

Why Japan should not Adopt Inflation Targeting⁽¹⁾

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It is a privilege to contribute a paper in honor of Professor Ryoichi Mikitani. Through his teaching, his leadership, and his personal example of scholarship, Professor Mikitani has made a valuable — and, one hopes, lasting — contribution to the development of the practical science of monetary economics, and also to the understanding and public discussion of monetary policy, in Japan. He has shown how to distinguish the genuinely important issues from matters that are subsidiary, and he has consistently focused his attention on what is important. His concern for his students has spanned generations. And throughout, but most evidently in his work on practical questions of monetary policy and the design and regulation of financial institutions, he has been dedicated to advancing the welfare of his country. He is a true patriot, in the best sense. Our profession is the richer for his contribution and his presence.

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The Bank of Japan's monetary policy, over the past dozen years or so, has been a disappointment of major proportion.⁽²⁾ The Japanese economy has

(1) This paper was written for the special issue of the *Kobe Gakuin Economic Papers* in honor of Professor Ryoichi Mikitani. Parts of the paper draw on Friedman (2003). I am grateful to numerous colleagues and friends for helpful discussions, but the responsibility for the ideas expressed here is mine alone.

(2) See, for example, the discussion in Bernanke (2000).

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now endured well over a decade of stagnation, and as of the time of writing there is little prospect of a revival of vigorous business expansion any time soon. A country that has traditionally known only negligible unemployment now has a jobless rate approximately the same as that of the United States (despite the fact that the U.S. experienced a recession last year and has yet to mount a cyclical recovery). In the meanwhile, during much of this period the prices of goods and services in Japan have been gently falling. Apparently fearful of either overstimulating the economy or igniting a new asset price bubble, the Bank of Japan was slow to lower interest rates when the country was still experiencing moderately positive inflation. Since then it has reduced short-term interest rates effectively to zero, but because prices were falling the corresponding real interest rate remained positive. By waiting until inflation was zero or negative, the BOJ missed its opportunity to spur the economy through a negative real interest rate.⁽³⁾

To be sure, the persistent failure of economic recovery in Japan has not been solely due to the BOJ's monetary policy. Japanese fiscal policy has sometimes given the outward appearance of a stimulative stance, though mostly without real stimulative substance. And at some key points, fiscal policy has been outright contractionary.⁽⁴⁾ The collapse of the 1980s bubble in both equity and real estate prices badly impaired the balance sheets of both Japanese banks and Japanese businesses. Hence the banks have been less able to lend, and firms less willing to borrow, regardless of prevailing interest rate levels.⁽⁵⁾ (The limited progress to date in removing these nonper-

(3) By contrast, in Japan's earlier post-war experience, as well as in the experience of many other industrialized countries (including, for example, the United States), central banks have often pushed short-term real interest rates to negative levels at times when they have sought a stimulative monetary policy.

(4) See, for example, the discussion in Posen (1998).

forming credits from the banking system is failure of Japanese economic policy during for another paper.)⁽⁶⁾ Even so, monetary policy problem too. Indeed, there is room to work Japan's mistakes of the 1990s may enter the Federal Reserve System's mistakes of the 1930s as a monetary policy that was not just wrong but wrong.

Any time a central bank makes a policy mistake, there are bound to be calls for a return to a simple rule that — whatever else its merits, at least render that kind of mistake less likely. As in the U.S. in the 1930s, a key element of the policy was to allow persistently declining prices. Past experience of the 1930s, many economists during the World War II period advocated some form of growth at a steady rate. True, that kind of policy may be sub-optimal in a more general sense, but it would prevent deflation.

As it turned out, in most countries the relationships between money and either income or output have been stable for decades ago, and so today there is little room for a simple rule. But the idea of having some easy

(5) See, for example, the extended discussion in the many references cited there.

(6) I have written about this problem in my book.

(7) The classic treatment of Federal Reserve policy is Friedman and Schwartz (1963). But the classic treatment of the 1930s is Eichengreen (2000) for a recent example, see Eichengreen (2000).

