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LETTER OF TRANSMITTAL

November 6, 1998

To the Members of the Joint Economic Committee:

Transmitted hereby is a *Compendium of Staff Studies on Monetary Policy*. It is comprised of six Joint Economic Committee studies written by Robert E. Keleher, Chief Macroeconomist.

The views expressed in this paper are those of the author and do not necessarily represent the views of the individual Members of the Joint Economic Committee.

Sincerely,

Jim Saxton,
Chairman.

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A JOINT ECONOMIC COMMITTEE REPORT

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United States Congress

February 1997

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LESSONS FROM INFLATION TARGETING EXPERIENCE

EXECUTIVE SUMMARY

A number of countries recognize the many potent benefits of price stability and consequently have explicitly adopted it as the principal goal of monetary policy. After highlighting these benefits, this paper summarizes the key lessons derived from this international experience with price stability.

1. The single, explicit goal of price stability can be successfully implemented by the monetary authority.
2. Price stability targets can take the form of inflation targets rather than price level targets.
3. The CPI can be used as the inflation target.
4. Inflation targets should take the form of bands rather than point estimates.
5. Establishing the credibility of a price stabilizing monetary policy takes time.
6. Inflation objectives should be multi-year in nature.
7. Inflation targets should be accompanied by more open, transparent monetary policy reporting.
8. Inflation targets should be consistent with other macroeconomic policies of the government.
9. Inflation targets should not be accompanied by directives on how to achieve these goals.

LESSONS FROM INFLATION TARGETING EXPERIENCE

I. INTRODUCTION

While some forward-looking U.S. Congressmen have promoted price stability and introduced legislation to make it the primary goal of Federal Reserve monetary policy, many other countries, including Canada, The United Kingdom, New Zealand, Sweden, Spain, Finland, Australia, and Israel have moved forward beyond the rhetoric, explicitly adopting price stability as the primary goal for their monetary policy. There is a growing consensus that under current monetary arrangements, the single appropriate goal of monetary policy should be price stability.[1],[2]

There are many important lessons from this surprisingly rich international experience relevant to both U.S. legislators (charged with Federal Reserve oversight) as well as to Federal Reserve policy makers themselves. After briefly summarizing the benefits of price stability, this paper succinctly summarizes these key lessons to highlight possible policy approaches and promote awareness of this important issue.

II. THE RATIONALE FOR PRICE STABILITY

The foreign governments and Central Banks cited above recognize the following well-known benefits of and rationale for price stability:

- **Anchors the Price System:** Recent decades have witnessed both the breakdown of the Bretton Woods System as well as disappointment with the performance of monetary aggregates as guides for monetary policy. This left a fiat money system with no reliable anchor of value. Such an anchor is needed to provide a standard of value, so that comparative values can be established and accurately measured. Price (or inflation) targets resulting in price stability provide such an anchor.
- **Allows the Price System to Function Effectively:** Importantly, price stability enables the price system–the information or signaling

[1]Current monetary arrangements entail a fiat money, flexible exchange rate regime.

[2]This goal has been explicitly endorsed by a number of Federal Reserve officials including several Federal Reserve Bank Presidents.

mechanism of free market economies–to function effectively by directing resources to their most beneficial use, thereby fostering efficiency.

- **Promotes Stability and Growth:** By minimizing price volatility, distortions affecting the price system, as well as uncertainty and inflation premiums, price stability not only promotes economic and financial market stability but also lowers interest rates and fosters sustainable economic growth.[3] Indeed, a benefit of a credible price stability goal is that market forces could serve as natural stabilizers.
- **Eliminates Distortive Effects of Inflation Interacting with the Tax Code:** Since investors continue to pay income taxes on the inflation component of interest and dividend income as well as capital gains attributable to inflation, price stability would eliminate these and other forms of tax distortion and such "taxation without representation."
- **Promotes Transparency, Accountability and Credibility**: Explicitly adopting price stability as the principal monetary policy goal serves to promote transparency, accountability, and credibility to monetary policy. Furthermore, explicit inflation targets reduce incentives of the monetary authority to renege or backslide on its commitment to price stability.[4]

III. Lessons From Recent Inflation Targeting Experience

Recognizing these benefits, the governments and central banks of Canada, The United Kingdom, Australia, New Zealand, Sweden, Spain, Israel, and Finland explicitly have adopted targets for price stability as the principal

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[3]Recent empirical research has documented a negative relationship between inflation and economic growth. See, for example, Robert J. Barro, "Inflation and Economic Growth," NBER Working Paper 5326, October 1995; Brian Motley, "Growth and Inflation: A Cross Country Study," Federal Reserve Bank of San Francisco Working Paper 94-08; and Stanley Fischer, "The Role of Macroeconomic Factors in Growth," NBER Working Paper No. 4565, December 1993.

[4]The "time inconsistency" problem arises when inflation is reduced, but short-sighted policy makers recognize that surprise (unexpected) expansionary policies can have significant short-term economy-boosting effects. In short, as inflation is reduced, incentives for policy makers to unexpectedly stimulate the economy increase. Pre-commitments to explicit price targets reduce these perverse incentives.

goal of monetary policy.[5],[6] Other countries, such as Germany and Italy, also have embraced price stability.

There are many important lessons from this recent international experience with targets for price stability. These lessons, summarized in the following paragraphs, should be of special interest to both legislators interested in monetary policy oversight as well as to monetary policy makers themselves.

LESSON #1: THE SINGLE EXPLICIT GOAL OF PRICE STABILITY CAN BE SUCCESSFULLY IMPLEMENTED.

The single monetary policy goal of price stability has been successfully implemented in a number of countries. Explicit, quantifiable inflation targets have been adopted by a number of countries including Canada, The United Kingdom, New Zealand, Sweden, and Finland. Evidence to date indicates these experiments have been quite successful. Those countries adopting a price stability goal, for example, significantly have improved their inflation performance. Specifically, they have all dramatically lowered their inflation rates since adopting targets for inflation, often to lower rates not observed for decades. Several of these countries reached their inflation objectives well ahead of schedule; inflation targets have often been met or undershot. Preliminary studies have shown that those countries adopting explicit inflation targets have outperformed other countries not only in terms of lowering inflation but in a number of other criteria as well.[7]

This evidence underscores the argument that explicit, quantifiable goals of price stability can be implemented successfully. While implicit goals of price stability may also work, in some cases it appears that explicit targets can help further to achieve price stability in a number of ways discussed below; however, price stability goals must be credible.

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[5]The reasons these governments opted for explicit price stability goals included disappointment with fixed exchange rate arrangements and/or monetary aggregate targeting.

[6]Sweden successfully adopted price stability as a goal of monetary policy in the 1930s. See, for example, Robert Keleher, "The Swedish Market Price Approach to Monetary Policy of the 1930's," Contemporary Policy Issues, Vol. IX, No.2, April 1991.

[7]See, for example Bennett T. McCallem, "Inflation Targeting in Canada, New Zealand, Sweden, The United Kingdom, and in general." NBER Working Paper No. 5579, May 1996, p.9.

Many of the lessons enumerated below provide guidelines to enhance the credibility, and therefore the likely success, of inflation targets.

LESSON #2: TARGETS FOR PRICE STABILITY CAN TAKE THE FORM OF INFLATION TARGETS RATHER THAN PRICE LEVEL TARGETS.

Central Banks recently embracing explicit targets for price stability have adopted inflation targets rather than price level targets.[8] There are important differences between these two forms of targets for price stability. With an increase in prices, for example, price level targets require an offsetting decline in (deflation of) prices whereas inflation targets merely require a cessation of the increase. This difference has several important implications. Inflation targets, for example, allow for more policy flexibility in responding to (one-time) supply-side shocks since no price deflation (and hence less real economic disruption) is required. Because of this enhanced policy flexibility, inflation targets are viewed as more realistic politically and hence, more credible. But because offsetting deflation is not required by inflation targets, these targets also embody "base drift" (an ever-increasing price level) and greater, longer term variance and uncertainty of prices.[9]

LESSON #3: THE CONSUMER PRICE INDEX (CPI) CAN BE USED AS THE INFLATION TARGET.

Although countries adopting explicit inflation targets recognize well-known mismeasurement biases of consumer price indices, they all have used the CPI (or variants of the CPI) as the basis of their inflation target. These biases are viewed as relatively minor and outweighed by the CPI's practical advantages: namely, its familiarity, ready availability, minor revisions, and convenience in communication with the public.

Additionally, most countries using CPI targets adjust the index for volatile components and non-monetary influences. Adjustments have often been made for volatile food and energy components as well as for housing costs or mortgage payments and indirect taxes. Despite imperfections, therefore, the CPI target is viewed as practical and useable. Should the U.S. CPI be revised to account for measurement biases, an

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[8]The price stabilization regime adopted in Sweden during the 1930s, however, focused on price level stability as its primary goal (Keleher *op.cit.*).

[9]Inflation targets imply that the price level becomes "non-stationary"; once disturbed, the price level does not return to its previous level. Some economists argue that inflation targets can be an effective first step to price level targeting at a later date.

adjusted version may still be a viable target. But alternative price indices may also be workable and not precluded from consideration.

LESSON #4: INFLATION TARGETS SHOULD TAKE THE FORM OF BANDS RATHER THAN POINT ESTIMATES.

Countries adopting explicit inflation targets generally have specified target bands (or tolerance intervals) rather than point estimates for their inflation targets. These bands allow for the realities of measurement imprecision as well as unexpected shocks to specific prices. Accordingly, existing inflation targets normally have a tolerance width of about two percentage points.

In addition to tolerance bands and above-cited adjustments to the CPI, some countries (e.g., New Zealand) have provided for escape clauses which allow for further modifications or exceptions in cases of special circumstances. These features all help to make adherence to explicit targets more believable and hence more credible.

LESSON #5: ESTABLISHING THE CREDIBILITY OF A PRICE STABILIZING MONETARY POLICY TAKES TIME.

Experience in several countries indicates that establishing the credibility of inflation targeting arrangements is not easy and occurs only over an extended time frame.[10] The mere announcement of such targets does not by itself readily lend credibility to inflation targets. It is only after a record of price stability and the establishment of complementary institutional arrangements that credibility develops, implying that inflationary expectations and risk premiums of interest rates will disappear only slowly over time.[11]

LESSON #6: INFLATION OBJECTIVES SHOULD BE MULTI-YEAR IN NATURE SO AS TO ALLOW FOR A GRADUAL ADJUSTMENT TO PRICE STABILITY.

Countries adopting inflation targets have employed a multi-year time frame in establishing their inflation objectives so as to allow for a gradual, extended adjustment to price stability. An extended time period is essential for complete disinflation to occur. Such an approach considers

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[10]The credibility of price stabilizing policy refers to the public's belief that the central bank will adhere to the policy consistently. Such credibility is important because it influences expectations affecting interest and exchange rates and thereby affects the cost of reducing inflation in terms of lost output and employment.

[11]See, for example, John Judd, "Inflation Goals and Credibility," Weekly Letter, Federal Reserve Bank of San Francisco, Number 95-19, May 12, 1995.

not only the long lags of monetary policy on inflation, but also the long-term contracts and the lags in the adjustment of both behavior and inflationary expectations. Establishing multi-year objectives increases the chances of success by allowing for a gradual conditioning of expectations; hence, these objectives minimize economic disruption while enhancing the credibility of inflation goals.

LESSON #7: INFLATION TARGETS SHOULD BE ACCOMPANIED BY MORE OPEN, TRANSPARENT MONETARY POLICY REPORTING BY CENTRAL BANKS.

