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100 PERCENT RESERVE BANKING:
A COMPARISON OF PROPOSALS BY HENRY SIMONS AND LAURENCE KOTLIKOFF

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I. INTRODUCTION

Several economists have advocated requiring 100 percent reserves for checkable deposits to insure financial stability. This paper focuses on two proposals, Henry Simons's "Chicago Plan" and Laurence Kotlikoff's "Limited Purpose Banking." These proposals differ in the restrictions that would be placed on liquid assets that are close substitutes for holding money. Simons would eliminate shorter-term interest-bearing Treasury debt; all interest-bearing government debt would be consols. In Simons's ideal reform, all marketable corporate debt would be eliminated; private corporations would be 100 percent equity financed.

Under Kotlikoff's limited purpose banking proposal, all financial intermediaries would operate as *pass-through* mutual fund companies. Cash mutual funds would hold only cash, would be valued at $1 per share, and owners would be free to write checks against their holdings. Thus, these cash mutual funds would be demand deposits with 100 percent reserves. The share values of all other funds would vary based on fluctuations in market valuations. These other mutual funds could invest in a wide variety of assets including commercial paper, credit card debt, junk bond funds, etc. Unlike Simons's proposal, Kotlikoff's proposal would not eliminate short-term interest-bearing financial assets.

After reviewing the history and details of these proposals, this paper discusses the implications for the stability of the financial system and the conduct of monetary policy if these plans were implemented.

II. THE CHICAGO PLAN

In 1933 a group of economists at the University of Chicago proposed a plan for reform of banking and monetary policy that included requiring 100 percent reserves for demand deposits. There were two versions of the "Chicago plan" advocating 100 percent reserves but differing in some other respects.

The first version was attached to a March 16 letter from Frank Knight to Henry Wallace, Secretary of Agriculture, and listed seven other Chicago economists (Henry Simons, Aaron Director, Garfield Cox, Lloyd Mints, Henry Schultz, Paul Douglas and A. G. Hart) as supporters of the plan (Knight 1933). Wallace in turn passed the plan on to President Roosevelt for his consideration.

The complete text of the first version of the Chicago plan along with Knight's cover letter was published in Phillips (1995, 191-198). The document started with three "general recommendations":

> (a) That further decline in the volume of effective circulating media be prevented, preferably by some sort of federal guarantee of bank deposits;
>
> (b) That guarantee of bank deposits be undertaken only as part of a drastic program of banking reform which will certainly and permanently prevent any possibly recurrence of the present banking crisis;
>
> (c) That the Administration announce and pursue a policy of bringing about, and maintaining, a moderate increase (say, of – and not to exceed – fifteen per cent) in the level of wholesale prices, pending later adoption of some explicit criterion for long-run currency management. (Phillips 1995, 192)

The plan then listed twelve detailed proposals summarized in the first column of Table 1, the first of which was that "the federal government immediately take over actual ownership and management of the Federal Reserve Banks." Proposals two through five would prevent further decline in the money supply by providing Federal Reserve notes to meet the demands for payment by depositors in member banks and provide relief of non-member banks through loans from the Federal Reserve or the Reconstruction Finance Corporation. (Phillips 1995, 193)

Proposals six through nine included requiring 100 percent reserves for demand deposits and other banking reforms to "permanently prevent any possibly recurrence of the present banking crisis":

> The now typical commercial bank would, in effect, be broken up into at least two distinct corporations, say, a Deposit-Bank and a Lending Company. The Deposit-Bank would serve exclusively as a depository and

> agency for transfer of funds (checking); it would derive earnings solely from service-charges. The Lending Company, on the other hand, would engage in the business of short-term lending, discounting, and acceptance; it would be prohibited from accepting demand-deposits, and even from providing their short-term creditors, if any, with any effective substitute for checking facilities; thus, it, like other corporations, would be in position to lend and invest only the funds invested by its stockholders (and perhaps, bondholders). ... For investors preferring the savings-deposit form, the facilities of the Postal Savings System would still be available. (Phillips 1995, 195)

Proposals ten and eleven were to use counter-cyclical fiscal and monetary policies to increase Wholesale Prices 15 percent and then to prevent any further increase of prices (Phillips 1995, 196). The final proposal reduced the role of gold, calling for "suspension of free coinage of gold, an embargo upon gold import, prohibition of private export of gold, exchange for Federal Reserve notes for all gold coins, suspension of the gold clause in all debt contracts, and substantial government sale and export of gold abroad ..." (Phillips 1995, 48) However, the proposal ended with

> ... the problem of long-run currency management is one which need not, and probably should not, be settled for some time. Ultimately, it may even prove expedient to return to gold, especially if it appears that popular movements for "cheap money" cannot be checked without recourse to the old symbols. (Phillips 1995, 198)

Simons revised the first plan in early April, responding to comments from Irving Fisher. Based on his debt-deflation theory (Fisher 1933), Fisher called for a 60 percent increase in prices to reduce the real burden of debt. (Phillips 1995, 49) However, Simons rejected Fisher's position; the revised plan stated

> The objective of monetary policy should now be conceived, we insist, in terms of the volume of employment, with only incidental regard for the circumstances of debtors and creditors. In others words, currency measures should aim to correct, and to avoid over-correcting, the general maladjustment between product-prices and operating costs. Our

> recommendation of a fifteen percent increase in wholesale prices has little or no statistical foundation; the figure represents merely our guess of what would be necessary. (Phillips 1995, 52)

The revised plan also concluded with an argument for monetary policy guided by rules rather than granting discretion to monetary authorities, a theme recurring in later writings of the Chicago School.