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forming credits from the banking system is a further, also well understood,
 failure of Japanese economic policy during this period; but that is a subject
 for another paper.⁽⁶⁾ Even so, monetary policy clearly has been part of the
 problem too. Indeed, there is room to wonder whether in time the Bank of
 Japan's mistakes of the 1990s may enter the textbooks along with the Fed-
 eral Reserve System's mistakes of the 1930s, as classic examples of mone-
 tary policy that was not just wrong but wrong-headed.⁽⁷⁾

Any time a central bank makes a profound and (in hindsight) obvious
 mistake, there are bound to be calls for the adoption of some form or other
 of simple rule that—whatever else its merits or lack thereof—would at
 least render that kind of mistake less likely. In Japan since the early 1990s,
 as in the U. S. in the 1930s, a key element of mistaken monetary policy was
 to allow persistently declining prices. Partly in response to the deflation
 experience of the 1930s, many economists in the early decades of the post
 World War II period advocated some form of rule to keep the money stock
 growing at a steady rate. True, that kind of simple rule-based policy might
 be sub-optimal in a more general sense, but at least it would (so the argu-
 ment went) prevent deflation.

As it turned out, in most countries around the world the empirical rela-
 tionships between money and either income or prices collapsed about two
 decades ago, and so today there is little interest in such a money growth
 rule. But the idea of having some easy-to-follow principle that would at

(5) See, for example, the extended discussion in Hoshi and Kashyap (2001) and
 the many references cited there.

(6) I have written about this problem in, for example, Friedman (2000).

(7) The classic treatment of Federal Reserve policy errors in the 1930s is
 Friedman and Schwartz (1963). But the subject continues to attract attention;
 for a recent example, see Eichengreen (2002).

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least prevent ongoing deflation has persisted nonetheless. In recent years, the most frequently suggested simple principle for guiding monetary policy — although it is hardly an easy-to-follow rule — has been “inflation targeting.” In the wake of the Bank of Japan’s recent poor policy record, including in particular Japan’s experience of stagnation and deflation, it is not surprising that many observers have urged the BOJ to adopt inflation targeting as well.

It is important to be clear that, the label notwithstanding, “inflation targeting” need not mean that the sole objective guiding monetary policy is to achieve a specified rate of price inflation. In principle, an inflation-targeting regime is consistent not only with directing monetary policy toward real objectives like output and employment but, indeed, with giving priority (although not absolute priority) to such matters over concerns about the rise or fall of prices and wages. But in that case, why put the matter in terms of an inflation target?

The rationale for inflation targeting emerges as the joint consequence of two lines of thought within the economics of monetary policy. First, because the central bank in effect has only one instrument at its disposal — it can be either open market operations or the interest rate the bank charges on advances — the standard Tinbergen-Theil logic implies that it is possible to express the policy chosen at any time in terms of the intended outcome (or, in a dynamic setting, the intended trajectory) of *any* single economic magnitude that monetary policy affects: inflation, output, employment, the economy’s foreign balance, even some magnitude of no intrinsic importance whatsoever (the obvious example is the level or growth rate of some measure of “money”).

But, then, why choose inflation? The second line of thought within the

field that underlies the concept of inflation “natural rate” model of aggregate supply services. Under most familiar versions of the model, a trade-off exists between real outcomes like output and employment and outcomes like prices and inflation — and, in the short run, a central bank can exploit — but only over a short (short) horizon. By contrast, in the long run, inflation is at least not one subject to exploitation by the central bank. Real outcomes depend on such real factors as technology and population. In the long run only nominal variables are influenced by monetary policy. The conceptual appeal of the “natural rate” model is to express the objective of monetary policy in terms of a trajectory for just any randomly selected real variable. The logic would permit, but in terms of the trade-off, monetary policy can presumably affect in the

(8) In fact, the evidence for the natural rate model (the prevailing consensus within the economics of monetary policy case for inflation targeting) has let on. As the “natural rate” model seems a good description of the Japanese experience of the War II period, but only that — and in particular, not of either the U. S. or the Japanese experience, nor of either the U. S. or the Japanese theoretical work (by Blanchard and Summers, 1986) — in numerous ways in which some part of what the model predicts is purely temporary departures of output, employment, or inflation from equilibrium level induce permanent, or at least long-run, changes in equilibrium itself. Empirical work based on the Japanese experience that the evidence for a negatively sloped trade-off or for a positive link between inflation and output (Ahmed and Rogers, 2000), is at least as strong as the evidence for neutrality. But the evidence is hardly consistent with the logic of the natural rate model.