Central Banks adopting explicit inflation targets have improved their communication and reporting about the intent of and progress toward achieving their stated targets. These banks recognize that for their policies to be successful, their policy goals should be transparent; objectives should be understandable, simple, explained, justified, and restated frequently. Accordingly, these banks have more regularly issued increasingly informative inflation reports. The Bank of England and the Central Bank of New Zealand, for example, issue quarterly inflation reports whereas the Swedish Riksbank issues such a report three times a year. These reports are useful in both publicizing and explaining policy goals to the public as well as to the financial press. The reports sometimes present an explicit inflation outlook and spell out ongoing inflation developments. Such improved communication about both policy targets and the actual inflation record is an essential element in improving the credibility of inflation targets, thereby reducing the costs of disinflation.

LESSON #8: THE INFLATION TARGETS FOR MONETARY POLICY SHOULD BE CONSISTENT WITH OTHER MACROECONOMIC POLICIES OF THE GOVERNMENT.

Most countries adopting explicit inflation targets recognize that monetary policy goals of price stability should be consistent with other macroeconomic policies of the government. A disinflation monetary policy program which is inconsistent with other macroeconomic policies may not be credible and hence may be more costly to implement than otherwise would be the case.

Exchange rate objectives, for example, should be subordinate to inflation targets for the latter to be credible, implying that the priorities of the Treasury Department (or Minister of Finance) should be made compatible with central bank objectives. Similarly, if levels of public

spending and budget deficits are high and increasing, the credibility of price stability goals may be difficult to maintain.[12],[13]

One element of government debt policy is particularly notable in this regard. Specifically, issuing inflation indexed bonds adds to the credibility of monetary policy aimed at price stability because such debt issuance removes government incentives to use inflation as a financing tool (at least for that portion of the debt that is indexed). Indexed debt cannot be inflated away, and such debt shifts the risks of inflation onto the issuer (government) as opposed to the debt holder.[14] Accordingly, incentives for inflation are reduced and the credibility of price stability goals is enhanced.

Notably, most countries recently adopting inflation targets also issue inflation indexed debt. The United Kingdom, New Zealand, Canada, and Sweden, for example, all issue indexed debt and all have had successful inflation targeting experiences.

LESSON #9: MANDATING THE GOAL OF PRICE STABILITY SHOULD NOT BE ACCOMPANIED BY DIRECTIVES ON SPECIFIC PROCEDURES AS TO HOW THE CENTRAL BANK SHOULD ACHIEVE PRICE STABILITY.

Successful experience in implementing price stability as the monetary policy goal has been associated with the use of several (intermediate) policy indicators or guides rather than a single (intermediate) policy target. Indeed, adoption of inflation targets represents movement away from a rigid adherence to explicit intermediate policy targets. Thus, successful approaches to price stability involve instrument independence but not goal independence; i.e., a mandated price stability goal but central bank independence as to what procedures or guides to use to best achieve this goal.

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[12]Pressures to monetize the debt and/or deficit may increase with rising interest rates.

[13]This is the rationale underlying European debt and deficit criteria (under the Maastricht Treaty) for entry to the European Monetary Union. This also underpins the German desire for a European "Stability Pact" agreement to bolster the credibility of the EMU.

[14]As Treasury's Lawrence Summers has stated, "Governments that sell inflation insurance will tend to avoid inflation." Lawrence Summers, "Comments on Why are Central Banks Pursuing Long-Run Price Stability," Federal Reserve Bank of Kansas City Symposium on "Achieving Price Stability," Jackson Hole, Wyoming, August 29-31, 1996.

More specifically, successful pursuit of inflation targets has not been achieved by targeting monetary aggregates, interest rates, or real economic activity; i.e., unemployment rates or economic growth. Some successful price stabilizing central banks, however, have used market price variables such as exchange rates, commodity prices, or measures of price expectations as policy guides.[15]

SUMMARY AND CONCLUSION

A number of countries recognize the many potent benefits of price stability and consequently have explicitly adopted it as the principal goal of monetary policy. To date, preliminary evidence suggests the inflation targeting experience of many foreign central banks has been quite successful and promises to continue to provide excellent results. A number of very important lessons can be learned from the accumulated knowledge and experience in The United Kingdom, New Zealand, Australia, Spain, Canada, Sweden, Finland, and other countries. This paper briefly summarized these key lessons with the hope of improving congressional legislative initiatives dealing with the goal of price stability for U.S. monetary policy.

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[15]See, for example, Keleher, *op cit*; Charles Freedman, "What Operating Procedures Should be Adopted to Maintain Price Stability? Practical Issues," Paper presented at Federal Reserve Bank of Kansas City Conference on "Achieving Price Stability," Jackson Hole, Wyoming, August 29-31, 1996.

THE IMPORTANCE OF THE FEDERAL RESERVE

A JOINT ECONOMIC COMMITTEE REPORT

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March 1997

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THE IMPORTANCE OF THE FEDERAL RESERVE

EXECUTIVE SUMMARY

The Federal Reserve–our Central Bank–is one of the country's most powerful economic institutions. The Federal Reserve is relevant for Congress not only because the Constitution gives monetary powers to Congress but also because Congress created the Fed and, therefore, has critically important responsibilities for Federal Reserve oversight.

This paper provides a brief overview of what Members of Congress should know about the Federal Reserve. It is intended to lay the groundwork for several subsequent papers surrounding issues related to congressional oversight of Federal Reserve monetary policy and the goal of price stability.

Congressional oversight of the Federal Reserve and monetary policy is important because:

- Monetary policy can dominate fiscal policy in certain circumstances.
- Inflation is determined by monetary policy.
- The Federal Reserve influences interest rates.
- The Federal Reserve stabilizes the financial system.

This paper briefly summarizes the structure and operating procedures of the Federal Reserve and comments on the significance of congressional oversight.

THE IMPORTANCE OF THE FEDERAL RESERVE

INTRODUCTION

Although the Federal Reserve–our Central Bank (or monetary authority)–is one of the country's most powerful economic institutions, it is also one of the most misunderstood. For Congress, the Federal Reserve is relevant because (1) the U.S. Constitution (Article I, Section 8) explicitly gives Congress the power over money and the regulation of its value and (2) this responsibility was delegated by Congress to the Federal Reserve; the Federal Reserve was created by an act of Congress. Accordingly, Congress has important responsibilities for overseeing the Federal Reserve and monetary policy.

This paper provides a brief overview of what (and why) Congress should know about the Federal Reserve. A broad-brush overview, it is intended to lay the groundwork for several subsequent papers addressing issues related to congressional oversight of Federal Reserve monetary policy and the goal of price stability.

OUR CENTRAL BANK: THE FEDERAL RESERVE

As the Nation's Central Bank, the Federal Reserve is granted special privileges and so assumes the responsibilities and characteristics of such a bank. It monopolizes the issuance of paper money, serves as banker for both the government and commercial banks, and acts as lender of last resort. The latter, in turn, calls for bank regulatory responsibilities. Since Federal Reserve operations work to centralize reserves (Federal Reserve notes and deposits form a large portion of bank reserves), they entail responsibility for reserve management and hence monetary policy. Two critically important macroeconomic functions of the Central Bank, therefore, are the maintenance and achievement of price and financial system stability (i.e., stable monetary policy and the provision of lender-of-last-resort services).

WHY FEDERAL RESERVE FUNCTIONS ARE IMPORTANT

The importance of congressional oversight of the Federal Reserve cannot be overemphasized. These functions are important, for example, because they imply that the Federal Reserve controls and hence is responsible for

the management of total spending or aggregate demand as well as inflation. In carrying out its monetary policy management (via manipulating reserves), the Federal Reserve influences interest rates–especially short-term rates–as well as foreign exchange rates and other financial market prices. And in times of financial crisis, the Federal Reserve's lender-of-last-resort function stabilizes the entire financial system. The significance of these important considerations is briefly summarized in turn.

- **Management of Aggregate Demand: Monetary Policy Dominates Fiscal Policy.**

  Most economists recognize that total spending or aggregate demand is determined more by monetary policy than by fiscal policy. In other words, if Congress passes tax or spending legislation intended to affect total spending or aggregate demand, these effects can be fully offset or outweighed by changes in monetary policy. Indeed, accurate counter-cyclical fiscal policy–altering budget deficits,[16] to manage economic activity or aggregate demand–is now seen as neither possible nor desirable. Economists no longer agree on even the direction of the economic effects of changing budget deficits, yet all agree that changes in monetary policy do have predictable and potent effects on aggregate demand and economic activity.

  This implies that changes in monetary policy are often a major factor in movements of the business cycle; many booms and re-cessions are directly related to changes in monetary policy. Conversely, stable economic activity is often the result of appropriate, stable monetary policy. For example, in recent years the Federal Reserve deserves credit for instituting a restrained, non-inflationary policy, which not only has helped to stabilize the economic cycle but has helped to stabilize most financial markets as well.

- **Inflation is Determined by Monetary Policy.**

  Federal Reserve monetary policy is also the key determinant of inflation. It is well known that, among other economic effects, inflation can adversely affect savings, distort investment decisions, and be used by government to enhance its tax revenue and reduce its real debt. Inflation works to distort the signals of the price system, the signaling mechanism of a free market economy. Partly for this

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[16]Some economists believe increases in budget deficits stimulate aggregate demand whereas others have argued deficit reduction will stimulate economic activity because of its effects on interest rates.

reason, recent research has shown that higher inflation is associated with lower economic growth. Accordingly, the only lasting contribution monetary policy can make toward fostering long-term economic growth is to promote price stability. Consequently, there is a growing consensus among experts that price stability should be the key objective of monetary policy. Congress can, of course, mandate this objective to the Federal Reserve.

- **Interest Rates Are Influenced by the Federal Reserve.**

  The Federal Reserve also influences interest rates which affect key interest-rate sensitive sectors of the economy such as housing, autos, and investment. More specifically, the Federal Reserve influences interest rates by manipulating reserves. Short-term rates are more directly influenced by Federal policy because its reserve operations involve purchases and sales of short-term government securities which influence bank reserves. Nonetheless, long-term rates are also influenced by monetary policy. Among other influences, for example, long-term rates are affected by changes in inflationary expectations as well as expectations of Fed policy. Nonetheless, the only way monetary policy can sustain lower long-term rates is to promote price stability, thereby removing the influence of both inflationary expectations as well as uncertainty premiums. Certainly, Congress has reason to ensure the provision of lower long-term rates in this way.

- **The Federal Reserve is the Lender of Last Resort.**

  During financial crises, provision of lender-of-last-resort services can stabilize the financial system. The Central Bank, being the ultimate supplier of system-wide reserves, can satisfy sharp increases in reserve or liquidity demand, thereby preventing systemic liquidity shortages and stabilizing the financial system. Failure to provide this function as, for example, occurred in the Great Depression of the 1930s, can be disastrous. On the other hand, liquidity provision prevented any serious financial system fall-out from the sharp 1987 stock market crash and 1989 stock market decline. The Federal Reserve (and by inference the Congress) has responsibility to ensure that lender-of-last-resort safeguards are adequate and in place in case of unforseen financial shocks.

STRUCTURE[17]

The Federal Reserve's organizational structure is unusual, some would say even Byzantine. It is a Federal system made up of (1) a central government agency, the Board of Governors in Washington, D.C., (2) 12 regional banks located in major U.S. cities, and (3) a monetary policy decision-making unit, the Federal Open Market Committee (FOMC), composed of representatives from both the Board and banks.

