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**ABSTRACT**

To consider the prospects, looking 20-30 years into the future, for monetary policymaking in accordance with policy rules, one must evaluate their present importance. That requires some definition of what constitutes rule-based monetary policy in practice, since no actual central bank will ever be literally bound by any simple formula (or any strict optimal control scheme). Consideration of the rules-versus-discretion literature, plus more recent analysis by Woodford (1999), indicates that rule-based policy is conducted to satisfy relationships specified from a “timeless perspective.” Given this conception, it seems reasonably clear that today’s prominent regimes (e.g., inflation targeting) do largely represent rule-based policymaking. Whether these will prevail into the future will depend in part on political trends, but their fundamental soundness gives room for hope. Regarding the effects of a gradually diminishing role of money, it would appear that the feasibility and attractiveness of rule-based policymaking will not be seriously impaired so long as a tangible medium of exchange has some importance, even if small. In the complete absence of monetary transactions, there would be no monetary policy of any type, rule-based or discretionary. But it seems highly unlikely that money will disappear in the foreseeable future.

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## I. Introduction

The purpose of this paper is to consider the prospects, looking into the future, for monetary policymaking in accordance with policy rules. Is rule-directed policymaking going to play a larger or smaller role in central bank policy processes as we move 20 or 30 years into the new millenium? In thinking about that issue, it seems necessary to begin with an evaluation of the status of monetary policy rules in the present. Do such rules play an important role today in the policymaking processes of actual central banks? Or do they exist primarily in the imagination of a few deluded academics?

Currently the prominence of inflation targeting as a policy process is very high: inflation targeting is officially practiced by several important or influential central banks, is under consideration at others, and is being promoted by several prominent economists—and perhaps implicitly by the International Monetary Fund. Consequently, to evaluate the current role of policy rules we need to take some position regarding the status of inflation targeting regimes: are they more nearly rule-based or discretionary in nature? It turns out that there is considerable disagreement on this issue being expressed in the literature and at conferences. As a result, consideration of the role of policy rules becomes entangled with other issues regarding inflation targeting. Furthermore, the task of untangling these issues, and evaluating the current situation, is difficult enough that it will occupy much of the present paper. A few words will be added, nevertheless, regarding the future—including the consequences for rules of a gradual disappearance of any tangible medium of exchange from developed economies, in case such a disappearance were to progress significantly over the next 20-30 years.

## II. Inflation Targeting: Rule or Discretion?

In March 2000, I participated in a two-day conference at the International Monetary Fund (IMF), put on by the IMF Institute and entitled “High-Level Seminar: Implementing Inflation Targets.” The conference began with two overview papers by academics<sup>1</sup> and continued with authoritative presentations by economist-managers from the central banks of Canada, New Zealand, and the United Kingdom concerning their well-established inflation targeting regimes.<sup>2</sup> Then there were papers by economist-managers from the central banks of Israel, Mexico, and Brazil<sup>3</sup> and some concluding remarks by Leo Leiderman. After each of the papers there was a presentation by a formal discussant and a significant quantity of general discussion. Now, in all of this there was no statement to the effect that inflation targeting constitutes rule-based policymaking and there were certainly several emphatic statements to the effect that it reflects a discretionary approach to monetary policymaking. To me, this seemed quite strange since my own highly positive attitude toward inflation targeting reflects a belief that it provides a good, practical way of implementing a policy approach that has the essential features of a desirable policy rule—in particular the avoidance of the inflationary bias that characterizes discretionary regimes, according to most of the literature.

Why was there such a discrepancy between the statements of these experts and my own views? Of course incompetence on my part is one logical possibility but I prefer another explanation. It is that when these statements about the discretionary nature of inflation targeting were being made, the actual meaning was merely that in practice no

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<sup>1</sup> The presented papers were McCallum (2000) and Svensson (1999a).

<sup>2</sup> See Freedman (2000), Archer (2000), and Haldane (2000).

<sup>3</sup> See Leiderman and Hadas Bar-Or (2000), Carstens and Werner (2000), and Bogdanski, Tombini, and Werlang (2000).

inflation targeting regime has turned policy decisions over to a clerk armed with a simple formula and a hand calculator—or even to a team of PhD economists armed with computers and Matlab routines. The speakers were concerned, that is, to assure economist-managers from central banks not yet practicing inflation targeting that to switch to such a regime would not result in massive layoffs among central bank analysts or the loss of decision making authority for high-level individuals. In other words, I believe that these speakers were implicitly relying upon a different definition of “discretion” than the one that I had in mind.