> We feel that any body like the Reserve Board should only be 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. (Phillips 1995, 52)

The gold standard, which had been suspended since March 4, was abandoned on April 19, 1933. Congress approved a joint resolution abrogating the "gold clause" in public and private contracts on June 5 and passed the Glass-Steagall Banking Act of 1933 on June 16 (Schlesinger 1988, 20-21, 200-203). The Banking Act provided for federal deposit insurance, separated investment and commercial banking, and established the Federal Open Market Committee as an official body. It may be noted that President Roosevelt had opposed deposit insurance, and the "Chicago economists had supported it only as a temporary expedient to more fundamental reform." (Phillips 1995, 56)

While the actions of April through June 1933 satisfied the objectives of proposals 2, 3, 4, 5 and 12 in the first Chicago plan, other issues of long-term monetary policy remained unresolved. A second, expanded version of the Chicago plan along with a supplementary memorandum on "Long-time Objectives of Monetary Management" and an appendix on "Banking and Business Cycles" was prepared in November 1933. Whalen (1994, 23) reports that this version "exists apparently in only unsigned copies." However, Friedman (1967) recounted that, according to Aaron Director, these were "written primarily by Simons" (Friedman 1969, 82 n. 1). When published for the first time in Samuels (1994), Simons was credited as the sole author of both "Banking and Currency Reform" (Simons, 1994a) and the "Supplementary Memorandum: Long-Time Objectives of Monetary Management" (Simons, 1994b).

The nine recommendations in the November 1933 memo on "Banking and Currency Reform" (Simons 1994a, 32-34) are summarized in the second column of Table 1. The first recommendation of the November memo was similar to the first proposal in the March plan, "outright federal ownership of the Federal Reserve Banks." Recommendations two through four of the November memo were similar to proposals six and seven in the March plan:

> 2. Assumption by Congress of the exclusive power to grant charters ... to engage in deposit banking ...
>
> 3. Withdrawal by Congress from all existing corporations of all powers to engage in deposit banking – the suspension of such powers to become effective, say, two years after enactment of such legislation.
>
> 4. Enactment by Congress of legislation providing for incorporation of a new type of deposit banks, which shall be required to maintain reserves of 100 per cent, in the form of notes and deposits of the Federal Reserve Banks, against their deposit liabilities.

The eighth recommendation in the March plan, calling for legislation to provide a replacement for savings deposit services previously offered by banks, was not listed in the nine points of the November plan, but the Banking and Currency Reform memorandum did include a paragraph suggesting:

> A second type of institution, substantially in the form of the investment trust, woud surely appear, to perform, to some extent, the lending functions of existing commercial banks ... Such companies would obtain funds exclusively by sale of their own securities; and their lending capacity would be limited to the amount of funds so obtained. More important, perhaps, would be the appearance of strictly merchandising agencies for bringing together borrowers and lenders. Indeed, there is no good reason why the deposit banks should not be permitted to discharge this function, accepting applications for loans and referring them to particular customers who requested this service. Persons not interested in choosing their own investments might delegate to specialists (say, to trust companies) the power to make loans for them. In a word, short-term lending would be managed in quite the same manner as long-term lending; and the general situation would be

> different from the past only in that the creation and destruction of effective money through private lending operations would be impossible. (Simons 1994a, 35)

The sixth recommendation in the November memo described how the transition to 100 percent reserves would be achieved:

> 6. Continuous and systematic displacement during the transition period (two years), of private-bank credit as circulating medium by additional credit (notes and deposits) of the Federal Reserve Banks.
> (this implies continued open-market purchases by the Reserve Banks – which would serve to inject the substitute credit into circulation, and also to facilitate the gradual liquidation of existing deposit banks. ...) (Simons 1994a, 33)

The November memo noted a possible additional benefit of these open market operations:

> At the end of the transition period, the Reserve Banks should find themselves in possession of additional investment assets (perhaps exclusively bonds) about equal in value to the amount of the present federal debt. Since the earning of the Reserve Banks would belong to the government, the entire burden of the present federal debt might thus be eliminated – without taxation and without inflation! (Simons 1994a, 33)

According to the November memorandum, in addition to providing the additional monetary base necessary to meet the 100 percent reserve requirement, during the transition period open market operations would have the additional objective to increase the price level "as would actually be necessary to reasonably full employment at existing operating costs of industry." Unlike the March memo's precise stated goal of a 15 percent increase in wholesale prices, the ninth recommendation in the November plan merely called for Reserve authorities to achieve "a general price level specified unambiguously by Congress at the outset." (Simons 1994a, 34)

The eighth recommendation in the November memorandum concerned future monetary policy and advocated a rule to guide monetary policy rather than discretionary power vested in the Federal Reserve Board:

> 8. Prescription in legislation of a simple, explicit rule or principle of monetary policy, and constitution of, say, the Federal Reserve Board as a strictly administrative body, charged with carrying out the prescribed rule, but vested with no broad discretionary power as regards fundamental policy. (Simons 1994a, 33)

One rationale for following a rule rather than allowing discretion suggested that a rule would prevent destabilizing policies: "a rule should be designed to prevent the uncontrolled and perverse manipulation of the quantity of media which obtains under existing arrangements." (Simons 1994a, 33) Furthermore, a rule would prevent redistribution of wealth between debtors and creditors by inflationary policies: "Within a free enterprise economy, there would seem to be no place for a monetary authority with power to alter arbitrarily the position of parties to financial contracts." (Simons 1994a, 34)

The 1933 memorandum avoided "commitment at present to any permanent rule of monetary policy ... pending more mature deliberation, discussion and investigation as to the relative merits of different rules" (Simons 1994a, 39), but it listed several possible rules:

> Fixed total quantity of effective money; fixed quantity of money per capita; uniform rate of increase in quantity of money; maintenance of a stable price-level index (?); maintenance of moderately declining price-level. (Simons 1994a, 34)

Simons (1994a, 37) was somewhat favorable to a rule that fixed the quantity of money. However, he emphasized that "the establishment of some precise rule is, within wide limits, much more important than the choice among particular, alternative rules." (Simons 1994a, 35) However, he did consider the traditional gold standard to be inadequate: "Provision for maintenance of the traditional gold standard is not, by itself, an adequate rule, within the meaning of the above proposal." (Simons 1994a, 34)

The Banking and Currency Reform memorandum considered several methods of expanding the money supply when that is desirable, including open-market purchases of U.S. Treasury securities and open-market purchases of municipal or corporate bonds or commercial paper. However, in the context of the Great Depression, Simons (1994a, 38) favored raising prices by combining fiscal and

monetary policy, with increased government spending and/or tax cuts financed by an expansion of the monetary base.