- **The Board of Governors (BOG).**

  The BOG was established as a Federal agency. It is composed of seven Governors appointed by the President of the United States and confirmed by the Senate to staggered 14-year terms. A Chairman (and Vice Chairman) are also appointed by the President and confirmed by the Senate, for four-year terms. The Board of Governors and its staff of about 1,700 are located in Washington, D.C.

- **Twelve Federal Reserve Banks.**

  Twelve Federal Reserve Banks serve as the operating arm of the Federal Reserve system; they perform a number of functions such as operating a nationwide payment system, supervising certain financial institutions, distributing the nation's currency and coin, and serving as a banker for commercial banks and the U.S. Treasury. Each bank has a President nominated by its board of directors and approved by the Board of Governors. The New York Bank is clearly "the first among equals" since it not only sits in the world's financial center but serves as the Federal Open Market Committee's operating arm, conducting open market operations and foreign exchange intervention. Congress chartered these banks and, consequently, has oversight responsibilities for them.

- **Federal Open Market Committee.**

  The FOMC, the Federal Reserve's key monetary policy decision-making unit, formally meets eight times a year in Washington, D.C.[18] It oversees open-market operations, the principal tool of monetary policy which influences short-term interest rates and determines reserve and monetary growth. It also directs foreign exchange market operations of the Federal Reserve System. The FOMC is made up of the seven Board Members and five of the 12 Reserve

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[17]For a more detailed description, see *The Federal Reserve System Purposes and Functions*, Eighth Edition, 1994.

[18]Other meetings can be held by telephone as needed.

Bank presidents.[19] These presidents bring "grass roots" information to the meetings and, historically, have had relatively conservative voting records due in part to their insulation from political pressures. Notably, the structure described here was designed by Congress and therefore can be changed by Congress.

POLICY OPERATIONS

The Federal Reserve conducts monetary policy principally using open-market operations (purchases/sales of securities) to alter bank reserves and influence short-term interest rates, but it also can employ the discount rate and changes in reserve requirements as policy tools. In so doing, the Federal Reserve uses the Fed funds rate as its key policy instrument. Movements in this rate (relative to other rates) in turn influence a wide array of financial and economic variables with differing time lags. These movements, for example, influence financial market variables (such as other interest rates, foreign exchange rates, commodity prices, and yield spreads), monetary and credit aggregates, measures of economic and business activity, and eventually broad measures of inflation. Because of the long time lags involved between adjustments to Federal Reserve instruments and ultimate policy goals, monetary policy makers look for those variables that are both reliably influenced by Fed policy moves and in turn predictably related to subsequent movements in policy goals; i.e., they look for reliable intermediate guides to policy.

Over the years, controversies about monetary policy have often related to debates over which variables best serve as intermediate policy guides or targets. In the past, for example, Keynesian economists prescribed target variables such as unemployment or interest rates whereas monetarist economists prescribed monetary aggregates as targets. Both of these types of targets, however, have proven unreliable. Currently, the Federal Reserve has no single explicit intermediate policy target. Rather, it uses an eclectic approach, but undoubtedly has paid more attention to movements in financial market variables than previously was the case.

CONGRESSIONAL OVERSIGHT OF MONETARY POLICY

Detailed knowledge of the intricacies and fine points of monetary policy operations, however, is not necessary for successful congressional oversight. Rather, the keys for Congress are to clearly establish a viable objective for the Federal Reserve and to ensure the Central Bank is fully accountable for achieving this goal. This can be fostered by establishing

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[19]The New York Federal Reserve Bank president is a permanent member whereas others attend, but vote on a rotating basis.

appropriate incentives for monetary policy makers as well as mandating enhanced reporting and disclosure requirements related to progress in achieving stated objectives. Oversight, therefore, should promote policy transparency which can help to promote the credibility of a given monetary policy.

Notably, congressional oversight of the Federal Reserve need not imply increased political influence on monetary policy, especially if explicit, objective policy goals such as price stability are established for the Central Bank. Such oversight can actually work to minimize political influence by ensuring Executive Branch sway over monetary policy reflecting their appointments to the Board of Governors is kept in check.

Robert E. Keleher
Chief Macroeconomist

ESTABLISHING FEDERAL RESERVE INFLATION GOALS

A JOINT ECONOMIC COMMITTEE REPORT

Jim Saxton (R-NJ)
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United States Congress

April 1997

Executive Summary

Recently, several Members of Congress have endorsed the concept of price stability as the principal policy objective for Federal Reserve monetary policy. After outlining current institutional arrangements and congressional responsibilities, the reasons why the goal of stabilizing the purchasing power of money is appropriate are detailed. Moreover, this paper demonstrates that such a goal 1) has a rich historical heritage, 2) recently has been successfully adopted in several countries, 3) in effect, implicitly has worked in the United States in recent years, and 4) has already been endorsed by a number of Federal Reserve officials.

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ESTABLISHING FEDERAL RESERVE INFLATION GOALS

INTRODUCTION

Recently, several Members of Congress have endorsed the concept of price stability as the principal policy objective for Federal Reserve monetary policy. After outlining current institutional arrangements and congressional responsibilities, the reasons why the goal of stabilizing the purchasing power of money is appropriate are detailed. Moreover, this paper demonstrates that such a goal (1) has a rich historical heritage, (2) recently has been successfully adopted in several countries, (3) in effect, implicitly has worked in the United States in recent years, and (4) has already been endorsed by a number of Federal Reserve officials.

Although inflation has receded, and hence price stability is no longer a "headline-grabbing" issue, the paper highlights several important reasons why now is the opportune time to adopt such a strategy. The U.S. legislative history of this approach is summarized and essentials of current price stability legislation presented.

In the context of this paper, the policy of price stability will generally refer to inflation targeting whereby target bands are used for changes in some conventional broad price index or measure of inflation.

BACKGROUND: INSTITUTIONAL ARRANGEMENTS, CONGRESSIONAL RESPONSIBILITIES AND PREVIOUS APPROACHES

In order to assess the appropriateness of adopting the monetary policy goal of price stability, some background material—a brief review of the current monetary regime as well as congressional responsibilities—is essential.

The Current Monetary Regime

A cogent description of current monetary institutional arrangements perhaps is best provided by Milton Friedman:

> ... a world monetary system has emerged that has no historical precedent: a system in which every major currency in the world is, directly or indirectly, on an irredeemable paper money standard . . . It is worth stressing how little precedent there is for the present

> situation. Throughout recorded history . . . commodity money has been the rule. So long as money was predominantly coin or bullion, very rapid inflation was not physically feasible . . . The existence of a commodity standard widely supported by the public served as a check on inflation . . . The key challenge that now faces us in reforming our monetary and fiscal institutions is to find a substitute for convertibility into specie that will serve the same function: maintaining pressure on the government to refrain from its resort to inflation as a source of revenue. To put it another way, we must find a nominal anchor for the price level to replace the physical limit on a monetary commodity.[20]

In other words, the emergence of this fiat money, flexible exchange rate system (after the demise of the Bretton Woods System in the early 1970s), means there is no reliable mechanism anchoring the price system; no reliable store or standard of value exists.[21] Instead, the stability of the current monetary regime fully depends on the competence of central bankers to provide these critical functions of a dependable monetary system: to substitute for the reliability of a commodity standard.

Congressional Authority

At the same time, the Congress has clear legal authority over regulating the value of money. Specifically, the U.S. Constitution (Article I, Section 8) explicitly gives Congress the power over money and the regulation of its value. This responsibility was delegated by Congress to the Federal Reserve; the Federal Reserve was created by an act of Congress. This delegation implies that Congress has important responsibilities for overseeing the conduct of Federal Reserve monetary policy.

Of course, at the time of the creation of the Federal Reserve and for most of the period until the demise of the Bretton Woods System, the United States was on some form of commodity standard so that no explicit

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[20]Milton Friedman, "Monetary Policy in a Fiat World," in Money Mischief: Episodes in Monetary History, Harcourt Brace Jovanovich, New York, 1992, pp. 249, 252-4.

[21] Furthermore, current monetary arrangements are unlikely to change in the near future. Specifically, because the potential for sharply changing demands for international monetary reserves is associated with the rapid growth of emerging markets and the evolution of the European Monetary Union, a near-term stable, international monetary anchor appears unlikely.

price anchor mandate was essential.[22] With the emergence of fiat money/flexible exchange rate arrangements in the early 70s, however, such a mandate—which Congress clearly has the authority to implement—is not only appropriate but necessary.

The Failure of Other Approaches

Unfortunately, inappropriate or multiple and conflicting monetary policy goals for the Federal Reserve have been prescribed and found wanting during much of the period since the demise of Bretton Woods. In part, such prescription reflects Keynesian predilection for managing real economic activity and full employment macroeconomic policy goals, culminating in the Full Employment and Balanced Growth Act of 1978 (Humphrey-Hawkins Act). This Act prescribes multiple and conflicting policy goals and, accordingly, has made it more difficult to achieve viable objectives of monetary policy such as price stability.

But (intermediate) monetary targeting for the Federal Reserve also was prescribed during this period. These monetary targets proved less reliable than expected for a number of reasons relating partly to deregulation.

This post-Bretton Woods experience has culminated in the realization that price stability is the single, appropriate goal for monetary policy; a monetary standard securely anchoring the price system is essential. This view is now embodied in current price stability legislation described below.

RATIONALE FOR ADOPTING THE GOAL OF PRICE STABILITY

Given this background, it is natural that Congress should move to consider making price stability the explicit key objective for monetary policy. A number of specific reasons indicate why price stability is the appropriate monetary policy goal; these reasons relate not only to efficient provision of monetary services but to minimizing the many disruptive costs of inflation.

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[22]With the existence of a fixed exchange-rate gold standard at the time the Federal Reserve was created, monetary policy was not seen as a potent tool of government economic policy making. (Federal Reserve policy was guided by the behavior of the gold reserve ratio following Central Bank practice under the gold standard.) Accordingly, congressional oversight was not seen as a high priority responsibility. With the emergence of the fiat system described above, this mechanism has changed, and monetary oversight now is accorded more importance.

- **Price stability enables money to best perform its various functions**: Money can best provide its functions of a medium of exchange, a store of value, and a standard of value under a regime fostering price stability. Such stability anchors the price system so that comparative values can be established and accurately measured.
- **Price stability enables the price system to work better:** Price stability enables the price system—the information or signaling mechanism of free-market economies—to function effectively by directing resources to their most beneficial use. Price stability is associated with both lower inflation volatility and with lower (relative) price dispersion than inflationary circumstances. Lower inflation reduces the variability between individual prices or reduces the noise and distortions in the price system.[23] This allows the price system to better serve its information and allocative functions. As a result, the economy operates more efficiently and therefore grows faster.
- **Price stability promotes transparency, accountability, and credibility**: Explicitly adopting price stability as the principal monetary policy goal serves to promote transparency, accountability, and credibility to monetary policy. Furthermore, explicit inflation targets reduce incentives of the monetary authority to renege or backslide on its commitment to price stability.
- **Price stability enhances fiscal discipline**: Explicit price or inflation targeting prevents the use of inflation as a revenue source for the government. More specifically, price stability minimizes seignorage as well as government's ability to reduce its outstanding debt via inflation. Moreover, price stability minimizes those inter-actions of inflation with non-indexed portions of the tax code that effectively result in higher taxation. Lowering inflation, therefore, in many ways acts like a tax cut by removing these potential sources of revenue.[24]

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[23]See, for example, Guy Debelle and Owen Lamont, "Relative Price Variability and Inflation: Evidence From U.S. Cities," Journal of Political Economy, vol. 105, no. 1, February 1997.

