition, say, to the quantity of money.” Under a fractional reserve system, in contrast, the authorities would have to “create that amount of reserves which they thought would carry with it the necessary increase in the quantity of money.” Therefore, “if the fractional reserve system responded in different ways over [different] periods of time to the level of reserves, then the monetary authorities would have to be given some discretion in determining the increase in the level of reserves in order to accomplish the final increase in the total quantity of money” (p. 8). Director concluded his assessment of the 100 percent reserves scheme as follows: “there is still a great to be said for working in the direction of a banking system with 100 percent reserves; but, it is not nearly as crucial a factor as we once considered it” (p. 8).

During the question-and-answer question toward the end of the presentation, a member from the audience, whom Director identified as “Professor Hayek,” asked the following question: “What would happen under a 4 percent annual money-growth rule if the level of prices suddenly went up, by 10 percent or 15 percent? Then the monetary authorities are no longer in there” [*i.e.*, are not able to act in a discretionary way to reduce inflation]. Director’s response was: “But our position [is that] these things will not happen in such a [rules-based] system. But this is an empirical issue” (p. 12).

Three final points about arguments made by Director in the lecture are important. First, Director expressed the view that the emerging empirical evidence indicated that the “primary source of instability [in the economy] has not been ... changes in preferences [with regard to consumption and investment], but the primary source has been changes in the quantity of money” (p. 10). With Friedman and his collaborators having been the main producers of that evidence, Director’s view on the role of money in the economy had clearly been influenced by the work of Friedman. Second, in stating his preference for rules over discretion, Director stated: “a necessary implication of an independent national monetary policy is for free, flexible exchange rates” (p. 6). As mentioned, the view that a flexible exchange-rate regime is needed to conduct domestic monetary policy was a characteristic that marked the 1930s tradition; that view also marked Friedman’s (1948; 1953) work. Third, in response to the question: “How would you modify the Fed?,” Director replied: “the first thing to do is abolish it and substitute a rule under which the money supply would increase by 2 percent or 3 percent per year” (p. 12). In a December 5, 1981 interview in *Human Events*, Friedman stated “I have been in favor of abolishing the Federal Reserve System for as long as I can remember” (quoted from Nelson, 2020, Chapter 8, p. 435).³³

4.5 Discussion

As mentioned, the key elements of Friedman’s monetarism emerged during the period from the late-1940s to the mid-1950s. In 1948, Friedman held the following views. (1) In line with the early-1930s Chicago approach that changes in the quantity of money be effectuated through the government’s fiscal position, he proposed a rule under which fiscal policy would be used to implement changes in the money supply. The stock of money would be increased 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 (Friedman, 1948, p. 145). (2) To deal with what Friedman regarded as the “inherent instability” of a fractional reserve banking system, Friedman called for 100 percent reserve requirements against demand deposits.

³³ I am grateful to Ed Nelson for providing me with this information. Nelson (2020, Chapter 8, p. 435) also provides the following remark made in 1964 by George Stigler which collaborates Friedman’s claim that he had long-held the view that the Fed should be abolished: “My colleague, Milton Friedman, on occasion recommends the abolition of the Federal Reserve System.” The remark was made in Ketchum and Strunk (1964, p. 42).

On the basis of his research -- both his own and that with his collaborators, especially Anna Schwartz -- by the mid-1950s Friedman's views on 100 percent reserves and on the appropriate rule had changed; he no longer considered a fractional-reserve banking system to be a potent force in the business cycle (1954; 1960, Chapter 3). An important reason underlying his changed view was the establishment of the Federal Deposit Insurance Corporation which, he believed, strengthened the resilience of the banking system (1954, p. 60; 1960, p. 67). Nevertheless, Friedman continued to support the 100 percent reserves scheme throughout his career and, in doing so, gave credit to his teachers Simons and Mints for having earlier proposed the scheme (1960, p. 65). His support for the scheme was based on two arguments. First, he believed that "federal insurance of deposits involves a substantial increase in government intervention into the lending and investing process" (1960, pp. 67-8); in contrast, the 100 percent reserves scheme would ensure the safety of deposits while also reducing the rationale for government intervention. Second, "decisions by holders of money about the form in which they want to hold money and by banks about the structure of their assets tend to affect the amount available to be held. This has often been referred to as the 'inherent instability' of a fractional reserve system" (1960, p. 66). The 100 percent reserves scheme, Friedman argued, would provide improved control over the quantity of money compared with the fractional-reserve system.³⁴

In a lecture delivered in 1956, Friedman stated that he had come to believe that his earlier proposal that the Federal budget be used to control the money-supply to be "more sophisticated than is necessary" (1956b, p. 5). In its place, he proposed -- for the first time in public -- a money-growth rule:

Consider the very simple rule: the monetary authorities do nothing whatsoever except see to it that the stock of money increases by simply 4% per year... I think that any student of monetary experience and policy who compares month by month what the Federal Reserve actually did with what they would have done under the 4 % rule will conclude that in perhaps as many as 90 % of the months, they would have done better if they had followed this simple rule ... it seems to me we might at least try this simple-minded rule for a time and see

³⁴ In contrast to Simons, in the 1950s Friedman did not argue that the fractional-reserve system can lead to cumulative changes in velocity and, thus, to financial crises. However, in the aftermath of the savings and loan crisis in the United States in the early-1990s, in the preface to the 10th edition of his 1960 book he stated "Had it [the 100 percent reserves proposal] been adopted, the savings and loan crisis and the crisis threatening the FDIC could not have arisen. Unfortunately, the proposal was completely neglected for decades. More recently, it has been revived under a new name, narrow banking ... I very much fear that the revived version is no more likely to be adopted than the earlier" (1960, 1992 edition, p. x). Nelson (2013) discussed Friedman's views on financial stability.

how well it works before we introduce further complications (Friedman, 1956b, p. 7).