n has persisted nonetheless. In recent years, a simple principle for guiding monetary policy — an easy-to-follow rule — has been “inflation targeting.” The Bank of Japan’s recent poor policy record, and its experience of stagnation and deflation, it is argued, has urged the BOJ to adopt inflation

targeting, the label notwithstanding, “inflation targeting.” The sole objective guiding monetary policy is to target inflation. In principle, an inflation-targeting policy is one that directs monetary policy toward real variables such as employment but, indeed, with giving priority to such matters over concerns about inflation. But in that case, why put the matter in

terms of inflation? Inflation targeting emerges as the joint consequence of the economics of monetary policy. First, because inflation is the only instrument at its disposal — it can be varied more easily than the interest rate the bank charges on loans — the Ben-El-Mechaieq logic implies that it is possible to target inflation in terms of the intended outcome (or, more precisely, the trajectory) of *any* single economic magnitude: inflation, output, employment, the real interest rate, or some magnitude of no intrinsic importance other than that it is the level or growth rate of some mea-

sure. The second line of thought within the

field that underlies the concept of inflation targeting is the Phelps-Friedman “natural rate” model of aggregate supply in the market for goods and services. Under most familiar versions of the natural rate model, a trade-off exists between real outcomes like output and employment and nominal outcomes like prices and inflation — and, moreover, a trade-off that the central bank can exploit — but only over some finite (and presumably fairly short) horizon. By contrast, in the long run there is no such trade-off, or at least not one subject to exploitation by monetary policy. Long-run real outcomes depend on such real factors as endowments, preferences and technologies. In the long run only nominal magnitudes are subject to monetary influences. The conceptual appeal of inflation targeting, therefore, is to express the objective of monetary policy not in terms of the intended trajectory for just any randomly selected variable, as the Tinbergen-Theil logic would permit, but in terms of the trajectory for a variable that monetary policy can presumably affect in the long as well as the short run.⁽⁸⁾

(8) In fact, the evidence for the natural rate model has never been as strong as the prevailing consensus within the economics profession (not to mention the case for inflation targeting) has let on. As Solow (1998) has argued, the natural rate model seems a good description of the U. S. experience in the post World War II period, but only that — and in particular, not of the European post-war experience, nor of either the U. S. or the European experience before the war. Theoretical work (by Blanchard and Summers, 1986, for example) has shown numerous ways in which some part of what the natural rate model takes to be purely temporary departures of output, employment or unemployment from the equilibrium level induce permanent, or at least very long-lasting, changes in the equilibrium itself. Empirical work based on fairly long time periods indicates that the evidence for a negatively sloped Phillips curve (King and Watson, 1994), or for a positive link between inflation and the economy’s investment rate (Ahmed and Rogers, 2000), is at least as strong as the evidence for long-run neutrality. But the evidence is hardly conclusive on either side, and for the moment the logic of the natural rate model underlies much of the structure of

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The important point about inflation targeting, however, is that expressing the intended policy outcome in terms of the trajectory for any one variable does not imply that the central bank is indifferent with respect to outcomes for all other variables. This point is most explicit in the inflation targeting framework suggested by Svensson (1997), in which the central bank targets its own forecast of future inflation as if that forecast were a classical intermediate target variable such as money.⁽⁹⁾

In Svensson's formulation, the central bank at each point in time seeks to make its *forecast* of future inflation follow a specific trajectory. If some economic disturbance or policy error has resulted in an inflation rate different from whatever rate the central bank is seeking to achieve, and if inflation is the only variable about which the central bank is not indifferent, then the optimal trajectory simply involves returning to the desired inflation rate instantly — or more practically, in the presence of lags, as soon as is at all possible. If other variables like output or employment (or even the level or change of interest rates) matter too, the optimal trajectory following a disturbance or a policy error then involves bringing the forecast of future inflation into line with the unconditionally desired inflation rate only over some longer period of time.

Not surprisingly, the length of the interval over which the forecast of

modern macroeconomics. The logic behind inflation targeting is consistent with that whole.