[24]This argument is especially relevant in circumstances when tax limitation provisions and/or balanced budget regimes are being implemented; i.e., when stricter fiscal regimes are put in place. It is in these circumstances that government will look for new revenue sources.

Moreover, adopting the goal of price stability and moving to lower inflation has a number of beneficial economic effects relating to minimizing the disruptive costs of inflation:

- **Price stability lowers interest rates**: A credible, sustained reduction of inflation will lower expectations of future inflation. Accordingly, the inflationary expectations component of interest rates will dissipate from the structure of both short- and long-term interest rates and interest rates will decline.
- **Price stability works to stabilize financial markets and interest-sensitive sectors of the economy**: As inflation diminishes, the variability of inflation also is reduced. Lower inflation is associated with lower volatility of inflation. Accordingly, financial markets have less tendency to overshoot or undershoot their fundamental values. This lower volatility has the effect of reducing uncertainty premiums of interest rates; financial markets tend to become more stable and predictable. Thus, lower inflation stabilizes financial markets. As a result, market participants tend to become more confident or self-assured and more willing to invest, take risk, and innovate. Businesses are better able to plan and coordinate, thereby improving efficiency. Furthermore, this enhanced financial stability works to stabilize interest-rate-sensitive sectors of the economy and, therefore, the macro economy as well.
- **Price stability promotes growth**: By enabling the price system to work better, enhancing fiscal discipline and minimizing tax distortions, lowering interest rates, and helping to stabilize both financial markets and interest-sensitive sectors of the economy, price stability promotes economic growth. Resources can engage in productive activities rather than finding ways to circumvent costs of inflation. Several recent empirical studies have found that lower inflation is associated with higher growth.[25]

[25]See, for example, Robert Barro, "Inflation and Economic Growth," National Bureau of Economic Research Working Paper No. 5326, October 1995; Brian Motley, "Growth and Inflation: A Cross-Country Study," Center for Economic Policy Research, publication no. 395, March 1994; and Todd E. Clark, "Cross-Country Evidence on Long-Run Growth and Inflation," Economic Inquiry, vol. 35, no. 1, January 1997.

ADDITIONAL CONSIDERATIONS

In addition to these important reasons for adopting price stability as the primary goal of monetary policy, a number of additional considerations lend further support to the argument.

(1) Historically, this view has been endorsed by many of the world's most preeminent monetary economists: Support for the goal of price stability under fiat money is, of course, not novel. Many of the economic profession's most revered monetary writers have supported this objective.

Probably history's most famous monetary debate occurred during the Napoleonic era when Britain went off the gold standard. During this period, classical bullionist writers such as Henry Thornton and David Ricardo recognized that under these circumstances the Bank of England had responsibility to regulate the value of money; in effect, to provide a stable monetary standard substitute for gold convertibility. This endorsement of price stability under fiat money was later supported by such eminent economists as John Stuart Mill and Alfred Marshall. Knut Wicksell further refined existing approaches to achieving price stability; his views were widely embraced by other Swedish economists such as Gustav Cassel. Famous British economists during the interwar period such as Ralph Hawtrey and John Maynard Keynes also endorsed price stability as the appropriate goal for monetary policy.[26] The view was also supported by esteemed economists in the United States such as Irving Fisher, Henry Simons and Lloyd Mints, as well as most modern-day monetarists.[27]

(2) Both historical and contemporaneous evidence indicate that the price stability objective can work quite successfully: A good deal of empirical evidence shows that price stability or inflation targeting regimes have worked successfully. Historically, the first such regime was the Swedish price stabilization regime of the early 1930s. Upon suspending gold payments in 1931, Swedish authorities explicitly announced the adoption of a price stability standard, a monetary policy explicitly directed to stabilize the internal purchasing power of the krona. The policy was remarkably successful: prices were stabilized, contributing significantly

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[26]This support is especially evident in Keynes' Tract on Monetary Reform, as well as his Treatise on Money.

[27]A history of the price stabilization movement was published by Irving Fisher in 1934. See Stable Money: A History of the Movement. Adelphi Co., New York, 1934.

to the stability of the domestic economy and insulating the Swedish economy from the 1930s' worldwide depression.[28]

More recently, the single monetary policy goal of price stability has been successfully implemented in a number of countries. Explicit, quantifiable inflation targets have been adopted by Canada, the United Kingdom, Australia, New Zealand, Sweden, Spain, and Finland. In fact, the summary of a recent conference sponsored by the Federal Reserve proclaimed that, "Central banks throughout the world are moving to adopt long-term price stability as their primary goal."[29] The evidence to date indicates these policies have been quite successful. Those countries adopting a price stability goal, for example, significantly improved their inflation performance. Specifically, they have all dramatically lowered their inflation rates since adopting targets for inflation, often to lower rates not observed for decades. Several of these countries reached their inflation objectives well ahead of schedule; inflation targets have often been met or undershot. Preliminary studies have shown that those countries adopting explicit inflation targets have outperformed other countries not only in terms of lowering inflation but in a number of other criteria as well.[30] This evidence underscores the argument that explicit, quantifiable goals of price stability can be implemented successfully.

(3) Recent Federal Reserve policy focus on price stability has also been successful: The Federal Reserve's emphasis on price stability in recent years has also worked to lower inflation, thereby contributing to the sustainability of the current expansion. While the Federal Reserve has not adopted explicit, quantifiable inflation targets like the central banks of countries cited above, Federal Reserve officials have repeatedly endorsed price stability in speeches, testimony, interviews, and official publications. The preemptive policy move to tighten monetary policy beginning in

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[28]The Swedish experience led Irving Fisher to assert that "This achievement of Sweden will always be the most important landmark up to its time in the history of (price) stabilization," Irving Fisher, Stable Money, Adelphi Co., New York, 1934, pp. 408-9. (parenthesis added). For further documentation of this episode, see Manuel Johnson and Robert Keleher, Monetary Policy, A Market Price Approach, chapter 13, Quorum Books, Westport, Connecticut, 1996.

[29]George A. Kahn, "Achieving Price Stability: A Summary of the Bank's 1996 Symposium," Economic Review, Federal Reserve Bank of Kansas City, vol. 81 no. 4, fourth-quarter 1996, p. 53.

[30]See, for example, Bennett T. McCallem, "Inflation Targeting in Canada, New Zealand, Sweden, the United Kingdom, and in general," National Bureau of Economic Research Working Paper no. 5579, May 1996. p. 9.

February 1994 demonstrated that these public pronouncements were genuine and so this move not only worked to reduce inflation but also enhanced the central bank's inflation fighting credibility.

This credible disinflation policy has worked to lower interest rates, stabilize financial markets and interest sensitive sectors of the economy, promote the efficient operation of the price system, and, in effect, act like a tax cut in many ways.[31] All of this has contributed to promoting the sustainability of the expansion and further demonstrates the value of price stability as a principal policy goal.

(4) Price stability as the principal goal of monetary policy has already been endorsed by several Federal Reserve policy-makers: Adopting price stability as the primary goal of monetary policy has received the support of many academic economists as well as many officials and policy-makers of the Federal Reserve system itself. For example, Federal Reserve regional bank presidents from the New York, Richmond, St. Louis, San Francisco, and Cleveland banks have all explicitly endorsed price stability as monetary policy's primary policy goal.

THE OPPORTUNE TIME TO ADOPT TARGETS FOR PRICE STABILITY

Although inflation has receded and hence price stability is no longer a "headline-grabbing" issue, there are several important reasons why now is the opportune time to adopt targets for price stability:

- **Cement current gains**: Adopting targets for price stability would ensure the many beneficial economic effects of low inflation are maintained. Such targets are easiest to implement when inflation is already low, political opposition is relatively weak, and price stability has attained a degree of credibility as a proper goal for monetary policy. In short, the current period is the politically opportune time to cement gains and credibility that have been achieved, thereby minimizing the costs of moving to price stability.[32] Adopting formal price stabilization goals now when

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[31]See Robert Keleher, *The Roots of the Current Expansion*, a Joint Economic Committee study, April 1997, for a more detailed discussion of the contribution of monetary policy to the sustainability of the expansion.

[32]Targets for price stability should be introduced when there is a realistic chance of reducing inflation (i.e., when inflation is low or trending down); credibility is an important reason for targets and hitting the first target is especially significant for establishing credibility. See Charles Freedman, "The Canadian Experience with Targets for Reducing and Controlling Inflation," Inflation

political barriers are relatively low ensures that procedures for maintaining price stability are in place when inevitable difficult tightening decisions have to be made in the future.

- **Remove incentives to backslide**: As memories of high inflation fade, interest groups increasingly emphasize near-term benefits of stimulative monetary policy; demands for monetary relief from adverse changes in interest rates, foreign exchange rates, or output proliferate. Implementing explicit targets for price stability would serve to insulate the Federal Reserve from such political pressures.

Furthermore, without targets for price stability, incentives grow for inflationary policies when inflation is low. Specifically, short-sighted policy-makers recognize that surprise (unexpected) expansionary policies are more potent than expected policy changes. So when inflation is reduced and is expected to remain subdued, stimulative policies that are a surprise have a larger economy-boosting impact. In short, as inflation is reduced, incentives increase for policy-makers to unexpectedly stimulate the economy. Pre-commitments to explicit price targets reduce these perverse incentives.[33]

- **Govern by rules rather than by men**: While the Federal Reserve has performed admirably under the regimes of Chairmen Volcker and Greenspan, there is no guarantee that it will continue to perform so well in the future under different management. Institutionalizing the goal of price stability will help ensure that Federal Reserve performance depends more on a transparent system of rules rather than upon the vagaries of individuals and is less prone to political manipulation or pressure. Adopting such rules would provide a political buffer, preventing future administrations from manipulating monetary policy when there are incentives to do so.
- **Prevent the use of inflation as a source of government revenue**: Continued pressures on fiscal policy to balance the budget, resolve entitlement problems, and limit taxation will induce government policymakers to look for alternative revenue sources. Inflation, after all, can serve as a mechanism to finance government spending and reduce real government debt. Adopting explicit rules for price stability would prevent the use of monetary policy for such purposes.

Targets, edited by Leonardo Leiderman and Lars Svensson, Center for Economic Policy Research, Glasgow, 1995, p. 28.

[33]In economic jargon, this is referred to as the "time inconsistency" problem.

ALLOWANCE FOR FLEXIBILITY

One of the key criticisms of adopting inflation targets is that such a strategy would remove monetary policy's flexibility. With fiscal policy constrained so that it cannot be used for stabilization policy, it is argued that monetary policy is the only tool left for this purpose and therefore should remain relatively unencumbered.

This criticism seems misplaced for several reasons. Certainly the international experience with inflation targeting provides ample evidence that, in practice, inflation targets leave room for a good deal of flexibility. In particular, inflation targets normally consist of bands rather than point estimates. They are usually multi-year in nature. The relevant targeted inflation index often is adjusted for volatile (supply-side) components. And even after such adjustment, some countries (e.g., New Zealand) allow for further exceptions to specified targets. All of these considerations allow for considerable flexibility, yet maintain a focus on long-term price stability.