In that regard, it is my impression that even the most enthusiastic promoters of rule-based policymaking do not contemplate that central banks would turn the selection of instrument settings over to a clerk/calculator.<sup>4</sup> One reason for the great success of Taylor’s (1993) famous paper is precisely that it emphasized that point. But it seems clear that this is not the question of interest regarding policy rules of the present or the future. The question, instead, is whether actual practices by the Reserve Bank of New Zealand, the Bank of England, and others conform more nearly to analytical characterizations of discretionary or rule-based policymaking. After all, the analytical version of discretion depicts central bankers as implementing the prescription of an optimal control algorithm, which is just as remote from reality as the clerk/calculator characterization. We need, then, to consider these formulations—which are intentionally highly simplified in comparison with the messy complexity of reality.<sup>5</sup> What are the

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<sup>4</sup> The implausibility of central banks literally conducting policy in accordance with some simple formula is, I would guess, what Bernanke, Laubach, Mishkin, and Posen (1999, p.5) have in mind when they suggest that “*there is no such thing in practice as an absolute rule for monetary policy*” (italics in original).

<sup>5</sup> Bernanke, Laubach, Mishkin, and Posen (1999) have characterized inflation targeting as a policy framework that may be termed “constrained discretion” and which “*combines some of the advantages traditionally ascribed to rules with those ascribed to discretion*” (1999, p. 6, italics in original). Thus they implicitly reject the usefulness of a rules-vs.-discretion dichotomy. There is some merit to that position,

basic analytical distinctions between rules and discretion that we should look for in actual practice?

### III. Analytical Distinction Between Rules and Discretion

Another way to present the issue is to ask how one might distinguish rule-based from discretionary policy behavior in practice, recognizing that no actual central bank would ever follow literally a simple formula or optimal-control prescription for its instrument settings. This problem has been addressed, but not solved, by Taylor (1993) and McCallum (1993, 1999). The key, Taylor suggested, is that rule-based policy behavior is systematic, in the sense of “methodical, according to a plan, and not casual or at random.” McCallum (1993) agrees that this condition is necessary but argues that it is not sufficient, for a central bank can be systematic—i.e., respond the same way each time the same conditions arise—and yet be discretionary in the analytical sense. In theoretical analyses the distinction, recognized by most monetary economists since publication of Barro and Gordon (1983), is between the following:

- (i) Responding to prevailing conditions as prescribed by a prearranged formula that specifies instrument settings. The formula’s design may be based on optimizing analysis but is not itself influenced by current conditions.
- (ii) Period-by-period optimization that takes account of current conditions while treating past experiences and policies as irrelevant bygone.

In principle, concept (ii) requires an objective function and a model. These may be largely implicit, perhaps, but a clear sense of the relative importance of inflation and the output gap in the central bank’s objectives seems to be crucially necessary. In this

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but I find it useful to consider which of the two concepts predominates, along the lines suggested below. That the dichotomization appeals to many analysts is suggested by the remarks that are referred to above.

existing literature, which is enormous, it is emphasized that, if the central bank's target value for output is greater than the natural-rate value that enters the price adjustment relationship, then the equilibrium outcomes will feature an inflationary bias. On average, that is, the inflation rate will exceed the central bank's target value (by an amount proportional to the excess of the output target over its natural-rate value).

But an important and previously unemphasized point has been brought out in recent papers by Clarida, Gali, and Gertler (1999), Jensen (1999), Svensson and Woodford (1999), and especially Woodford (1999). It is that there is likely to be another inefficiency created by discretionary policymaking (period-by-period reoptimization), even if the central bank's target value for output does not exceed the natural-rate value. This second inefficiency will prevail if the price adjustment relation is forward-looking, in the sense that the inflation rate determined in any period depends upon current expectations of future inflation rates.<sup>6</sup> Price adjustment specifications of this type are not rare; indeed, they are predominant among analysts who attempt to provide optimizing foundations for the behavioral relations in their models. Thus the popular Calvo (1983)-Rotemberg (1982) specification is of this type, and the well-known Fuhrer-Moore (1995) specification is as well, even though its optimizing rationale is not so well developed.

Besides emphasizing this second inefficiency, Woodford's discussion is helpful in clarifying the basic analytical distinction at issue. In the traditional account (i), a rule must be expressed in terms of an instrument and is sometimes described as resulting from

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In any case, my assigned topic was to write about the future of rules, and for that task I need a definition!