The "Supplementary Memorandum: Long-time Objectives of Monetary Management" (Simons 1994b) discussed some possible short-comings of fixing the quantity of money and compared its advantages to a price-level stabilization rule. For Simons, the most serious question about the constant money supply rule was whether temporary changes in the quantity of money would be desirable to counter cyclical fluctuations in velocity. Simons (1994b, 42)conceded that "in theory such changes are desirable." However, he argued

> Much can be said for holding to the rigid formula of fixity in the quantity of money. Indeed, some of us are inclined to feel that the disturbances occasioned merely by changes of velocity are unlikely to be of serious magnitude; also, that under this simple rule the fluctuations would probably display a continuously diminishing amplitude. Perhaps the establishment of this simple rule represents as much as should be attempted at the outset. Certainly it would yield a substantial improvement over the existing system. (Simons 1994b, 42)

Part of his argument was based on the political advantages of a simple rule:

> The spectacle of Congress battling continuously over the question of "just how much inflation" is neither inspiring nor reassuring. There will always be the political danger of too much inflation; and one may insist that conservative legislators are more likely to be able to hold their ground on the positions of "no increase in the quantity of money" than on any particular compromise. Sentiment might be regimented effectively around the rule of a fixed quantity of money; but it is hard to see how the choice among various rates of increase could be erected into "a questions of principle". Any good rule of monetary management must be designed with serious regard for the symbolic configurations of the sacred cows, – if the requisite political stability is to be assured. (Simons 1994b, 44)

It may be noted that Simons (1994a, 32) emphatically rejected proposals for branch banking as a remedy to reduce the risk of fractional reserve banking, based in part on the argument that it would create banks that are

"too big to fail."

The 100 percent reserve requirement would eliminate bank failures and risk to depositors. However, this proposed reform had an additional rationale. The expansion and contraction of bank credit under fractional-reserve banking resulted in pro-cyclical rather than counter-cyclical changes in the money supply. "Money is created when it should be destroyed, and destroyed when it should be created." (Simons 1994a, 31) Under fractional reserve banking households' decisions to hold currency or demand deposits and banks' decisions to hold excess reserves affect the money supply. With a 100 percent reserve requirement, the money supply is equal to the monetary base and directly controlled by monetary policy.

III. SIMONS'S LATER PROPOSALS FOR MONETARY POLICY

Simons continued his advocacy of 100 percent reserve requirements in later writings on monetary policy, but with some significant differences between the 1933 memorandum and Simons's later writings. The most significant of these differences are summarized in Table 2.

A Positive Program for Laissez Faire (Simons 1934) and "The Requisites of Free Competition" (Simons 1936b) addressed a variety of issues including policies dealing with monopolies, taxation and tariffs. Regarding monetary policy, Simons (1934) mostly repeated the recommendations in the 1933 Chicago plan. However, in a footnote (Simons 1948, pp. 320-321 n. 7) he raised three issues that he would discuss further in later writings – the need to control "near moneys" such as savings accounts, the desirability of eliminating short-term debt of private businesses, and the links between monetary and fiscal policy:

> a) ... Our financial structure has been built largely on the illusion that funds can at the same time be both available and invested – and this observation applies to our savings banks ... as well as commercial, demand-deposit banking. Thus, any reform which dealt merely with demand deposits and checking accounts might largely fail to accomplish the results intended – might lead, indeed, to a merely nominal transformation of demand deposits into the savings account form.
>
> b) a major source of instability is also to be found in the widespread

practice of borrowing at short term. ... The existence of a large volume of short-term commercial debt is thus peculiarly inimical to stability, since any general demand for repayment forces industry into an effort at liquidation which cannot succeed and cannot fail to produce serious disorder. Short-term debts, moreover, are like time deposits, closely akin to money and demand deposits, since they provide in normal times an attractive and effective substitute medium in which the liquid "cash" reserve of individuals may be held.

In the interest of economic stability it would be desirable to bring about conversion of all investment (property) into the residual-equity form. ... But the problem of long-term debt is less serious. ...

c) effective administration, through a monetary authority, of any sound rule of monetary policy would be impossible apart from the closest cooperation, on the part of the Treasury and Congress, with respect to fiscal practices. ... Every change in the relation between taxation and expenditure, in either the amount or the form of the public debt, and even in the character of tax levies, has monetary effects of first magnitude. Thus, specifications for sound monetary and banking reform cannot be drawn without reformulation of the whole problem of government finance. Monetary policy must ultimately be implemented through fiscal arrangements.

In "The Requisites of Free Competition" Simons (1936b) advocated a price stabilization rule rather than fixing the quantity of money:

A rule calling for stabilization of some inclusive commodity-price index – and, I should urge, at its present level – offers the only possible escape from present chaos and the only promising basis for a real monetary system in the now significant future. (Simons 1948, 81)

Simons (1936a) made a similar recommendation of a price stabilization rule as "the only promising escape from present monetary chaos and uncertainties" in the conclusion of "Rules versus Authorities in Monetary Policy," but he noted that "a rule calling for outright fixing of the total quantity of money, however, definitely merits consideration as a perhaps

preferable solution in the more distant future." (Simons 1948, 183) His reason for rejecting a fixed quantity of money rule in favor of a price stabilization rule in 1936 was in part concern with the effects of severe fluctuations in velocity:

> The obvious weakness of a fixed quantity, as a sole rule of monetary policy, lies in the danger of sharp changes on the velocity side, for no monetary system can function effectively or survive politically in the face of extreme alternations of hoarding and dishoarding. (Simons 1948, 164)

In a lengthy footnote Simons (1948, p. 329 n. 11)discussed some of the "serious difficulties" in the "choice of a particular price index, as the basis of a definitive rule." However, he concluded