Furthermore, if unanticipated shocks are "demand-side" in nature, inflation targets automatically direct appropriate monetary policy responses that work to stabilize the economy. Finally, by adopting inflation rather than price level targets, some accommodation of unanticipated one-time supply-side shocks are allowed for (i.e., inflation targets do not require offsetting deflation and hence associated economic disruption as do price level targets).[34] In sum, inflation targets retain a good deal of flexibility for monetary policy.

LEGISLATIVE HISTORY

In the United States, legislation mandating price stability for monetary policy is not new. As ably documented by Irving Fisher, a series of bills to stabilize the purchasing power of money or the general price level were introduced and re-introduced during the 1920s and 1930s.[35] The most prominent sponsors of these bills were T. Alan Goldsborough (MD)

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[34]Because offsetting deflation is not required by inflation targets, these targets embody "base drift" (an ever-increasing price level). In other words, inflation targets imply that the price level becomes "non-stationary"; once disturbed, the price level does not return to its previous level. Because of this characteristic, inflation targets are associated with greater long-term variance and uncertainty of prices. Nonetheless, because inflation targets enhance policy flexibility, they are viewed as more realistic politically.

[35]See Irving Fisher, *Stable Money: A History of the Movement*, Adelphi Co., New York, 1934 (see chapters V and VI).

and James A. Strong (KS). Congressional hearings were held on several of these price stabilization bills and during these hearings, the idea of price stabilization received significant support from academics, businessmen, and farmers. Opposition came from various officials of the Federal Reserve System.[36]

The Goldsborough Bill mandating price stability passed the House of Representatives on May 2, 1932 by an overwhelming vote of 289-60.[37] The Bill, however, was blocked in the Senate principally by Senator Carter Glass (Federal Reserve officials testified in opposition to the Bill).

Price stability, of course, has been identified as one of several economic objectives mandated to the Federal Reserve as embodied in the Employment Act of 1946 and the Full Employment and Balanced Growth Act of 1978 (Humphrey-Hawkins Act). The need to focus primarily on price stability, however, re-emerged as a legislative priority in the Neal Resolution. This congressional Resolution instructed the Federal Reserve to gradually eliminate inflation within five years and then to maintain price stability. The initiative, however, remained in committee.

CURRENT PRICE STABILITY LEGISLATION

The Mack-Saxton Bill was introduced during the 104th Congress in September 1995 and reintroduced during the 105th Congress in April 1997. The Bill includes the following features:

- Establishes long-term price stability as the primary goal of Federal Reserve monetary policy.
- Repeals the Full Employment and Balanced Growth Act of 1978 (Humphrey-Hawkins Act) and the multiple policy goals mandated by this Act; amends portions of the Employment Act of 1946.
- Places responsibility on the Federal Reserve to numerically define price stability and set the time table for achieving it.
- Requires the Federal Reserve to report to Congress semi-annually and provide information on the numerical progress toward achieving the price stability goal.

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[36]Governors Strong, Harrison, and Norris as well as Board members Meyer, Miller, and Young voiced opposition to the idea. Director of Research Goldenweiser also opposed the idea during such hearings. See Fisher, pp. 150-206.

[37]This bill mandated price stability and additionally gave the Federal Reserve the power to raise or lower the price of gold when necessary. See Fisher pp. 186-7.

- Requires the Federal Reserve to describe variables used to gauge its own progress toward price stability and to report to Congress when it changes methods for measuring its own progress.

As these features suggest, the Bill is a significant step forward in moving to make long-run price stability a reality. But the legislation may not be the final word on this issue. Continued progress on this front, for example, might include additional ingredients to:

- Allow for significantly improving the transparency of monetary policy; specifically, requiring that Federal Reserve reporting and disclosure be more timely, frequent, thorough and detailed as well as more accessible to the public. This might involve, for example, requiring an explicit "inflation report" detailing the inflation outlook to be presented at more regularly scheduled congressional oversight hearings.
- Promote the transparency of Federal Reserve and Treasury exchange rate policy and clarify the relationship of this policy to mandated Federal Reserve inflation goals. Such clarification would involve identifying the precedence of inflation objectives vis-a-vis exchange rate policy as well as simplifying and clarifying related decision-making processes.
- Require the Federal Reserve to identify before the fact what remedial action will be undertaken should price stability goals not be achieved.

IMPLICATIONS FOR CURRENT MONETARY POLICY

Regardless of the success of price stability legislation in the United States Congress, the Federal Reserve should move forward on several fronts unilaterally to adopt these features fostering price stability and enhanced transparency. Doing so will not only promote the credibility of monetary policy but will also help to remove uncertainties spawning unnecessary market volatility. These actions will enable market prices to serve as more reliable sources of information and policy indicators and furthermore will foster improved market discipline on monetary policy.

SUMMARY AND CONCLUSIONS

Currently, our fiat money system has no reliable price anchor or standard of value. At the same time, Congress has the legal authority and oversight responsibility for regulating the value of money and providing for such an anchor. There are many reasons for and benefits from adopting price stability as the primary goal of monetary policy. This objective has been endorsed not only by many of the world's most

esteemed monetary economists but also by many Federal Reserve officials. Both historical and contemporary evidence demonstrates that such a strategy works quite well. Furthermore, the approach allows for ample monetary policy flexibility; there are many reasons why this approach should be adopted now.

The time has come to introduce price stability as a legislative goal. Current price stability legislation is not the first to advocate stable money, but it offers much of what was the best in earlier initiatives. Such legislation deserves the support of both Houses.

Robert E. Keleher
Chief Macroeconomist

THE ROOTS OF THE CURRENT EXPANSION

A JOINT ECONOMIC COMMITTEE REPORT

Jim Saxton (R-NJ)
Chairman
Joint Economic Committee
United States Congress

April 1997

Executive Summary

After briefly summarizing recent macroeconomic experience, this paper explains why the current economic expansion has been sustained -- despite growing tax burdens partly related to the Budget Act of 1993.

The key reasons for this sustained recovery include:

- The economic and financial market stabilizing effects of a credible anti-inflationary monetary policy.
- The fact that monetary policy has produced stable growth in total spending dominating fiscal policy's influence on both aggregate demand and interest rate movements.

The paper concludes with an assessment of the longer term prospects for growth.

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THE ROOTS OF THE CURRENT EXPANSION

INTRODUCTION

After briefly summarizing recent macroeconomic experience, outlining salient features of the current expansion, and discussing likely near-term trends, this paper explains why the current expansion has been sustained–despite growing tax burdens partly related to the Budget Act of 1993.

The key reasons for this sustained recovery include:

- the economic and financial market stabilizing effects of a credible anti-inflationary monetary policy;
- the fact that monetary policy has produced stable growth in total spending, dominating fiscal policy's influence on both aggregate demand and interest rate movements; and
- the export-promoting effects of lowered tariff barriers and free trade.

The paper then briefly assesses both longer term economic prospects and likely future Federal Reserve policy action.

RECENT PERFORMANCE OF THE MACRO ECONOMY

The current economic expansion is now six years old and continues to proceed at a moderate, albeit below-normal pace. Despite a frequent "saw-tooth pattern" in various month-to-month or quarter-to-quarter economic statistics, the current expansion has persisted, now ranking among the longer post-World War II economic expansions. Furthermore, this sustained expansion is expected to continue into the foreseeable future since no obvious cyclical imbalances are evident that have disrupted earlier recoveries.[38]

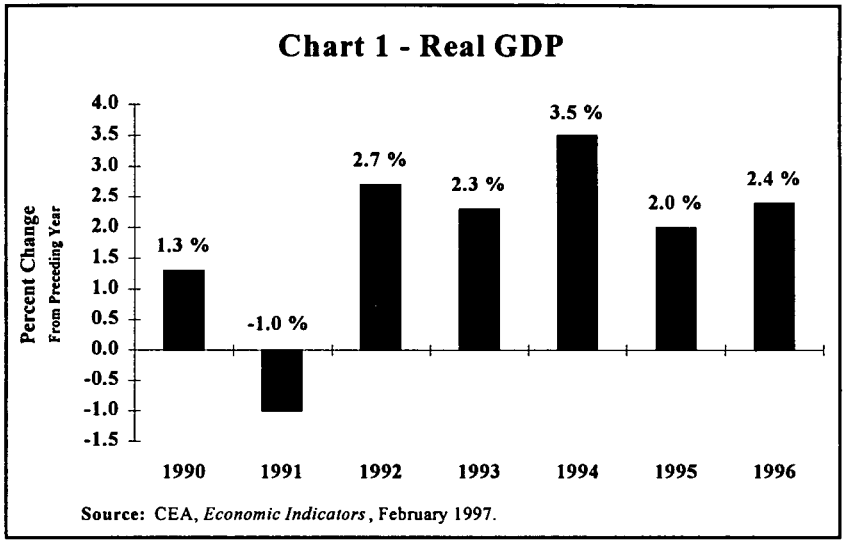
Characteristics of the Current Expansion

A Sustained Recovery

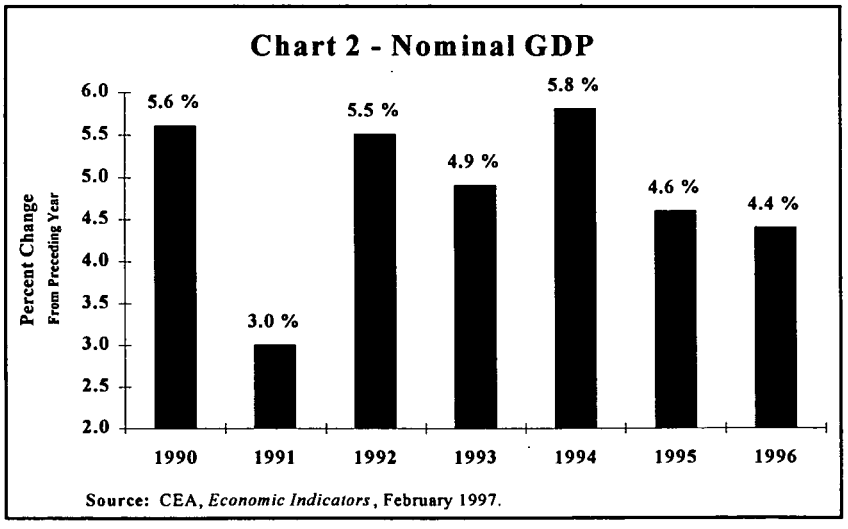
While the current expansion would rank below average in terms of its overall strength compared to earlier recoveries of comparable length, this recovery has been remarkably sustained. Real gross domestic

[38]In particular, inventory imbalances, corporate or bank balance-sheet distortions, overbuilding in the construction industry, resurgences of inflation, or sharp interest rate increases are neither evident nor expected.

product (GDP) growth, for example, has averaged 2.4 percent compared to earlier expansions of similar length of about 3.6 percent (see Chart 1).