(9) Because of the relation between a future outcome and its expectation, however, this particular form of intermediate targeting is not subject to the standard criticisms of the use of money or other such variables as intermediate targets. Moreover, by targeting its own forecast, rather than that of private-sector forecasters, the central bank can avoid potential dynamic instabilities of the kind identified by Woodford (1994), although there is an obvious sacrifice of the efficacy of external monitoring of policy performance.

future inflation optimally returns to the unconditionally desired rate — or, equivalently, the optimal trajectory conceived as asymptotic — depends on the preferences with respect to inflation vis-à-vis the given short-run cost of disinflation in terms of employment. The stronger is the preference for being at the target rate, the faster the optimal inflation forecast returns to the unconditionally desired rate. Conversely, the stronger is the preference for higher employment, the more slowly the optimal inflation forecast returns to the unconditionally desired rate. Hence not only does inflation forecasting matter, but the smaller is the short-run cost of disinflation, the more the central bank is what King (1997) has called a "strongly inflation-targeting" central bank. There is an explicit way in which its forecast of future inflation can enter the inflation targeting framework.

But despite the compatibility in principle between inflation targeting and the conceptual framework for implementing a policy that takes account of real outcomes, the fact that inflation has become a matter as well as inflation, an observation that has dominated the last quarter century of debate about macroeconomics, is that a powerful motivation for adopting inflation targeting in the last quarter century, is the hope that if the explicit policy is carried out entirely in terms of inflation, the concerns for real outcomes may somehow be taken into consideration altogether. After all, a broad-based debate, and probably of intellectual distinction, is the language in which that debate takes place.

inflation targeting, however, is that expressed in terms of the trajectory for any one variable. The central bank is indifferent with respect to the trajectory. This point is most explicit in the inflation targeting framework by Svensson (1997), in which the central bank treats the forecast of future inflation as if that forecast were a variable such as money.⁽⁹⁾

The central bank at each point in time seeks to follow a specific trajectory. If some economic shock has resulted in an inflation rate different from what the central bank is seeking to achieve, and if inflation is not indifferent, then the trajectory returns to the desired inflation rate in the presence of lags, as soon as is at all possible. If output or employment (or even the level or growth rate) is too low, the optimal trajectory following a disinflation involves bringing the forecast of future inflation to the unconditionally desired inflation rate only over

the interval over which the forecast of inflation is behind inflation targeting is consistent with

between a future outcome and its expectation, intermediate targeting is not subject to the same trade-off as the money or other such variables as intermediate targets. The central bank's own forecast, rather than that of private-sector agents, can avoid potential dynamic instabilities of the system, although there is an obvious sacrifice of the quality of policy performance.

future inflation optimally returns to the unconditionally desired rate in this formulation — or, equivalently, the optimal speed of convergence if it is conceived as asymptotic — depends on the strength of the central bank's preferences with respect to inflation vis-a-vis its other objectives. For a given short-run cost of disinflation in terms of output and employment, the stronger is the preference for being at the unconditionally desired inflation rate, the faster the optimal inflation forecast trajectory returns to it. Conversely, the stronger is the preference for being at equilibrium output and employment, the more slowly the optimal inflation forecast trajectory returns to the unconditionally desired rate. (Similarly, for given preferences, the smaller is the short-run cost of disinflation, the faster the optimal trajectory returns to the unconditionally desired inflation rate, and vice versa.) Hence not only does inflation forecast targeting not necessarily mean that the central bank is what King (1997) has called an "inflation nutter," but there is an explicit way in which its preferences with respect to real outcomes can enter the inflation targeting framework.

But despite the compatibility in principle of inflation targeting as a conceptual framework for implementing a monetary policy in which real outcomes matter as well as inflation, an observer who has paid attention to the last quarter century of debate about monetary policy is entitled to suspect that a powerful motivation for adopting this framework, at least in some quarters, is the hope that if the explicit discussion of the central bank's policy is carried out entirely in terms of an optimal inflation trajectory, concerns for real outcomes may somehow atrophy or even disappear from consideration altogether. After all, a broadly familiar characteristic of policy debate, and probably of intellectual discourse more generally, is that the language in which that debate takes place exerts a powerful influence over

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the substance of what the participants say, and eventually even over what they think.