> Price-level stabilization thus seems, on the whole, extremely attractive as the basis of a liberal-conservative policy in the field of money and government finance for the next decade. Whether the price-index rule would be as satisfactory under conditions which could be realized only over a longer period as the rule of a fixed quantity of money may merit discussion in academic circles and may provide a promising point of departure for analysis and exposition; but the question is not of practical significance now. Given the inevitable limitations of any particular index, however, the former rule might ultimately acquire or manifest serious shortcomings. It is thus appropriate to observe that all the changes in our financial structure which seem necessary to make feasible the adoption of the fixed-quantity rule are changes which would also facilitate the operation of the price-index rule. The existence of a large volume of privately created money substitutes, with alternate expansion and contraction, might tax seriously the powers of a monetary authority seeking to prevent price-level changes. Thus, if the stability of an index is to be maintained with the least resistance and the minimum of disturbing administrative measures, it is essential that the power to issue money and near-money should increasingly be concentrated in the hands of the central government. (Simons 1948, 180)

Regarding the relationship between fiscal and monetary policy, in "The Requisites of Free Competition," Simons (1936b) proposed

> Establishment of the monetary rules as a sort of extra-constitutional mandate governing budgetary practices of the central government. (The monetary rules must be implemented through, and in turn must determine, fiscal policy.) (Simons 1948, 79)

In "Rules versus Authorities" Simons (1936a) links fiscal policy to monetary policy targeting price-level stabilization:

> Ultimately control over the value of money lies in fiscal practices – in the spending, taxing, and borrowing operations of the central government. Thus, in an adequate scheme for price-level stabilization, the Treasury would be the primary administrative agency; and all the fiscal powers of Congress would be placed behind (and their exercise religiously limited by) the monetary rule. The powers of the government to inject purchasing power through expenditure and to withdraw it through taxation – the powers of expanding and contracting issues of actual currency and other obligations more or less serviceable as money – are surely adequate to price-level control. (Simons 1948, 175)

Simons (1936a) allowed for delegation of some discretionary powers to the Treasury in pursuit of this price-stabilization rule:

> The Treasury might be given freedom within wide limits to alter the form of the public debt – to shift from long-term to short-term borrowing or vice versa, to issue and retire demand obligations in a legal-tender form. It might be granted some control over the timing of expenditures. It might be given limited power to alter tax rates by decree and to make refunds of taxes previously collected. ... Any legislation granting such authority, however, must also impose the duty and responsibility of exercising that authority in accordance with a sharply defined policy. (Simons 1948, 175-176)

His general argument for rules for monetary policy was based partly on the economic benefits of reduced uncertainty, but Simons also considered much delegation of discretionary power to administrative authorities to be

incompatible with democratic values:

> There are, of course, many special responsibilities which may wisely be delegated to administrative authorities with substantial discretionary power; health authorities, for example, cannot well be limited narrowly in their activities by legislative prescriptions. The expedient must be invoked sparingly, however, if democratic institutions are to be preserved; and it is utterly inappropriate in the money field. An enterprise system cannot function effectively in the face of extreme uncertainty as to the action of 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. (Simons 1948, 161)

For Simons short-term private debt makes all private business financially fragile. Thus in "The Requisites of Free Competition" (1936b) he argued

> We must abandon and avoid a financial system under which funds actually invested in production and trade are, at the same time legally available to creditors on demand or on short notice. Not only must we prevent the periodic multiplication of money substitutes; we must also face the fact that substantial liquidation of investment is inherently impossible and remodel our permissible financial practices accordingly. (Simons 1948, 80)

And in "Rules versus Authorities" (1936a) while considering all-equity financing of private business ideal, Simons proposed consols as a desirable form of debt-financing for private businesses as well as for government:

> ... The danger of pervasive, synchronous, cumulative maladjustments would be minimized if there were no fixed money contracts at all – if all property were held in a residual-equity or common-stock form. With such a financial structure, no one would be in a position either to create effective money substitutes ... or to force enterprises into wholesale efforts at liquidation. Hoarding and dishoarding (changes in velocity) would, to be sure, still occur; but the dangers of cumulative maladjustment would be minimized.

> Not far short of the ideal is a financial system in which all borrowing and lending takes the form of contracts in perpetuity – contracts on which repayment of principal can never be demanded. Given a large volume of financing on such contracts, the mere burden of the fixed annuity charges might occasionally lead to extensive effort among enterprisers to become more liquid. The protection against demand for payment of principal, however, leaves the total of fixed claims relatively small. (Simons 1948, 165)

In "Rules versus Authorities" Simons (1948, 164) noted another weakness of a rule fixing the total quantity of money: "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 ..." This problem led Simons in his later writings to continue to advocate restrictions on these financial assets.

In "On Debt Policy" (1944) Simons (1948, 220) described his vision of a "good financial society" in which all bonds would be

> consols or perpetuities, that is, obligations without *either* maturities or "call" features. In the good financial society bondholders could liquidate only by open-market sales; the Treasury could sell only one interest-bearing debt form and only by open-market sale; and it could retire such debt only by paying the current, free market price.

Further describing this "good financial society" Simons (1948, 220-221) noted parenthetically, "There would, of course, be no bonds save those of the Treasury or, at least, no trading of private debts on organized exchanges; but sane government finance obviously need not wait for sane reform in private corporate finance."

Simons (1948, 222) acknowledged that longer term debt such as consols would imply a higher interest rate on government debt due to the liquidity premium, but he anticipated that this would be accompanied by the replacement of short-term interest-bearing debt ("near money") with an increase in noninterest-bearing money: "Retiring short-term and redeemable issues, we may then safely have more debt in noninterest-bearing form; indeed we should certainly need more money to prevent deflation if we dispensed with moneys

disguised as bonds."

Simons (1948, 223)advocated varying the proportions of money and consols to stabilize the price level: "Converting money into consols is an anti-inflation measure; converting consols into money is a reflationary or anti-deflation measure."

In the conclusion to "On Debt Policy," Simons (1948, 228-229) saw the elimination of shorter-term interest-bearing debt along with 100 percent reserve requirements for checkable deposits as part of a comprehensive reform of banking and government and corporate finance:

> We have proposed, to repeat, that our debt be wholly and promptly converted into currency and consols, in whatever proportion is requisite for price-level stabilization. ... we only repeat proposals for the 100 per cent reserve scheme – for which I still have no great enthusiasm save as part of a gradualist program whose objective is recognized (and consistently pursued) as gradual reduction and ultimate denial of borrowing and lending powers to all corporations, especially as regards obligations of short term.