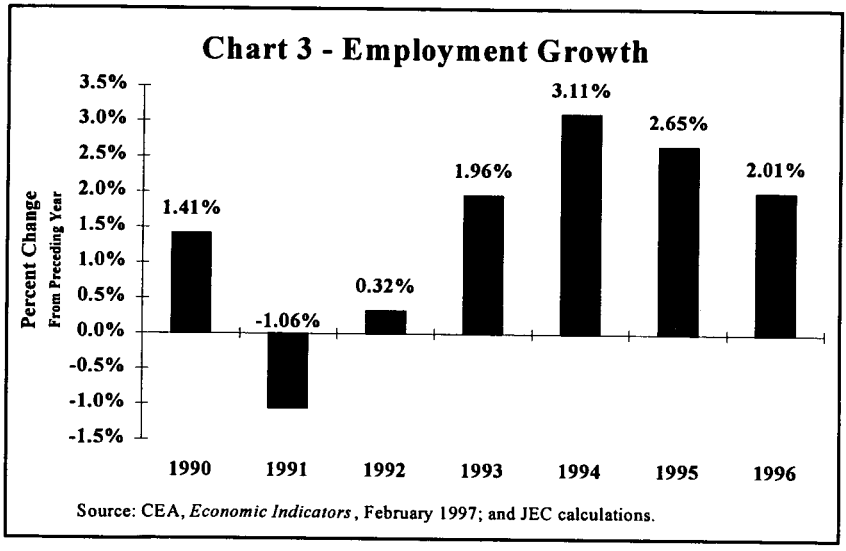


Yet, the recovery has lasted 72 months compared to the average postwar peacetime expansion of 43 months.[39] Similarly, nominal GDP growth has expanded at a sustained pace of 5.0 percent, somewhat below its typical postwar recovery growth rate (see Chart 2).

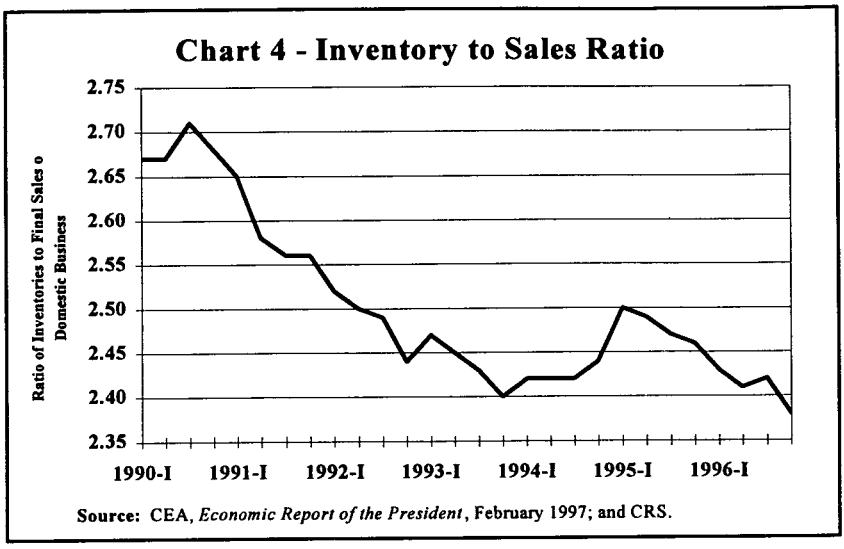


[39]Source: National Bureau of Economic Research, Inc.

Other aggregate measures of economic activity tell a similar story. The expansion's employment growth, for example, has been sustained, but below average when compared to earlier cycles (see Chart 3). Partly because of weak labor force growth, however, the unemployment rate has dropped considerably to 5.3 percent. This recovery's increases in wage income and productivity growth have been especially sluggish by historical standards. In fact, real median weekly earnings have actually fallen since 1993; annual data show a continuous decline of real earnings during this period. These earnings data suggest some groups have not participated in the recovery. Specifically, unlike during previous expansions, many middle class income earners have not shared in the gains attained by others during this expansion.



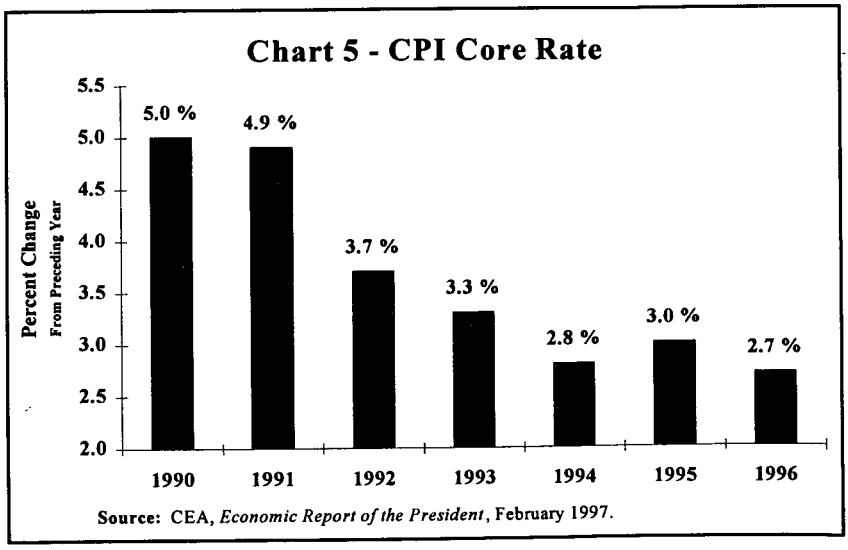
While most private-sector GDP components have shared in this moderate below-average growth, a few sectors have made notable, healthy contributions. One such sector which led the recovery was investment spending, especially equipment investment. Information processing investment accounts for a sizable portion of this increase. Another notable sector contributing significantly to the recovery was the export sector. Export growth has consistently exceeded GDP growth; therefore, this sector's GDP share has steadily grown during this expansion. Inventory investment, however, has been increasingly better managed, as evidenced by lower inventory/ sales ratios (see Chart 4). This development, of course, enhances the likelihood of continued



economic expansion since it minimizes the likelihood of important inventory corrections.

Lower, More Stable Inflation

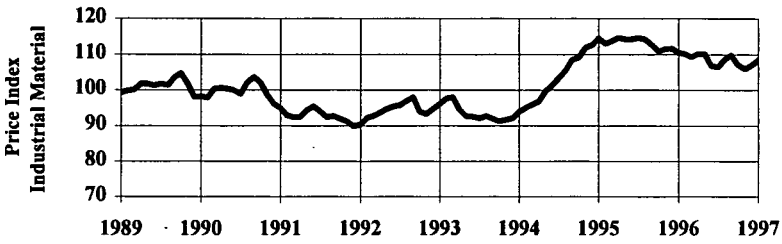
Another important characteristic of this expansion is the notable absence of inflationary pressures that have often plagued previous recoveries. Most broad-based measures of inflation (such as GDP deflators, the Consumer Price Index, and the Producer Price Index) have been remarkably well-behaved (see Chart 5). Similarly, wage costs



remain relatively tame despite unemployment rates remaining below these levels previously associated with rising price and wage pressures. Furthermore, forward-looking market price indices (such as various commodity price indicators), which in the past have accurately signaled rising expectations of future inflation, currently remain well behaved (see Chart 6).[40]

Chart 6 - Commodity Prices

Monthly Data



Source: *Journal of Commerce*, "Industrial Materials Price Index," 1997.

This benign inflation performance has a number of important implications which will be further examined below. Nonetheless, it is important to note that the gradual diminution of inflation and expectations of future inflation have been associated with a gradual reduction of both short- and long-term interest rates (see Charts 7 and 8). At the same time, it is noteworthy that this lower, more stable inflation is associated with reduced inflation volatility (as well as lower volatility of inflationary expectations). Accordingly, those financial markets sensitive to inflation expectations will be more stable than otherwise. This enhanced financial market stability is evident in recent years' performance of the bond, money, commodity, foreign exchange, and equity markets.

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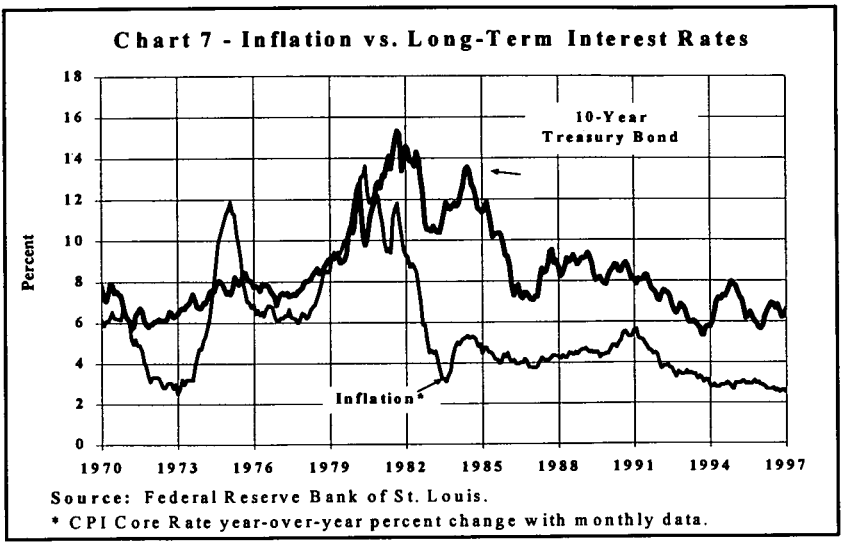
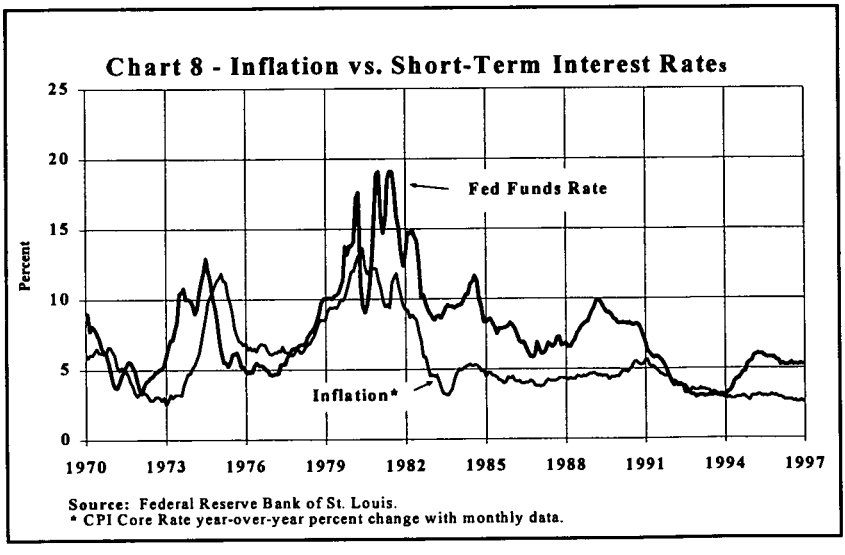
[40]Commodity prices (as measured by the *Journal of Commerce* commodity price index) began increasing in late 1993. This increase was soon accompanied by a 300 basis-point increase in the Fed funds rate (from February 1994 to late January 1995). In short, the Federal Reserve responded to forward-looking signals of heightened inflationary expectations and acted pre-emptively to stifle such expectations before the increases became self-fulfilling.





Expansion Expected to Continue

The current expansion is expected to continue; consensus forecasts call for continued expansion of real GDP in the neighborhood of 2.5 to 3.2 percent in 1997. The reason for this expected continued expansion is that no important imbalances have emerged that typically have derailed expansions in the past. In particular, inflation appears to be in check with

little evidence of an imminent resurgence. Accordingly, none of the imbalances typically associated with inflation or expected inflation are evident; i.e., neither individuals nor businesses appear to be making decisions based upon expectations of important increases in inflation. More specifically, total debt is rising but relatively slowly, and the overall balance sheets of individuals, businesses, as well as banks appear to be in reasonably good shape. Banks, for example, are much better capitalized than they were earlier in the decade. The commercial real estate overbuilding which characterized the late 1980s appears to be significantly worked off. Inventories are increasingly better managed with current inventory-to-sales ratios low by historical standards.[41]

Furthermore, no important policy adjustments are anticipated that could derail the recovery. Should monetary policy be adjusted, sharp interest rate movements are not anticipated; the Federal Reserve appears to be close to a "neutral" monetary policy stance so that any changes will likely be marginal in nature. Currently, only a modest Federal Reserve tightening is imbedded in short-term interest rate futures markets. Similarly, no sharp change of fiscal policy is anticipated that might disrupt the economic expansion; viewed from a conventional perspective, fiscal policy is expected to remain modestly restrictive since it has been constrained by concerns about budget balance.