<sup>6</sup> The traditional analysis uses a specification in which inflation depends upon the previously-held expectation of the current inflation rate.

a once-and-for-all choice. But Woodford discusses a type of periodic<sup>7</sup> optimization that leads to rule-based behavior because it is based on a “timeless perspective.” That is, each period’s optimization is conducted as if current macroeconomic conditions were not known; as if the optimization had been made in the distant past (as far as the state of the economy is concerned). A crucial feature of this procedure is that it involves no internal dynamic inconsistency; if the optimization is conducted in period  $t$  the values chosen are related to current conditions in the same way as was expected to be the case in the previous period,  $t-1$ . Thus the basic distinction between rule-based and discretionary behavior is that the former ignores current conditions in designing the relationship of variables to current and past conditions, whereas the latter does not ignore current conditions and treats past conditions as bygones.<sup>8</sup>

It is important to note that, as Woodford emphasizes, adoption of the timeless perspective approach does not eliminate the possibility of alterations in the rule when new information suggests that the central bank’s understanding of the economy—its model—needs revision.<sup>9</sup> In Woodford’s words, “what is important is not that the central bank never reconsider its pattern of conduct, but that it adopt a “timeless perspective” when considering it” (1999, p. 19).<sup>10</sup>

One interesting aspect of this analysis with forward-looking models is that it reveals a difference between rule-based policy, which is based on a timeless perspective, and commitment solutions. In the traditional model of the Barro-Gordon type, there is no

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<sup>7</sup> In Woodford’s presentation a new optimization each period is presumed. But the argument is applicable to occasional reoptimizations, and in practice this is what one would expect from actual central banks.

<sup>8</sup> Except for past variables that are part of the current state vector, such as the existing capital stock.

<sup>9</sup> Therefore, current data can be used in model estimation and can be responded to by the rule. It is only the optimization process of deriving the rule (or condition) that needs to be independent of current conditions.

<sup>10</sup> Thus Woodford is right to criticize my (1999, p.1487) statement that a rule requires the central bank to “optimize once, not each period.”



significant linkage between periods and as a result the commitment solution is the same as the solution obtained with timeless-perspective optimization except in the start-up period. In models with forward-looking price adjustment behavior, by contrast, these two solutions are quite different. The commitment solution depicts the central bank as making choices for present and future instrument settings at some particular point in time, and then implementing those values as time passes. But the choice takes account of start-up conditions that happen to prevail at the time, and the choices made for future periods would be overturned if the central bank were to optimize again when those periods arrive. Thus there is dynamic inconsistency from the perspective of this decision process itself. This type of commitment therefore provides a highly unattractive basis for economic analysis. One reason for that judgement is that the assumption of rational expectations is plausible only for policy regimes that have been in place long enough for private agents to observe and understand policy behavior. As argued by Lucas (1980, esp. p. 204) and others, the basic rational expectations approach is appropriate only for analysis of ongoing policy regimes, not the transition between regimes. To me, it seems highly implausible that private agents could immediately begin forming expectations consistent with policy behavior following a regime change, as would be implied by use of the commitment equilibrium concept.

Optimization from a timeless perspective does not lead to an inflationary bias, even in forward-looking models in which the central bank's objective function favors output in excess of the natural rate (Woodford, 1999). Furthermore, the timeless perspective approach shares the same spirit as traditional descriptions of rule-based

policy.<sup>11</sup> Thus the timeless perspective analysis may be thought of as typifying rule-based policymaking. That still leaves open the question, however, of whether rule-based policymaking must be expressed in terms of an instrument rule.

This issue concerns the distinction, introduced and stressed by Svensson (1997, 1999a, 1999b), between targeting rules and instrument rules. The latter concept is familiar; the former prevails when an objective function is specified and the central bank optimizes in an ostensibly discretionary fashion, period by period, with respect to this objective function.<sup>12</sup> If these conditions are met, and there is reasonable continuity in the central bank's operative model of the economy, then it seems clear that the process should be regarded as systematic. But does it constitute policymaking according to a rule? Svensson evidently would argue that the answer is "yes," but he would have a loss function specified that does not feature any discrepancy between the central bank's output target and its natural-rate value, so that there will be no inflationary bias, even if its true preferences do imply such a discrepancy (Svensson, 1999a, p. 626 ; 1999b, p. 8). At this stage, the central bank is taking a long-term point of view in a fashion that is to some extent related to the adoption of a timeless perspective. Thus it seems terminologically defensible to describe the process as conforming to a rule, provided that it is steadily maintained for a substantial period of time (e.g., at least two or three complete business cycles).<sup>13</sup> But I will not do so, for that would blur the distinction excessively.