IV. OTHER ECONOMISTS ADVOCATING 100% RESERVES, 1933-1960

Whalen (1994, 27) notes that requiring 100 percent reserves for demand deposits was a popular reform proposal in the 1930s. The abolition of fractional-reserve banking was discussed in Lauchlin Currie's (1934) *The Supply and Control of Money in the United States*. Albert Hart, one of the signers of Knight's 1933 memo, published an article, "The 'Chicago Plan' of Banking Reform," in the Review of Economic Studies (Hart 1935).

Hart (1935) listed three main grounds for the original proposal:

> One ... is the obvious consideration that if chequing deposits were backed by reserves of 100 per cent. their holders and the public in general would be relieved of the risk of destruction of deposits by bank failures. ... A second contention is that the adoption of the scheme would make it possible to retire and cancel a large part of the national debt. ... The third ground for advocacy of the scheme is that it would create a situation favourable for truly effective monetary control. This, in the writer's opinion, is the real substance of the argument in

> favour of the scheme. (Lutz and Mints 1951, 438)

Hart noted that the relevance of the first point had been diminished by the creation of the Federal Deposit Insurance Corporation by the Banking Act of 1933. However, later critics of deposit insurance have argued that the 100 percent reserve requirement is a preferable policy to address this problem.

The second point is based on the assumption that in the transition to 100 percent reserve banking the government would provide the additional monetary base to meet the increased reserve requirement by creating money to purchase outstanding government debt. Hart considered this claim "illusory" (Lutz and Mints 1951, 438). He noted that the increased reserve requirement would lead to increased service charges on checkable deposits that could be avoided by government subsidies to banks. Hart, agreeing with a suggestion of Jacob Viner, argued that government subsidies to banks would just offset the reduction in interest payments on government debt. (Lutz and Mints 1951, 453-454) It may be noted that the issue of subsidies to banks reappeared later with Friedman's advocacy of interest payments on reserves (Friedman 1960, 71-74) and the implementation of a similar policy by the Federal Reserve in 2008.

Allen (1993, 706) reports that, although Irving Fisher expressed "delight" with the March 1933 Chicago plan,

> Fisher did not at that time embrace the 100 percent reserve proposal. Even five months later, in August 1933, he did not allude to it in a long conversation with the president or in material then submitted to the president. ... The earliest available evidence of Fisher communicating with Roosevelt on the plan is dated January 1934. (Allen 1993, 706-707)

From 1934 until his death in 1947, Fisher was an ardent advocate of a 100 percent reserve requirement for demand deposits. Fisher published the first edition of *100% Money* in 1935. In the preface to the first edition, he wrote that he "originally obtained many of the ideas embodied in" his book from a "memorandum" of a group at the University of Chicago including Henry Simons, Aaron Director, Frank Knight, Garfield Cox, Lloyd Mints, Henry Schultz, Paul Douglas and A. G. Hart. (Fisher 1945, xiii)

Fisher (1945, 11-14) listed eight advantages of his 100 per cent reserve

plan:

> 1, There would be practically no more runs on commercial banks; because 100% of the depositors' money would always be in the bank ...
>
> 2. There would be far fewer bank failures; because the important creditors of a commercial bank who would be most likely to make it fail are its depositors, and these depositors would be 100% provided for.
>
> 3. The interest-bearing Government debt would be substantially reduced ...
>
> 4. Our Monetary System would be simplified; ... All of our circulating medium, one hundred per cent of it, would be actual money.
>
> 5. Banking would be simplified; ... Money put into a checking account would belong to the depositor ... and would bear no interest. Money put into a savings account ... would belong unequivocally to the bank. In exchange for this money the bank would give the right to repayment with interest but *no checking privilege*. ...
>
> The reserve requirement for savings deposits need not necessarily be affected by the new system for checking deposits (although a strengthening of these requirements is desirable).
>
> 6. Great inflations and deflations would be eliminated; because banks would be deprived of their present power virtually to mint check-book money and to destroy it ...
>
> 7. Booms and depressions would be greatly mitigated; because these are largely due to inflation and deflation.
>
> 8. Banker-management of industry would almost cease; because only in depressions can industries in general fall into the hand of bankers.
>
> Of these eight advantages, the first two would apply chiefly to America, the land of bank runs and bank failures. ... Advantages "6" and "7" are by far the most important ...

However, there were some differences between the Chicago plan and Fisher's proposal. As noted above, the Chicago economists favored a less inflationary policy than Fisher. Simons also had misgivings about Fisher's 100 percent reserve proposal because Fisher failed to address problems of "near moneys." Allen (1993, 708) quotes a July 4, 1934, letter from Simons to

Fisher: "[S]avings-deposits, treasury certificates, and even commercial paper are almost as close to demand deposits as are demand deposits to legal-tender currency. The whole problem which we now associate with commercial banking might easily reappear in other forms of financial arrangements ..." Allen (1993, n. 21 pp. 708-709 reports that in that same letter

> Simons went on "... The fact that such deposits cannot serve as circulating medium is not decisively important; for they are an effective substitute medium for purposes of cash balances. The expansion of time deposits, releasing circulating medium from 'hoards,' might be just as inflationary as an expansion of demand deposits – and their contraction just as deflationary. ..."

Allen (1993, n. 21 p. 709) quotes a December 14, 1934 reply from Fisher to Simons, showing that Fisher did not share these concerns:

> "savings deposits turn over very slowly and are dislodged in any large volume only by some big force. ... It seems to me quite preposterous to consider savings deposits as on all fours, or very similar to deposits subject to check. ... The statistical fact is that anything held for interest does not circulate as fast as what bears no interest. ... I have not seen anything in any of your statements so far which would seem to me to justify your fears in regard to savings accounts."

Allen (1993, 709)notes another difference between Simons and Fisher; Simon's warned against distinguishing "too sharply between monetary policy and fiscal policy." Simons favored using government deficits financed by money creation (or retiring long term debt with money creation) to expand the money supply when necessary whereas Fisher favored open market operations.