REASONS FOR THE SUSTAINED ECONOMIC EXPANSION

Perhaps the distinguishing characteristic of the current expansion is its **sustainability**. In particular, this expansion has persisted despite recent increases in tax (and regulatory) burdens as epitomized by the Budget Act of 1993. The expansion has continued because certain positive factors have worked to offset the perverse effects of these recent tax increases. The key positive ingredients contributing to this offset include: 1) the potent stabilizing effects of a credible price stabilizing monetary policy; 2) the stable expansion of aggregate spending and output which has been principally determined by monetary, not fiscal, policy and which has contributed significantly to reduction in the budget deficit, and 3) the export-promoting effects of lowered tariff barriers.

The Stabilizing Effects of a Credible, Price-Stabilizing Monetary Policy

A key ingredient of recent Federal Reserve monetary policy has been a persistent emphasis on price stability as a key policy objective.

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[41]Both lower, more stable information and technological advances partly explain this improved management.

Federal Reserve officials have repeatedly endorsed the goal of price stability in speeches, testimony, interviews, and official publications. The pre- emptive policy move to tighten monetary policy, beginning in February 1994, was important in demonstrating that these public pronouncements were genuine; the move also served to condition market expectations, thereby, enhancing the Federal Reserve's inflation-fighting credibility. Market participants now expect Federal Reserve policy action at the first signs of resurgent inflation.

As a result of these actions, most broad-based measures of inflation registered modest increases and continued to moderate. Indeed, a sustained reduction of inflation has brought some broad-based measures of inflation to their lowest rates of inflation in 30 years.[42] And few signs suggest that a meaningful resurgence of inflation is imminent.

This credible, sustained reduction in inflation has several very important implications relating to the durability of the expansion:

- **Lowers interest rates:** First, this convincing, sustained reduction in inflation has gradually lowered expectations of future inflation. Accordingly, the inflationary expectation's component of interest rates dissipated from the structure of both short- and long-term interest rates ; interest rates are lower as a result (see Charts 7 and 8).

- **Stabilizes financial markets and interest sensitive sectors:** Second, as inflation diminishes, the variability of inflation also is reduced. Lower inflation is associated with lower volatility of inflation. Accordingly, financial markets have less tendency to overshoot or undershoot their fundamental values. This lower volatility has the effect of reducing uncertainty premiums of interest rates; financial markets tend to become more stable and predictable. In short, lower inflation stabilizes financial markets.

  As a result, market participants tend to become more confident or self-assured and more willing to invest, take risk, and innovate. Businesses are able to better plan, coordinate, and control inventories, thereby improving efficiency. Furthermore, this enhanced financial stability works to stabilize various interest-rate

[42]GDP prices in fourth-quarter of 1996 measured by the chain-type GDP price index, for example, registered the lowest year/year percent change in 30 years.

sensitive sectors of the economy and, therefore, the macro economy as well.[43]

- **Enhances workings of the price system:** Third, lower inflation is associated with lower (relative) price dispersion. Lower inflation lowers the variability between individual prices or reduces the noise and distortions in the price system.[44] As a result, the price system can better serve its information and allocative functions. Consequently, the economy operates more efficiently and, therefore, grows faster.
- **Acts like a tax cut:** Fourth, lower inflation is analogous to a tax cut in several important ways. Like a tax cut, for example, lower inflation removes distortions in the price system. Lower inflation minimizes those interactions of inflation with existing non-indexed portions of the tax code that effectively result in higher taxation.[45] Furthermore, lower inflation effectively lessens inflation as a source of government revenue; it minimizes seignorage as well as government's ability to reduce its outstanding debt via inflation.

In short, credible disinflation works to lower interest rates, stabilize financial markets and interest-sensitive sectors of the economy, promote efficient operation of the price system, and effectively lower taxation. All of these effects contribute to promoting the sustainability of the expansion.

The Gradual but Stable Deceleration of Total Spending

Another contribution to the expansion's persistence has been the Federal Reserve's management of nominal aggregate demand; the macro economy has experienced a very gradual but stable deceleration of

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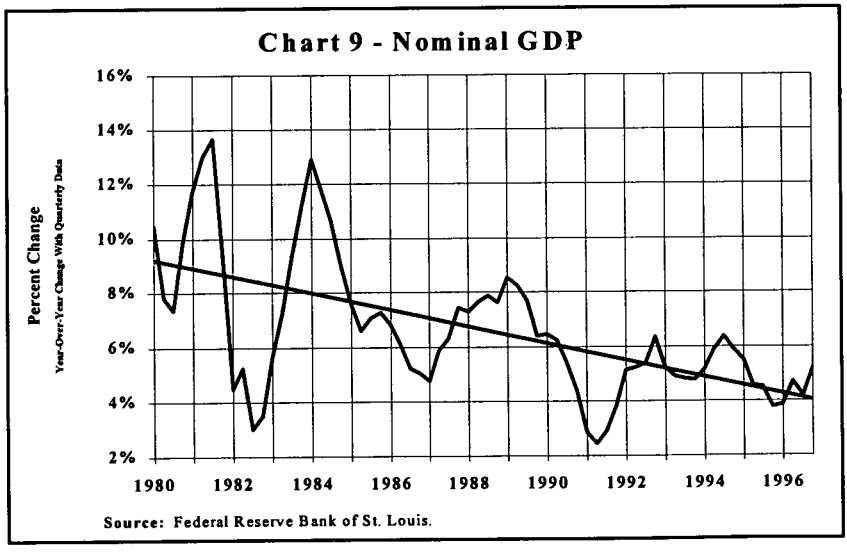
[43]This enhanced stability is documented in G. Bigg, "Why Has the Economy Become Less Volatile?," Prudential Economics, November 1996, volume 12, number 11. This analysis shows that real GDP growth has become less volatile in recent years. The standard deviation of real GDP growth has fallen significantly from 1985 (as has a moving 20-quarter-standard deviation of real GDP growth). The primary reason for this reduction is a large decline in the volatility of the interest rate sensitive sectors of the economy (consumer durables, equipment investment, and residential spending).

[44]See, for example, Guy Debelle and Owen Lamont, "Relative Price Variability and Inflation: Evident from U.S. Cities," Journal of Political Economy, February 1997, vol. 105, no. 1.

[45]Remaining portions of the tax code that are not indexed, for example, include capital gains taxation, estate taxation, and forms of corporate taxation.

aggregate spending. Nominal aggregate spending is principally determined by monetary, not fiscal, policy, and it must be reduced in order to diminish inflation.[46] Accordingly, the way in which the Federal Reserve manages the required reduction in aggregate spending is important in determining the expansion's durability.

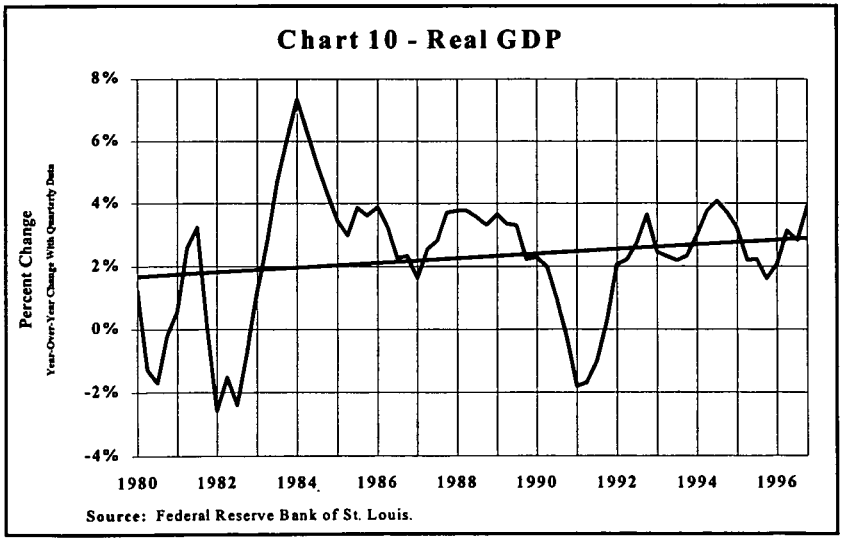
In recent years, the Federal Reserve – while maintaining a focus on price stability – has conducted monetary policy so as to foster the forward momentum of spending growth while at the same time very gradually reducing its growth. This has worked to slowly squeeze inflation out of the system while at the same time allow for stable real GDP growth. Specifically, the Federal Reserve has adopted a "gradualist" approach to managing aggregate demand so that nominal GDP growth decelerates in a very gradual manner. Over the last 12 quarters, for example, nominal GDP growth has advanced at about 5 percent annualized. The Fed's central tendency forecast for fourth-quarter



[46]Articles reviewing the argument that monetary policy dominates fiscal policy as a determinant of aggregate spending include, for example, Bennet T. McCallum, "Monetary Versus Fiscal Policy Effects: A Review of the Debate," in The Monetary Versus Fiscal Policy Debate: Lessons From Two Decades, edited by R. W. Hafer, Rowman & Allanheld Publishers, Totown, N.J., 1986 (see esp. pp. 10, 23-24); and Lawrence Meyer and Robert Rasche, "Empirical Evidence on the Effects of Stabilization Policy," Stabilization Policies: Lessons From the '70s and Implications for the '80s, Center for the Study of American Business, 1980 (see pp. 51,54).

nominal GDP for 1997 over 1996's fourth-quarter is 4.50 to 4.75 percent. Thus, the Federal Reserve expects a modest slowdown. Nominal GDP's growth since the early 1980s has two important characteristics: downward long-term trend growth and successively lower peaks in nominal GDP growth (see Chart 9).

The Federal Reserve, therefore, has not attempted to achieve price stability too quickly, to avoid jolting or shocking the economy into a slowdown or recession. By avoiding such sharp disruptions, monetary policy has not been subject to the subsequent strong political pressures to "jump start" or reinflate the economy, thereby re-introducing the type of stop-go policies that historically produced policy-induced business cycles. By conducting policy in this gradualist manner, the Federal Reserve has sustained the expansion. Real GDP growth, for example, has persisted, albeit at a below-normal rate of about 2.6 percent annualized since the expansion began in the second-quarter of 1991. Notably, unlike the downward stopping trend characterizing the growth of nominal GDP, real GDP trend growth is positive, albeit only modestly so. Furthermore, successive peaks in real GDP do not show the downward trend evidenced by those of nominal GDP (see Chart 10).



The stable growth in GDP in recent years not only has fostered the durability of the current expansion but has contributed importantly to

reducing the Federal budget deficit.[47] Tax revenues, for example, have consistently been stronger than expected. In promoting the above-described stable growth in total spending, monetary policy has dominated fiscal policy's influence on both aggregate demand and interest rates.[48]

The Export-Promoting Effects of a More Open Economy

Persistent growth in exports, related to lower trade barriers implemented in recent years, has also contributed to the sustained nature of this expansion. The U.S. economy has become increasingly open as measured by the fraction of GDP accounted for by the sum of what is exported and imported.[49] Moreover, export growth has exceeded GDP growth in every year of this expansion. Accordingly, exports have become a steadily larger fraction of GDP (increasing from about 10 percent in 1991 to about 12 percent in 1996). The U.S. dollar, of course, has helped to foster this export growth since, in general, it has been relatively stable, especially when viewed historically and measured on a trade-weighted basis. Furthermore, the growth and increasing openness of newly emerging markets also have supported this growth and have helped exports contribute to the sustained U.S. expansion.