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<sup>11</sup> For example, McCallum (1999, p. 1487) says, regarding rule-based policy, that "basically, the optimization calculation must be made from the perspective of a dynamic stochastic steady state."

<sup>12</sup> See Svensson (1997, 1999a, 1999b)

<sup>13</sup> There is, however, some question as to the sustainability of a rule that does not reflect true central bank preferences.

Svensson would argue that a targeting rule procedure is superior normatively to an instrument rule, and also superior in the positive sense that actual inflation targeting procedures now in place represent target-rule implementations. My own reaction to these suggestions is to disagree. My reading and discussions concerning the procedures of the central banks of Canada, New Zealand, and the United Kingdom suggests the presence of instrument rules that adjust interest-rate instruments upward (or downward) when the inflation forecasts for a date 6-8 quarters in the future lie above (below) the central bank's specified target for inflation (or its midpoint, if the target is expressed as a range).<sup>14</sup> Some inertia in the interest rate—i.e., interest rate smoothing—may also be present. Furthermore, for a targeting rule to be in force, the central banks would have to have adopted an objective function and none has been announced for any of the banks in question. Given these banks' emphasis on transparency, it then seems unlikely that any such adoption has in fact taken place. Consequently, it is my contention that actual inflation-targeting central banks are not engaging in period-by-period optimization based on prevailing conditions.

In sum, for a monetary policy procedure to be regarded as rule-based, it needs to be either (i) an instrument rule<sup>15</sup> or (ii) an optimization routine designed in a manner that takes a timeless perspective by ignoring the particular conditions that happen to prevail at the moment. Some analysts might also include (iii) the adoption (for the purpose of period-by-period optimization) of an objective function that does not include an output target that exceeds the natural rate of output, but my definition will not. The common feature of procedures (i) and (ii) is that both avoid the temptation to exploit existing

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<sup>14</sup> See, for example, Fillion and Tetlow (1994), Drew and Hunt (1999), and Batini and Haldane (1999).

<sup>15</sup> Or a set of optimality conditions that imply the specified instrument settings.

conditions for temporary output gains. It seems clear, from all accounts, that the policy procedures of the notable inflation targeting economies have that feature—and the same is true for the procedures of the European Central Bank and Japan (whatever any other weaknesses might be). Thus today’s predominant framework for monetary policymaking is substantially of a rule-based type from the analytical point of view, despite statements characterizing it as discretionary.

#### **IV. The Future**

But will today’s rule-based procedures continue to prevail in the future? Let us first consider that question from a point of view that ignores possible trends, emphasized by Friedman (1999), that involve the gradual disappearance of monetary transactions.<sup>16</sup> In this case the analysis depends upon the inherent desirability of today’s procedures and upon political economy issues. An adequate analysis of either of these is beyond the scope of the present study. But I will offer, very briefly, the personal judgement that today’s inflation targeting regimes appear relatively well designed from a historical perspective. They are widely regarded as superior to the incoherence that prevailed in monetary policy practice and analysis after the breakdown of the Bretton Woods system in 1971-1973 and before inflation targeting became popular. But what about the Bretton Woods regime and those of earlier periods? My answer would be that a Bretton Woods-type regime of fixed but adjustable exchange rates is not feasible with open financial markets, and that attempts to prevent open financial markets are highly undesirable. As for the eras prior to Bretton Woods, monetary policy then consisted essentially of maintaining a commodity-money standard, typically based on gold or silver or a bimetallic combination. Such regimes are reasonably successful in preventing severe

inflation, but permit a lot of year-to-year variability and do not have very good stabilizing properties with respect to output and employment. Given today's views of appropriate central bank objectives, today's policy rules seem clearly preferable to commodity-money rules of the pre-Bretton Woods type.

What about the political sustainability of today's policy rules? I have almost nothing to say on that issue, except that sustainability would seem to be enhanced by fairly large doses of transparency and central bank independence, and by central bank objective functions that are consistent from a long-term perspective with those of the nation's citizens. I would have no faith in "solutions" that involve the designation of central bank leaders who have preferences that are fundamentally different from those of the citizens, presuming that we are discussing democracies.