In just this context, one of the most striking developments in monetary economics during this last quarter century has been the renewed attempt to banish from the purview of monetary policymaking any sense of responsibility for real outcomes. This is in fact an old debate, with familiar antecedents in central banks' response to the depression of the 1930s and well before that. Although there is no necessary link, there is ground for thinking that inflation targeting may in practice be yet the latest incarnation of this effort. Indeed, one reason for suspecting that this is so is the reluctance, within today's central banking community, to acknowledge openly an interest in or concern for real outcomes.

One frequently stated rationale for eschewing concern for real outcomes is the proposition that there is nothing the central bank can usefully do to affect them anyway: in effect, the neutrality of the natural rate model holds in the short as well as the long run.⁽¹⁰⁾ Today this idea is familiar from many sources, including central banks and central bankers): Maintaining price stability fosters greater output and employment in the long run. And in the short run there is nothing monetary policy can do about either output or employment anyway.⁽¹¹⁾

The most immediate problem with such a point of view is that even if inflation were the only aspect of economic activity that the central bank sought to affect, it is unclear how it would go about doing so without in the

(10) Alternatively, even if monetary policy is not neutral with respect to real outcomes in the short run, the familiar problems of uncertainty and lagged effects are sufficiently severe that attempting to exploit this short-run nonneutrality is as likely to do harm as good.

(11) See Friedman (2003) for several examples.

first instance deliberately influencing the price level. In the 1970s and 1980s, when some economists believed that simply targeting the money stock, however measured, in step with some price level target would lead to a corresponding inflation path for the economy, the causal relationships between money and price level that were true twenty years ago has mostly removed this rationale from monetary policymaking (although money is still used as an information variable to help guide other key variables). Instead, the conceptual target lies through the short-term aggregate demand curve. For purposes, targeting inflation means in the short run not because output necessarily matters for the central bank in relation to some capacity benchmark.

But once the point is accepted that monetary policy can affect real outcomes in the short run — a point that is key to its influence over price inflation — the central bank should not seek to affect real outcomes in the short run. It is then necessary to address the question of how the central bank should address the issue. The economic literature provides no such guidance. The familiar line of thinking on the issue in the past few decades has been the argument, based on the wrong kind of concern for real outcomes,

(12) For example, the fact that a central bank that does not immediately follow a "Taylor rule," with a significant lag on the unemployment term in determining its policy rate, may imply that the central bank is concerned about the unemployment rate. Output or unemployment may be used as a function merely as a source of information.

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the most striking developments in monetary policy of the century has been the renewed attempt to make monetary policymaking any sense of responsibility is in fact an old debate, with familiar roots in response to the depression of the 1930s and the fact that there is no necessary link, there is ground for arguing that it may in practice be yet the latest incarnation of a reason for suspecting that this is so is the reluctance of the real banking community, to acknowledge the need for real outcomes.

the fear of eschewing concern for real outcomes is something the central bank can usefully do to ensure the neutrality of the natural rate model holds in the long run. Today this idea is familiar from many sources (and central bankers): Maintaining price stability and employment in the long run. And in the short run, monetary policy can do about either output or

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monetary policy is not neutral with respect to real economic activity. Familiar problems of uncertainty and lagged responses to attempts to exploit this short-run nonneutrality.

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first instance deliberately influencing the pace of real activity. In an earlier era some economists believed that simply keeping the quantity of money, however measured, in step with some predetermined growth path would lead to a corresponding inflation path for prices. But the collapse of empirical relationships between money and prices in many countries roughly twenty years ago has mostly removed this idea from the realm of practical monetary policymaking (although money certainly can be, and often still is, used as an information variable to help predict future inflation as well as other key variables). Instead, the conceptual route to keeping inflation on target lies through the short-term aggregate supply curve. For practical purposes, targeting inflation means in the first instance targeting output — not because output necessarily matters for its own sake, but because output in relation to some capacity benchmark is what matters for inflation.⁽¹²⁾

But once the point is accepted that monetary policy does systematically affect real outcomes in the short run — indeed, so much so that this is the key to its influence over price inflation — the rationale that the central bank should not seek to affect real outcomes because it cannot becomes vacuous. It is then necessary to address the issue on its merits. The monetary economics literature provides no such argument, however. The most familiar line of thinking on the issue in the literature of the past two decades has been the argument, based on time inconsistency, that the wrong kind of concern for real outcomes can lead in the long run (and,

(12) For example, the fact that a central bank's monetary policy actions approximately follow a "Taylor rule," with a significant role for the usual output or unemployment term in determining its chosen short-term interest rate, need not imply that the central bank is concerned with real outcomes for their own sake. Output or unemployment may be present in the central bank's reaction function merely as a source of information about future inflation.