Early in his career, Milton Friedman (1948), in "A Monetary and Fiscal Framework for Economic Stability," advocated for a 100 percent reserve requirement and the elimination of discretionary control of the money supply by the central bank:

> The private creation of money can perhaps best be eliminated by adopting the 100 per cent reserve proposal, thereby separating the depositary from the lending function of the banking system. The adoption of 100 per cent reserve would also reduce the discretionary powers of the reserve

system by eliminating rediscounting and existing powers over reserve requirements. To complete the elimination of the major weapons of discretionary authority, the existing powers to engage in open-market operations and the existing direct controls over stock market and consumer credit should be abolished. (Friedman 1953, 135-136)

Like Simons, this plan linked monetary policy to fiscal policy: "the chief function of the monetary authorities [would be] the creation of money to meet government deficits or the retirement of money when the government has a surplus." (Friedman 1953, 136) Under Friedman's policy both monetary and fiscal policy would provide automatic stabilizers, but there would be no discretionary counter-cyclical policy changes:

> [Tax] rates, exemptions, etc., should be set in light of the expected yield at a level of income corresponding to reasonably full employment at a predetermined price level. The budget principle might be either that the hypothetical yield should balance government expenditures, including transfer payments (at the same hypothetical level of income), or that it should lead to a deficit sufficient to provide some specified secular increase in the quantity of money. The tax structure should not be varied in response to cyclical fluctuations in business activity, though actual receipts will, of course, vary automatically. (Friedman 1953, 137-138)

Friedman also advocated a 100 percent requirement for demand deposits in *A Program for Monetary Stability* (Friedman 1960). One of Friedman's concerns with fractional reserve banking was that the money supply depended in part on decisions by households and banks that affected the currency-deposit ratio and the reserve-deposit ratio. This would not occur under his preferred policy which would

> require any institution which accepts deposits payable on demand or transferable by check to have one dollar in high-powered money for every dollar in deposit liabilities ... , that is, to have 100% reserves. The total of money and of high-powered money would then be the same. Shifts between deposits and currency would have no effect on the total stock of money and banks could not alter the ratio of deposits to reserves. The

> result would be to remove completely any instability in the stock of money arising from these sources. Since all money would in effect become a government obligation, there would be no need for federal insurance of bank deposits. 100% reserves would achieve its objectives more effectively and with less intervention into private activities. (Friedman 1960, 69)

Friedman (1960, 21)called federal deposit insurance "the most important structural change in our monetary system in the direction of greater stability since the post-Civil War tax on state bank notes." However, although "widespread liquidity crises involving runs on banks, banking panics, suspension of convertibility of deposits into currency, and, in the 1930-33 episode, drastic liquidation and and ultimately collapse of the banking system ... have now been rendered most unlikely by federal insurance of deposits," he was concerned that federal deposit insurance has exacerbated another problem because deposit insurance "involves a substantial increase in governmental intervention into the lending and investing process." (Friedman 1960, 67-68)

Although he still advocated a 100 percent reserve requirement for demand deposits, Friedman's position on several other aspects of monetary policy in 1960 differed from Simon's proposals and the position that Friedman had taken in 1948. In 1960 he considered open market operations to be "the most efficient instrument" of monetary policy. (Friedman 1960, 50) Despite seeing no valid argument for issuing government securities with a variety of maturities, Friedman (1960, 63) advocated that the Treasury should issue

> ... all remaining debt [in addition to savings bonds] in two standard forms, one short-term to provide for seasonal needs, the other moderately long-term. The short security might be a 90-day bill or any other comparable maturity that was convenient. The longer-term security might best be a consol – that is, a perpetuity – but this is very much out of line with American experience. A less extreme break would be to make it, let us say, an eight- or ten-year maturity when issued. I do not myself believe that the precise maturity of the debt outstanding is of great significance. The length of the maturity does affect the demand for money and therefore has monetary implications. Depending on

> the maturity, the amount of money outstanding for a given price level, or alternatively the price level for a given amount of money will differ.

Like Simons, Friedman continued to advocate policies governed by rules rather than discretion of monetary authorities. However, he no longer advocated a rule linking monetary and fiscal policy. Referring to his 1948 proposal linking monetary growth to budget deficits, Friedman (1960, 90) wrote

> ... I have become increasingly persuaded that the proposal is more sophisticated and complex than is necessary, that a much simpler rule would also produce highly satisfactory results and would have two great advantages: first, its simplicity would facilitate the public understanding and backing that is necessary if the rule is to provide an effective barrier to opportunistic "tinkering"/ second, it would largely separate the monetary problem from the fiscal and hence would require less far-reaching reform over a narrower area.
>
> The simpler rule is that the stock of money be increased at a fixed rate year-in and year-out without any variation in the rate of increase to meet cyclical needs.

Tavlas (2015, 106) argues that

> The basis of Friedman's conversion from a Simons-type rule, under which fiscal measures would be used to generate changes in the money supply with the aim of attaining either full employment and/or a stable price level, to a rule under which the Fed would use open market operations to target a constant growth rate of the money supply, was his capacity and proclivity to apply statistical analysis to economic data.

Tavlas (2015, 107)concludes that "the results of [Friedman's] empirical research from the late-1940s to the late-1950s were largely responsible for his switch to a monetary growth rule."

V. KOTLIKOFF'S PROPOSAL FOR LIMITED PURPOSE BANKING

In the aftermath of the 2008 financial crisis, Laurence Kotlikoff has advocated a "limited purpose banking" proposal which would impose a 100 percent reserve requirement on checking accounts along with other limitations on financial intermediaries (which Kotlikoff refers to as "banks").

(Kotlikoff 2010; Kotlikoff 2012; Chamley, Kotlikoff and Polemarchakis 2012) As Kotlikoff (2010, 123-124) describes his proposal:

> Under limited purpose banking, all *banks* – all financial and insurance companies with limited liability (e.g., C-corps, S-corps, LLPs) that are engaged in financial intermediation – would operate as *pass-through* mutual fund companies, which sell mutual funds – safe as well as risky collections of securities. That is, the banks would simply function as middlemen. They would never themselves own financial assets or borrow to invest in anything except those specific assets, such as computers, office furniture, and buildings, needed to run their mutual fund operations. Hence, banks would never be in a position to fail because of ill-advised financial bets.