## **V. More Distant Future**

Let us now take up some of the concerns voiced by Friedman (1999) regarding possible loss of central bank control (over aggregate demand conditions) as the role of money—i.e., a tangible medium of exchange—diminishes. The basic idea is that central banks' control depends upon their position as monopoly suppliers of government-sanctioned currency, which serves as an economy's primary medium of exchange upon which other monies are claims. So, as the role of tangible media of exchange diminishes in favor of bookkeeping transactions that do not require money, a central bank's leverage over private spending will—so the argument goes—progressively decline and finally disappear.

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<sup>16</sup> Actually, Friedman (1999) stresses the disappearance of bank reserves rather than currency.

There are various points that deserve to be made concerning this line of argument. One fairly obvious one is that the pace of technological innovations, that serve to reduce the demand for money, is significantly endogenous and can be expected to be slower in an era in which inflation is lower than over (say) 1965-1985. Next, Woodford (1998) has shown analytically<sup>17</sup> that when monetary policy is conducted by means of an interest rate instrument, then the behavior of the price level approaches a well-behaved limiting function as the fraction of transactions conducted with money approaches zero. He therefore argues that:

Analysis of the cashless limit ... makes it clear that improvements in the efficiency of financial arrangements that reduce or destabilize the demand for the monetary base need not be a source of macroeconomic instability. Once one specifies monetary policy in a way that makes the cashless limit well behaved, it becomes possible to separate the problems of the desirable regulation of the payments system [from] the desirable conduct of monetary policy (Woodford, 1998, p. 218).

An objection to Woodford's conclusions has been expressed by Buiter (1998), along the following lines. Woodford's limiting process considers sequences with progressively smaller fractions of exchange being intermediated via money. But this is a sequence of different economies, not a sequence proceeding through time for a single economy in the face of a diminishing role for money. To me, that observation seems correct but not to constitute a telling objection. What we do want to know, I would think, is how an economy operates (through time) when it has a very small (but positive) reliance on monetary transactions. In other words, we want to know what its stochastic steady-state behavior is like; what its "operating characteristics" are. And Woodford's analysis would seem quite relevant to that question. Specifically, the limiting case should in principle

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<sup>17</sup> For a specific model, of course, but one that is representative of much current analysis.

provide a good approximation to the behavior of an economy with a very small fraction of monetary transactions.<sup>18 19</sup>

Nevertheless, I would emphasize that Woodford's "cashless limit" does not provide a model of how an economy would function in the complete absence of monetary transactions.<sup>20</sup> Such an economy would not be a monetary economy, even if the computerized accounting system of exchange is highly efficient. The "price level" in such a system cannot be the inverse of the purchasing power of money, as it is in a monetary economy with only a small fraction of transactions conducted by money, since there is no such thing as money. Nor is the  $k$ -period nominal interest rate the relative price of using money for  $k$  periods. Nor is it the case that "the central bank controls [the one-period nominal interest rate] by intervening in the market for short-term nominal debt ... by simply [standing] ready to exchange debt for money in arbitrary quantities at the price level that it has decided upon" (Woodford, 1998, pp. 193-4).

What then is the price level in a non-monetary economy? It seems reasonable to conjecture that in such an economy there would typically be a generally accepted medium of account, even though there is no medium of exchange. For there would continue to be a great saving in transaction costs from having a generally accepted unit of account in which prices would be quoted. Then the price level could be defined as the inverse of the value of the medium of account relative to goods in general. There would

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<sup>18</sup> This statement presumes that the model used by Woodford (1998) does not bias the outcome. It might, however, since it does not recognize the existence of various types of one-period claims. It might be that the linkage between the one-period instrument rate and long-term rates of return on capital would be less secure in conditions approaching the cashless limit. Analysis of that issue would require a more disaggregated model.

<sup>19</sup> Marvin Goodfriend has pointed out to me that use of an interest rate instrument began partly to permit easy accommodation of temporary shifts to money demand; and that this approach also works for permanent shifts.

<sup>20</sup> In this regard, Buiter's (1998) comments seem more appropriate.

be different index numbers that could be developed, pertaining to different standard bundles of goods, but that aspect of the situation is the same as in a monetary economy.