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depending on expectations, perhaps in the short run as well) to an undesirable rate of inflation with little (in the limit, no) gain in real terms anyway. But the fact that the wrong kind of concern for real outcomes can have these undesirable consequences does not constitute a generic case against treating output or employment as proper objectives of monetary policy at all.

Nonetheless, the call for monetary policy to adopt an exclusive focus on prices to the exclusion of real outcomes has been widespread throughout this period, including in Japan. In the mid 1990s, for example, BOJ Governor Yasuo Matsushita argued that "Most people agree that the objective of monetary policy is the maintenance of price stability. ... The maintenance of price stability does not conflict with the achievement of stable economic growth and employment conditions. For example, measures to prevent overheating (or recession) of the economy can at the same time contain inflation (or avoid deflation), and provide medium- to long-run price stability; and this price stability in turn, is a prerequisite for achieving sustainable growth of the economy."⁽¹³⁾

Not surprisingly, outside academic circles most of the talk of banishing real outcomes from the purview of monetary policy took place during an era of sustained economic growth.⁽¹⁴⁾ When business is expanding and profits

(13) Matsushita (1996). Governor Matsushita's remarks clearly admit only the possibility of disturbances to aggregate demand, which influence output and prices in the same direction. As much of the academic literature of optimal monetary policy has emphasized, the more interesting problem arises in the case of disturbances to aggregate supply, which normally influence output and prices in opposite directions.

(14) Even the remarks by Governor Matsushita quoted above date from 1996, when the Japanese economy was enjoying a recovery (which in retrospect turned out to be short-lived). Earlier in the same speech, Mr. Matsushita stated

are strong and jobs are plentiful (even in European countries), it is easy to say that inflation targeting is not the answer. More recently, now that many of the major economies have fallen into recession, talk in favor of a sole focus on price stability has become the dominant theme from the public discussion. But although inflation targeting has been the subject of a rhetorical campaign to banish real outcomes as objectives, the focus on price stability objectives has clearly persisted. And, inflation targeting has persisted too.

A further major theme in the discussion today, which is closely connected to the "transparency." As King (2000) has observed, "much has changed over the past decade. The traditional given way to transparency and openness has been replaced by open speech on domestic or international financial markets. The hearing about transparency. ... The competition between nations with a view to enhancing their credibility and role in monetary policy." As ample discussion has shown, clear, candid considerations of communication, credibility and transparency, have also influenced the case for inflation targeting.

Why the recent emphasis on "transparency" in inflation targeting really is an improvement over inflation targeting is not clear.

The standard forward-looking aggregate demand curve is the horse of so much of today's monetary policy.

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monetary policy to adopt an exclusive focus on real outcomes has been widespread throughout. In the mid 1990s, for example, BOJ Governor Hat "Most people agree that the objective of maintenance of price stability. ... The maintenance is consistent with the achievement of stable economic conditions. For example, measures to prevent the economy can at the same time contain and provide medium- to long-run price stability, is a prerequisite for achieving sus-³⁾"

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are strong and jobs are plentiful (even in chronically high-unemployment European countries), it is easy to say that inflation is all that should matter. More recently, now that many of the major economies have slowed, in many cases to the point of recession, talk of ignoring real outcomes in favor of a sole focus on price stability has begun to disappear — at least from the public discussion. But although it is less visible, the broader intellectual campaign to banish real outcomes from the list of monetary policy objectives has clearly persisted. And, in parallel, the interest in inflation targeting has persisted too.

A further major theme in the discussion and practice of monetary policy today, which is closely connected to the strategy of inflation targeting, is "transparency." As King (2000) has observed, "It is truly remarkable how much has changed over the past decade. The mystery and mystique has given way to transparency and openness. ... It is difficult to listen to a speech on domestic or international financial policy these days, without hearing about transparency. ... The communication of policymakers' intentions with a view to enhancing their credibility has come to play a central role in monetary policy." As ample discussion in the literature also makes clear, considerations of communication, including in particular the quest for credibility and transparency, have also been a central motivation for inflation targeting.