Limited purpose banks could sell any type of mutual fund including commercial paper funds, credit card debt funds, junk bond funds, but "at a minimum [limited purpose banking] would include two additional types of mutual funds – cash mutual funds and insurance mutual funds" (Kotlikoff 2010, 126) Kotlikoff's proposal for "insurance mutual funds" is described briefly in Kotlikoff (2012, 334-335) and Chamley, Kotlikoff and Polemarchakis (2012, 116)and at greater length in Kotlikoff (2010, 136-150), but will not be discussed further in this paper.

Cash mutual funds would hold only cash. Thus, according to Kotlikoff 2010, 131) they

> ... would obviously be valued at $1 per share and could, therefore, never break or exceed the buck. All other funds, including today's money market funds, could and would break or exceed the buck based on fluctuations in market valuations.
>
> Owners of cash mutual funds would be free to write checks against their holdings, use debit cards to access their cash from ATM machines, and use debit cards to pay for purchases online or in stores. These cash mutual funds would thus represent the demand deposits (checking accounts) under limited purpose banking.

Under the 100 percent reserve requirement described in Kotlikoff (2010, 132) and Chamley, Kotlikoff and Polemarchakis (2012, 115), cash mutual funds

would hold only cash, and M1 would be equal to the monetary base giving the Federal Reserve complete control over the money supply. However, Kotlikoff (2012, 330) suggests that cash mutual funds might hold "cash or U.S. Treasuries." Under this version of Kotlikoff's proposal, "reserves" would include T-bills held by cash mutual funds as well as vault cash and deposits at the Federal Reserve, and M1 would not be equal to the monetary base as currently defined.

Kotlikoff (2010, 133-134) acknowledges the similarity of his proposal to earlier proposals requiring 100 percent reserves for checkable deposits, but he distinguishes these "narrow banking" proposals from limited purpose banking:

> Narrow banking is a small feature of limited purpose banking and would hardly suffice to deal with today's multifaceted financial problems. The problem is not that banks are borrowing just from those with FDIC-insured deposits and then gambling, at our potential expense, with simply those borrowed funds. The problem is that banks are *also* borrowing from many other lenders (including sovereign nations) whose loans are implicitly guaranteed by our government because the banks individually or as a group are too big to fail.

Note that this borrowing from other lenders would be restricted by the limitation noted above, that banks "would never themselves own financial assets or borrow to invest in anything except those specific assets . . . needed to run their mutual fund operations."

Kotlikoff (2010, 124) claims that limited purpose banking "offers a way to reform our financial system with the least possible intrusion by the federal government in what are ultimately private financial matters and decisions." By effectively requiring 100 percent reserves on checking accounts, it eliminates the need for deposit insurance, the possibility of bank runs and the need for capital requirements. (Kotlikoff 2010, 132) However, Kotlikoff's proposal does include one new regulatory agency, the "Federal Financial Authority," to replace all existing federal and state financial regulators. This agency "would verify, supervise custody, fully disclose, and oversee the rate and trades of all securities purchased, held,

and sold by the LFB mutual funds." (Kotlikoff 2010, 126-127)

Chamley, Kotlikoff and Polemarchakis (2012, 115)identify "limiting proprietary information via compulsory disclosure and eliminating leverage" as "the key to having a stable, well-functioning financial system." Limited purpose banking eliminates leverage in the financial system by requiring 100 percent reserves for checkable deposits and by making all other financial intermediaries pass-through mutual funds.

The Federal Financial Authority would deal with information problems in several ways. First, it would "oversee third-party custodial arrangements of all mutual funds" (Kotlikoff 2010, 128), eliminating fraudulent practices such as Bernie Madoff's taking cash from investors but not investing it in assets that would generate income for those investors.

Information on individual loan applications would be verified by the Federal Financial Authority, which would hire private rating companies to rate the loan. The FFA would disclose all information about the loan except the identity and precise location of the borrower, and the loan would then be put up for public auction. Only when the loan was purchased would the borrower receive any funds. All securities purchased by limited purpose banking mutual funds would follow a similar process. (Kotlikoff 2010, 127; 2012, 336)

Despite Kotlikoff's (2010, 124) claim that his proposal "offers a way to reform our financial system with the least possible intrusion by the federal government," his proposed Federal Financial Authority has been severely criticized by O'Driscoll (2010) and Henderson (2010-2011) among others. To this author the oversight of third-party custodial arrangements seems unobjectionable although the proposals requiring information disclosure and independent private rating of all securities deserve further analysis of the benefits and costs.

VI. IMPLICATIONS FOR MONETARY POLICY TODAY

As discussed above, Simons was greatly concerned with the difficulties that "near moneys" made for implementing monetary policy. This problem became greater in the 1980s. Money market mutual funds had grown from $3.7 billion in 1975 to $45.2 billion by the end of 1979 (Cargill and Garcia 1985, 49). The Depository Institutions Deregulation and Monetary Control Act of 1980

authorized banks, savings and loans, and mutual savings banks to offer NOW accounts beginning in 1981, and credit unions were permitted to offer similar share draft accounts (Cargill and Garcia 1985, 59). The Garn-St. Germain Depository Institutions Act of 1982 authorized these depository institutions to offer money market deposit accounts (Cargill and Garcia 1985, 67). Cargill and Garcia (1985, 65) noted that "financial innovation, both regulator- and market-induced, blurred the distinction between the various monetary aggregates, thus making the monetary-aggregate-targeting approach more complex to implement."

In a September 1981 *Newsweek* column, Friedman commented that "Institutional change, notably the explosion in money-market mutual funds, has rendered narrow monetary aggregates misleading." (quoted in Nelson 2007, 162) Although Friedman and Schwartz (1963) had used M2 as their measure of the money supply, Nelson (2007, 163) attributed Friedman's 1982 switch to using M1 to the fact that "M1 gave a more unambiguous picture of tight money over 1981 and into 1982 than did M2, and so gave an accurate signal both of the severe 1981-82 recession and the 1982-83 decline in inflation." However, Nelson (2007, 163) also noted that because of the switch to M1 "from 1982 to 1985, Friedman repeatedly predicted a major revival of inflation that never occurred." According to Nelson (2007, 167), "Friedman came to see the closeness of M1 to GNP from 1981 as a 'hot streak' that ended in 1984 and judged that M1 was, in fact, more distorted by financial innovation than other aggregates – i.e., the monetary base and M2."