Thus, by the mid-1950s both Director and Friedman had reached similar views on (1) the important role played by money in driving economic activity, (2) the role of the Fed in the Great Depression, (3) the need of a money-growth rule, (4) the need of flexible exchange rates, and (5) the assessment that 100 percent reserve requirements would be a desirable, but, because of the advent of deposit insurance, not crucial, factor for the financial system. On points (1) and (2), Director had clearly been influenced by Friedman's research showing the role played by changes in the quantity of money in driving the business cycle in general, and the Great Depression in particular.³⁵

5. *Concluding Remarks*

In the early-1970s Friedman was accused of "inventing" an oral Chicago quantity-theory tradition. The accusation was motivated by Patinkin's (1969) work demonstrating that the *theoretical* frameworks used by the early-1930s Chicagoans and by Friedman were different. Based on Patinkin's work, Johnson argued that, to create a successful monetarist counter-revolution, Friedman faced the "problem of establishing ... a plausible linkage with pre-Keynesian orthodoxy," a problem that Friedman solved, according to Johnson, with "the invention of University of Chicago oral tradition that was alleged to have preserved the fundamental truth among a small band of the initiated through the dark years of the Keynesian despotism" (1971, pp. 10-11).³⁶

This paper has presented evidence -- much of it for the first time in the literature -- on the monetary views of Aaron Director in the early-1930s and the mid-1950s, both of which were crucial stages in the development of Chicago monetary economics. Director interacted closely with Simons in the earlier period and, at a time when the economics profession downplayed the role of monetary forces in the economy, with Friedman in the later period. Director transmitted -- and perhaps contributed to -- key ideas that marked the earlier Chicago quantity-theory tradition including the views that: (i) the quantity of money matters, both as a counter-cyclical tool and for the maintenance of

³⁵ Recall that during the early-1930s Director had not formulated clear-out analysis about the origination of the cycle. Recall, also, that in the early-1930s Douglas and Director had advocated a monetary growth-rate rule.

³⁶ Friedman (1971) considered Johnson's remarks to be "libelous." The view that Friedman had invented a Chicago quantity-theory tradition has been widely accepted by doctrinal historians -- see Laidler (1973), Howson (2005, p. 388), Dimand (2010, p. 77), and Backhouse (2013, p. 346). Recent work supporting Friedman's claim that his monetary economics derived from a 1930s Chicago quantity-theory tradition includes Tavlas (2019b) and Dellas and Tavlas (2019).

long-term stability; (ii) rules are necessary to reduce policy uncertainty and maintain economic stability; (iii) the need of flexible exchange rates; and (iv) 100 percent reserves are desirable. Each of these characteristics was put forward in published work by Simons before his death in 1946, by Mints until his retirement in 1953, by Director in the mid-1950s, and by Friedman beginning in the 1950s. With very few exceptions, these views were *not* held by any economist outside of Chicago in the 1940s and 1950s.³⁷

In May 1967, Friedman delivered the third in a series of “Henry Simons Lectures” at the University of Chicago Law School. The title of Friedman’s lecture was “The Monetary Theory and Policy of Henry Simons.” Friedman described Simons as “above all, a shaper of my ideas” (Friedman, 1967, p. 55). The introduction to Friedman’s presentation was made by Director. In his unpublished introduction, Director made a statement that affirmed *his* belief in the existence of a Chicago monetary tradition: “One of the fields which Henry Simons cultivated was that of monetary theory and policy. That he did so accounts in no small measure for the continued interest in, and cultivation of, this subject at the University of Chicago, while it languished elsewhere” (Director, 1967, p. 3). That Director *also* cultivated that field accounts in no small measure for the continued interest in monetary theory and policy at the University of Chicago and for the continuity between the monetary framework of Chicago of the early-1930s and that of Chicago of the 1950s and after.

³⁷ The major exception was Clark Warburton, who in the 1940s argued that changes in the money supply were the driving force in the business cycle and that the Fed precipitated the Great Depression. Warburton, who worked at the EDIC, advocated a monetary-growth rule to stabilize the economy, but he did not support 100 percent reserves. Warburton’s publications ceased in 1953, when he was ordered to stop publishing by the U.S. Treasury because of his criticisms of the Federal Reserve’s policy during the Great Depression. He resumed publishing in the early-1960s. On the relationship between Warburton’s contributions and those of Friedman, see Humphrey (1971), Bordo and Schwartz (1979), Cargill (1979), and Tavlas (2019b). On Simons’s views, see, Tavlas (2015); on Mints’s views, see Dellas and Tavlas (2019).

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