Why the recent emphasis on "transparency"? And, more to the point, is inflation targeting really an improvement in this respect?

The standard forward-looking aggregate supply curve that is the workhorse of so much of today's monetary economics literature expresses

that "the risk of a deflationary spiral, which was an issue of concern last year, has been practically eliminated."

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current inflation as a positive function of (1) the level of output supplied in relation to some benchmark equilibrium, (2) a shock to production costs or sellers' mark-ups, and (3) price-setters' expectations of future inflation.⁽¹⁵⁾ All else equal, therefore, lower inflation expected for the future means lower inflation today. Similarly, the lower is expected future inflation, the higher today's output can be in relation to equilibrium output without resulting in higher inflation today. On both counts (which are really just two ways of expressing the same relationship), as long as the central bank has preferences with respect to real output as well as inflation, it is beneficial to have private-sector decision makers expect that inflation will be low in the future.

But as the experience of many economies in the 1970s harshly demonstrated, merely claiming that inflation will be low in the future is not sufficient to induce the public to expect that this will be so. Indeed, the original point of the time inconsistency argument was that even if policymakers are entirely sincere in their intentions to deliver on such a pledge — and even in the absence of surprise shocks — under some circumstances there is good reason for private-sector decision makers to believe that inflation will be high anyway: the low-inflation pledge will not be “credible.”

Given the context of the historical evolution of this literature, a “credible” central bank has therefore come to mean something more than just a central bank that can be believed to follow through on its declared policy, whatever that policy may be. Specifically, in today's context a “credible”

(15) As Roberts (1995) has conveniently shown, a relationship of this generic kind can emerge as a result of random timing of price increases as in Calvo's (1983) model, nominal wage contracts as in Taylor's (1979) model, or convex costs of price adjustment as in Rotemberg's (1982) model.

central bank is one that is believed to be firm. And in parallel, a “transparent” policy means to be “credibly” committed to low inflation.

Seen in this light, the connection to inflation (in the dictionary sense) transparent. Inflation targeting is transparent to private-sector decision makers' expectations before them the central bank's long-run inflation target is equal to such-and-such a rate. It removes the uncertainty of objectives the central bank may hold for inflation in the short run, over less than the long run. It removes the trade-off that monetary policymakers face between real outcomes over less than the long run and inflation. In a specific sense of making a commitment to inflation, coming out of the discussion those considering a commitment to be qualified, and hence not credible.⁽¹⁶⁾ It is “transparent” in that it holds its cards close to its chest before clear glass while obscuring its intentions behind a partition.

(16) The opportunity for the central bank to be “transparent” in this way — via its communications strategy — is a result of its failure to ensure time consistency. The reason is that the central bank's strategy of time consistency to private-sector decision makers full knowledge (including parameters describing policy, short-run aggregate supply curve, and so on) is “credible” depending upon whether it is credible to the public. If the public lacks this knowledge, it is possible for the central bank to affect private-sector perceptions of key parameters, and hence may affect inflation policy as time consistent and therefore “credible.”

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function of (1) the level of output supplied in equilibrium, (2) a shock to production costs or e-setters' expectations of future inflation.⁽¹⁵⁾ All inflation expected for the future means lower lower is expected future inflation, the higher on to equilibrium output without resulting in h counts (which are really just two ways of ip), as long as the central bank has pre-output as well as inflation, it is beneficial to akers expect that inflation will be low in the

ny economies in the 1970s harshly demon-nflation will be low in the future is not suffi-pect that this will be so. Indeed, the original argument was that even if policymakers are ns to deliver on such a pledge — and even in — under some circumstances there is good on makers to believe that inflation will be pledge will not be “credible.”

irical evolution of this literature, a “credible” ie to mean something more than just a cen-to follow through on its declared policy, pecifically, in today's context a “credible”

iently shown, a relationship of this generic andom timing of price increases as in Calvo's tracts as in Taylor's (1979) model, or convex Rotemberg's (1982) model.

central bank is one that is believed to be firmly committed to low inflation. And in parallel, a “transparent” policy means one that the public understands to be “credibly” committed to low inflation.