Leijonhufvud (2015, 183-184) also noted that "Deregulation and financial innovations had combined to render the velocity of various monetary aggregates increasingly unpredictable." Rather than having monetary policy target an interest rate, he "would have the Fed retake control of the monetary base" and "tie demand liabilities of all sorts – that is, not just bank deposits but also deposits with money market funds – to the monetary base by reserve requirements." (Leijonhufvud 2015, 186)

Carlson and Keen (1996, 21) argued that "deregulation and financial innovation have wreaked havoc on the relationship of traditionally defined money measures with economic activity and interest rates." They used an

alternative monetary aggregate, MZM, equal to M2 minus small time deposits plus institutional money market mutual funds, and found that MZM "exhibited a stable relationship with nominal GDP and with its own opportunity cost." However, they also found that the sensitivity of MZM demand to changes in its opportunity cost made it "not particularly well suited to being an intermediate target."

Barnett (2016, 268) identifies the problem with using any simple aggregates as measures of the "money supply":

> The traditionally constructed high-level aggregates (such as M2, former M3, and former L) implicitly view distant substitutes for money as perfect substitutes for currency. Rather than capturing only part of the economy's monetary services, as M1 does, the broad aggregates swamp the included monetary services with heavily weighted nonmonetary services.

Furthermore

> Movements of the official aggregates could have stable relationships with actual structural variables, such as the inflation rate, only if the aggregates' components were perfect substitutes ...
> Misperceptions about the stability of money demand have played a major role in the profession's move away from the views of Milton Friedman on monetary policy. But current views about money demand instability are not based on accepted methodology in the literature on consumer demand systems. (Barnett 2016, 284)

Barnett (2016) shows that demand for money measured by Divisia monetary aggregates is stable. Barnett (2016, 285) reports another study showing "that augmenting a typical Taylor with a reaction to Divisia money growth improves welfare when the financial sector is a source of shocks driving the economy."

Although a Divisia monetary aggregate might exhibit stable relationships with other variables such as the inflation rate and might serve well as an intermediate target for monetary policy, it would vary based on decisions of households to substitute "near moneys" for M1 and it would not be completely controlled by monetary policy.

Kotlikoff (2010, 133) describes himself as "neither a Keynesian nor a

Monetarist," but he notes that

> ... under limited purpose banking, M1 would be fully determined by the government, so that the Friedman-Schwartz concern about the government losing control of the money supply and, thus, the economy's price level and performance, *to the extent that it's valid*, would not arise. (Kotlikoff 2010, 135) [emphasis in the original]

The fact that Kotlikoff is not a Monetarist may explain why his proposal does not do more to limit near money. Under limited purpose banking, although only cash mutual funds would have a fixed nominal value of $1 per share and could be used as a means of payment by check or debit card, other mutual funds could be invested in Treasury bills or commercial paper. Mutual funds invested in such short-term assets would still serve as close money substitutes. If a broader notion of the "money supply" than M1 is relevant to monetary policy, Kotlikoff's proposal would not give the monetary authority the complete control over the "money supply" as would Simons's ideal of eliminating all short-term debt. The existence of short-term securities is evidence that they have some value to individuals. Whether those benefits are worth the cost of possibly less effective monetary stabilization policy is a question for further discussion.

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TABLE 1

COMPARISON OF THE MARCH AND NOVEMBER 1933 “CHICAGO PLANS”

March 1933	November 1933
1. Federal government ownership of the Federal Reserve Banks	1. Federal government ownership of the Federal Reserve Banks
2. Federal Reserve Bank guarantee of deposits of member banks open on March 3, 1933, with full control of the management of those institutions	2. Exclusive power to charter deposit banking (with rigid limits on negotiability of non-interest-bearing obligations)
3. Amendment of the Federal Reserve Act to permit issue of Federal Reserve notes to meet demands for payment by member-bank depositors	3. Withdrawal of powers to engage in deposit banking from existing corporations after two year transition
4. Federal Reserve notes declared legal tender	4. Requirement of 100 percent reserves for new deposit banks
5. Arrangements for relief of non-member institutions not covered by the guarantee	5. Abolition of reserve requirements for notes and deposits of Federal Reserve Banks
6. Liquidation of member banks	6. Displacement of private-bank credit as a circulating medium by additional credit of Federal Reserve Banks during a two-year transition period
7. Legislation providing for incorporation of new deposit banks subject to a 100 percent reserve requirement	7. Displacement by Federal Reserve Bank notes and deposits of all other currency in circulation (including silver and gold coins and certificates)
8. Legislation providing for incorporation of investment trusts providing savings deposit services	8. Legislation prescribing an explicit rule of monetary policy (with some preference for fixing the quantity of money), leaving the Federal Reserve as an administrative body with no broad discretionary policy
9. Losses from liquidating member banks should be collected from stockholders of those banks	9. Legislation instructing the Federal Reserve to maintain open-market operations during a transition period to achieve a specified price level at the end of the transition period
10. Announcement of a policy using fiscal and currency measures to increase wholesale prices by 15%	
11. Measures to prevent inflation above the announced goal	
12. Exchange of Federal Reserve notes for gold coins and certificates, etc.	

Sources: Frank H. Knight, “Memorandum on Banking Reform.” (March 16, 1933) Franklin D. Roosevelt Presidential Library, *President’s Personal File 431*. Pp. 191-198 in Ronnie J. Phillips, The Chicago Plan & New Deal Banking Reform. Armonk, NY: M.E. Sharpe, 1995.
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TABLE 2
POLICIES ADVOCATED IN SIMONS'S LATER WRITINGS

Constant money supply rule for monetary policy (Simons 1933)

Monetary policy through budget surpluses or deficits rather than open market operations (Simons 1933, 1934, 1936a)

All-equity financing of private business ideal (Simons 1934, 1936a)

Eliminate short-term debt-financing of private business and government with consols (Simons 1934, 1936a, 1944)

Price stabilization rule for monetary policy (Simons 1936a, 1936b, 1944)

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