How, if at all, might the central bank<sup>21</sup> exert control over the price level and thus the inflation rate in such an economy? Let us suppose first that the medium of account is some good with a well-established and stable demand as an ordinary commodity—for example, gold. Then to exert control over the price level would require manipulation of the relative price of gold to goods in general. An agency that held a large stock of gold could lower its price by supplying quantities to the market and could raise its price (reduce the price level) by purchasing quantities. To accomplish the latter, the agency would have to supply something of value. The agency's holdings of this could be enhanced by taxation, if the agency is governmental. Thus in a non-monetary economy, price level determination might be a predominantly fiscal phenomenon even if (as I would argue) it is not in a monetary economy.

Suppose, alternatively, that the medium of account is not a good with a well-established demand. Of course, if it were a claim to such a good, or a bundle of goods, the same argument as before would apply. Another possibility is that the medium of account is a paper asset issued by (i.e., is liabilities of) the central bank. If these have no usefulness in facilitating transactions, as we are temporarily assuming, then their value will be indeterminate unless they constitute claims to some other asset.<sup>22</sup> But they could

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<sup>21</sup> What is the central bank in a non-monetary economy? Let us take it to be a government organization that engages in what Goodfriend and King (1988, p. 3) call banking policy, i.e., “regular lending and emergency financial assistance to individual [commercial] banks and other institutions.”

<sup>22</sup> This would be an instance of genuine “nominal indeterminacy,” not the “solution multiplicity” that is termed indeterminacy by many theorists. For a discussion of the distinction and its importance, see McCallum (1999, pp. 1506-7). An interesting recent contribution involving this indeterminacy is Bengtsson (2000).



be designed to represent such claims, so let us not get into those murky issues here.<sup>23</sup> In any event, the foregoing statements would continue to apply if these central bank liabilities—let us call them CBs—were electronic in nature.

For the central bank to be able to exert control over the price level and other macroeconomic variables, there might be some government regulation that gave CBs value independent from being a claim to other goods, e.g., a regulation requiring financial firms to hold specified quantities of CBs in relation to their own liabilities. And their market value—the inverse of the price level—could then be controlled by means of the quantity issued. In this situation it is not obvious that CBs would remain the medium of account if their value was poorly managed. In any case, variations in the quantity of CBs issued would still not constitute monetary policy—there can be none in a non-monetary economy.

It seems highly unlikely that the foregoing scenario would ever prevail, in any event. It is almost inconceivable that hand-to-hand currency will disappear completely; there are too many types of transactions for which currency provides the most efficient way of mediating the transaction.<sup>24</sup> And even if currency were to disappear at the retail level in favor of (say) electronic transactions, there would still need to be some arrangement for settlement. An attractive candidate would involve central bank liabilities, e.g., CBs, which would in that case possess medium-of-exchange properties and would provide the basis for monetary policy operations.<sup>25</sup>

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<sup>23</sup> For my earlier thoughts on such issues see McCallum (1985).

<sup>24</sup> Goodhart (2000) emphasizes the desirability to many users of anonymity, and there are others.

<sup>25</sup> The discussion in Woodford (2000) implicitly assumes that central bank liabilities constitute the medium of account.

## VI. Conclusions

Let us conclude with a very brief summary of the paper's arguments. To consider the future of monetary policy rules, we need to evaluate their present importance. That in turn requires some definition of what constitutes rule-based monetary policy in practice, since no actual central bank will ever be literally bound by any simple (or complex) prespecified formula. Consideration of the traditional rules-versus-discretion literature, plus more recent analyses by Woodford (1999) and others, leads to the characterization of rule-based policy as policy conducted to satisfy relationships that are specified from a "timeless perspective," i.e., designed in a manner that is not affected by current macroeconomic conditions. If that perspective is taken, the rules or relationships can be updated periodically without imparting any inflationary bias, even if the central bank's objectives specify a target output rate that exceeds the natural rate value. Given this conception, it seems reasonably clear that today's prominent inflation targeting regimes do largely represent rule-based policymaking. Whether such monetary policymaking will prevail into the future will depend in part on political trends, but the fundamental soundness of this approach gives some basis for hope.

Regarding the effects of a gradually diminishing role of money in developed economies, it would appear that the feasibility and attractiveness of rule-based monetary policymaking will not be seriously impaired so long as a tangible medium of exchange has some importance, even if its role is small. In the complete absence of monetary transactions, there would by contrast be no monetary policy of any type, rule-based or discretionary. But it seems highly unlikely that money will disappear during the next 20-

30 years, especially if monetary authorities follow rules that keep inflation (and thus the incentive to economize stringently on money holdings) low.

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