Seen in this light, the connection to inflation targeting becomes (in the dictionary sense) transparent. Inflation targeting is a way of manipulating private-sector decision makers' expectations about future inflation. It puts before them the central bank's long-run objective of achieving inflation equal to such-and-such a rate. It removes from explicit discussion whatever objectives the central bank may hold for output, employment, or other real outcomes, over less than the long run. It likewise removes from discussion the trade-off that monetary policymakers perceive between inflation and real outcomes over less than the long run. It achieves “credibility,” in the specific sense of making a commitment to low inflation believable, by keeping out of the discussion those considerations that would reveal that commitment to be qualified, and hence not completely credible in the usual sense.⁽¹⁶⁾ It is “transparent” in that it holds a part of what the central bank is doing before clear glass while obscuring other parts behind a logical partition.

(16) The opportunity for the central bank to affect the credibility of its policy in this way — via its communications strategy — is absent in the standard literature of time consistency. The reason is that this line of analysis usually assigns to private-sector decision makers full knowledge of the relevant parameters (including parameters describing policymakers' preferences, the slope of the short-run aggregate supply curve, and so on), so that a policy either is or is not “credible” depending upon whether it is or is not time consistent. But when the public lacks this knowledge, it is possible that communications by the central bank may affect private-sector perceptions, including perceptions about these key parameters, and hence may affect whether or not the public sees any given policy as time consistent and therefore “credible.”

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The point is perhaps easiest to see in Svensson's framework of inflation forecast targeting. Few if any central banks that have adopted an inflation targeting strategy seek, or even say they seek, to return inflation to the unconditionally desired rate immediately (or, in the presence of lags, as immediately as is possible) after a supply shock or a policy error has resulted in some different rate. The reason is that doing so would unduly push real economic activity away from equilibrium.

To recall, the optimal speed of return is a direct expression of the relative weight placed on inflation vis-a-vis real outcomes. But while it is not uncommon for inflation targeting central banks to be open about the time horizon for returning to the unconditionally desired inflation rate (typically two years or more), few are explicit about the underpinnings from which, as Svensson shows, this optimal horizon arises: the level of output or employment that policymakers regard as desirable over this horizon, or, even more so, the weight, compared to that on inflation, that they place on such objectives. The resulting "transparency" is one-dimensional. It is so in order to achieve "credibility."

Taken at face value — that is, as set forth in theoretical expositions like Svensson's — an inflation targeting framework holds out the prospect of resolving some of the internal contradictions that have thwarted central banks' efforts to achieve widely recognized macroeconomic goals in the past. It also offers the promise of introducing a logic and consistency that some central banks' deliberations sorely missed in the past. And it poten-

(17) Whether inflation targeting actually played a role in the achievement of more stable prices, as has occurred in many of the countries that have adopted this framework — but also in others that have not — is an empirical issue that lies beyond the scope of this paper. See, for example, Bernanke et al. (1999).

tially provides some reassurance that a certain kind of first-order mistake that the Bank committed a decade ago.

But inflation targeting, at least in today's context, also promotes two further objectives: import, and while seemingly contraction-related: It forces those who participate in the discussion, including both policymakers and the interest groups, to conduct the discussion in a vocabulary that is more precise. So doing it fosters over time the atrophy of the language that comes. In the meanwhile, inflation targeting does not address the ever concerns for real outcomes that have been the focus of policy. Inflation targeting is an outcome that Japanese citizens should be wary of — from their monetary policymakers.

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; actually played a role in the achievement of rred in many of the countries that have adopted thers that have not — is an empirical issue that per. See, for example, Bernanke et al. (1999).

tially provides some reassurance that a central bank will not commit the kind of first-order mistake that the Bank of Japan has made over the last decade.

But inflation targeting, at least in today's inherited monetary policymaking context, also promotes two further objectives that are of more questionable import, and while seemingly contradictory, the two are ultimately related: It forces those who participate in the monetary policy debate, including both policymakers and the interested public more generally, to conduct the discussion in a vocabulary pertaining solely to inflation, and by so doing it fosters over time the atrophication of concerns for real outcomes. In the meanwhile, inflation targeting hides from public view whatever concerns for real outcomes policymakers do maintain. Neither implication is an outcome that Japanese citizens should seek — or, indeed, tolerate — from their monetary policymakers.

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