LONGER TERM PROSPECTS FOR GROWTH

While near-term economic activity has been sustained principally by the judicious, gradual disinflation of the Federal Reserve, monetary policy's ability to enhance long-term economic growth is limited to minimizing the growth-inhibiting effects of inflation. Monetary policy, therefore, can help to foster an environment in which growth can occur but has little influence on actually promoting the long-term growth potential of the economy.

As indicated above, while this expansion's longevity is impressive, its overall strength is well below that experienced in typical recoveries

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[47]For documentation of this assertion, see Christopher Frenze, *Whither the Budget Deficit--And Economy?*, Joint Economic Committee study, July 1996.

[48]For a survey of the relationship between deficits and interest rates, see George Iden and John Sturrock, "Deficits and Interest Rates: Theoretical Issues and Empirical Evidence," Staff Working Papers, Congressional Budget Office, January 1989.

[49]This fraction has steadily increased in recent years to about 25 percent and increased more during this expansion than in previous expansions of similar length. See, for example, Gail Makinen, "The Current Economic Expansion: How Does It Compare with the Past," Congressional Research Service report for Congress, June 1996.

in the past. Furthermore, such modest growth is expected to persist into the foreseeable future. Part of the reason for this below-average performance has been perverse fiscal and regulatory policy in recent years. Although marginal income tax rate increases in 1990 and 1993 retraced only a portion of the marginal rate cuts of the 1980s, other forms of taxation have steadily increased. Increases have occurred in payroll taxes, excise taxes on gasoline, alcohol, tobacco, and various luxuries, state and local taxes, and federal user fees. Additionally, because significant portions of the tax code are not indexed for (persistent, albeit lower) inflation, taxation has effectively increased for unindexed items such as capital gains, estate taxation, and various aspects of corporate and capital taxation. Also, our progressive income tax system–while indexed for inflation–is not adjusted for real growth. Hence, as the economy grows, individuals eventually are pushed into higher tax brackets. Much of this increased taxation not only creates distortions (and adds to deadweight loss) but it adds to multiple layers of taxation on saving and investment, thereby adversely affecting incentives to save, invest, and innovate, consequently thwarting longer term growth. All of these factors help to explain why taxation as a percentage of GDP has increased to record levels in recent years.[50]

In addition to this increased taxation, regulatory burdens have also increased substantially since the late 1980s. Available measures of the costs of regulation show a substantial increase in regulatory costs since about 1988. One study, for example, documents that total macro-economic regulatory costs increased about 23 percent from 1988 to 1996.[51] Such regulatory burdens have been shown to adversely affect economic growth.[52]

In order to improve on this recent subpar growth, policies focusing on and promoting long-term growth are essential. A variety of policy initiatives are consistent with such a goal. They include tax reforms reducing the multiple layers of taxation on saving or capital (and moving

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[50]In 1996, total government receipts as a percent of GDP rose to 30.4 percent. *Historical Tables:Budget of the United States Government*, Fiscal Year 1998, Table 15.1, p.260.

[51]See Thomas D. Hopkins, "Regulatory Costs in Profile," Center for the Study of American Business, Washington University in St. Lousis, Policy Study Number 132, August 1996, p.6.

[52]See, for example, Wayne B. Gray, "The Cost of Regulation: OSHA, EPA, and The Productivity Slowdown," American Economic Review, December 1987, vol.77, no.5, pp. 993-1006.

toward consumption-based taxation); spending control (and privatization); persistent deregulation efforts; continued open-market, free-trade policies; and a price stabilizing monetary policy.

Inflation should remain well contained with the Fed's likely continued commitment to price stability. This commitment would be enhanced with explicit inflation targeting, which has already been successfully adopted by a number of other countries.[53] (Expanded issuance of inflation-indexed bonds by the U.S. Treasury might also enhance the credibility of such an inflation targeting effort.) Moreover, Federal Reserve attention to key forward-looking market price indicators might also contribute to the necessarily pre-emptive nature of such efforts.

Robert E. Keleher
Chief Macroeconomist

[53]See Robert E. Keleher, *Lessons from Inflation Targeting Experience*, Joint Economic Committee Report, February 1997.

A RESPONSE TO CRITICISMS OF PRICE STABILITY

Jim Saxton (R-NJ), Chairman

Joint Economic Committee
United States Congress

September 1997

Executive Summary

A number of criticisms have been directed at the strategy of mandating price stability as the primary goal for monetary policy. These criticisms have been addressed in this paper and shown not to withstand scrutiny. Price stability remains a viable policy goal. In particular:

- **Price stabilizing monetary policy not only retains a good deal of flexibility so that other policy goals are achievable, but this policy itself works to stabilize economic activity.**
- **Inflation is not necessary to foster labor market adjustment and may work to remove existing wage flexibility. Price stability, on the other hand, likely would work to promote such flexibility.**
- **An environment of price stability and low interest rates does not constrain monetary policy; central banks can pursue stimulative policy via a variety of channels under stable prices. Price stability, however, does minimize the need for such stimulative policy.**
- **The CPI remains a viable price index measure suitable for use as an inflation target. Despite some measurement bias, the CPI has many advantages which outweigh its disadvantages.**
- **The best research suggests that the benefits of price stability far outweigh its costs; price stability is well worth its price. This research indicates that inflation's costs are high, even at low levels of inflation.**

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A RESPONSE TO CRITICISMS OF PRICE STABILITY

INTRODUCTION

Central banks in several industrialized countries have made price stability the primary goal of monetary policy in recent years.[54] Similar proposals have been made for the U.S. Federal Reserve. A number of criticisms have been directed at this strategy.

With deficit-manipulating fiscal policy no longer viewed as an appropriate tool for macroeconomic stabilization policy, some critics argue that a price stability mandate for monetary policy removes the only remaining governmental economic policy tool capable of stabilizing the macroeconomy over the business cycle.

Other critics posit that price stability is an inappropriate policy goal, contending that some positive inflation improves the workings of the economy by providing "the grease" for labor market adjustment and by ensuring that monetary policy remains viable and potent while minimizing deflation risk. Some cost-benefit (welfare) analysts contend that the costs of pursuing price stability outweigh its benefits. Still other critics focus on the measurement problems of defining price stability and using existing biased price indices such as the Consumer Price Index (CPI) as an inflation gauge.

This paper addresses key criticisms of price stability as monetary policy's primary goal. Each criticism is addressed and, for reasons that will be delineated, found to be without merit.

THE CRITICISMS

CRITICISM #1: Mandating price stability as the primary goal of monetary policy removes the only remaining policy tool capable of stabilizing the macroeconomy over the business cycle. With fiscal policy in a "balanced budget mode" and therefore deficit-manipulating fiscal policy no longer capable of serving a stabilization role, monetary policy must retain flexibility essential to assume stabilization responsi-

[54]These countries include Australia, Canada, Finland, New Zealand, Spain, Sweden, and The United Kingdom.

bilities. Without such flexibility, nothing remains to stabilize a macroeconomy vulnerable to various shocks.

This criticism overlooks the workings of fiscal stabilizers as well as important stabilizing properties of both price stability and the manner in which price stability should be (and has been) implemented. Price stability itself works to stabilize the economy in several important ways: it lowers interest rates and, because lower inflation is associated with lessened volatility of inflation, it also lowers interest rates' risk and uncertainty premiums, thereby stabilizing both financial markets and interest rate sensitive sectors of the economy.[55] Businesspeople and investors no longer base their decisions on expectations of future inflation. Moreover, price stability fosters more efficient operation of the price system and effectively acts like a tax cut.[56] As Federal Reserve officials themselves have emphasized repeatedly, price stability lays the groundwork for maximum sustainable long-term economic growth.

In responding to demand-side "shocks" or disturbances such as sudden spending slow-downs, price stabilizing monetary policy and counter cyclical policy are one and the same; such recessionary forces would put downward pressure on prices, but monetary policy under a price stability goal would be exerted in the opposite direction to stabilize the economy. Thus, inflation targeting would automatically work to minimize or offset demand-side disturbances to the macroeconomy, thereby removing or minimizing one key source of business cycle disturbance. Indeed, if the Federal Reserve successfully stabilizes prices, recession is less likely since most economic downturns occur in response to monetary policy actions to stem excessive buildups of inflation.

Furthermore, inflation targeting provides enough flexibility to manage even supply-side disturbances. International experience demonstrates, for example, that inflation targets are normally bands or ranges, allowing a good deal of flexibility in responding to such disturbances. Adjustments to price indices for volatile (often supply-side) price components such as food and energy are common. Furthermore, escape clauses for special situations have also been used, and multi-year targets

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[55]See Robert E. Keleher, *The Roots of the Current Expansion*, a Joint Economic Committee report, April 1997, for an explanation of how anti-inflationary monetary policy has contributed to the current expansion.

[56]Price stability removes distortions to the price system and eliminates those interactions of inflation and the tax code that lead to higher taxation on capital. Price stability implies tax rates are effectively lowered on items such as capital gains and/or depreciation allowances.

emphasizing the long-term nature of price stability are typical. All of these factors allow for policy reactions that promote a gradual transition back to price stability, minimizing the disruption of supply-side shocks while at the same time allowing leeway for near-term counter cyclical policy. Additionally, inflation targeting as opposed to price level targeting implies that inflationary supply-side disturbances need not be offset by episodes of deflation; i.e., inflation targeting allows for a more flexible, gradual, and non-disruptive return to stability.

In short, adopting price stability as the primary goal of monetary policy allows for a significant degree of flexibility so that in practice, it does not preclude achieving other desirable goals. A "gradualist" pursuit of price stability typically does not conflict with stabilization goals. And demand-side as well as supply-side disturbances can be readily managed. Operationally, central banks pursuing price stability have not completely abandoned stabilization goals; they have adopted "gradualist" approaches and cushioned transitions to price stability.

Empirical evidence supports these assertions. The recent U.S. disinflation experience, for example, has been associated with lower interest rates, stable financial markets, significant contributions from interest-rate sensitive sectors, and a remarkably sustained recovery. Similarly, at least one study has demonstrated that those countries recently adopting inflation targets have not only significantly lowered their inflation rates but have outperformed other (non-inflation targeting) countries in several other respects as well.[57] Furthermore, because of Sweden's price stability regime, it outperformed most other countries in the turbulent 1930s.[58] Additionally, some evidence suggests that lower inflation is associated with higher economic growth.[59] Criticism suggesting the stabilization function vanishes under inflation targeting

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[57]See, for example, Bennett T. McCallum, "Inflation Targeting in Canada, New Zealand, Sweden, The United Kingdom, and in General," National Bureau of Economic Research, Working Paper No. 5579, May 1996, p. 9.

[58]See Robert Keleher, "The Swedish Market Price Approach to Monetary Policy of the 1930s," *Contemporary Policy Issues*, Volume IX, No. 2, April 1991.

[59]See, for example, Robert J. Barro, "Inflation and Economic Growth," National Bureau of Economic Research, Working Paper No. 5326, October 1995; Ruth Judson and Athansasios Orphanides, "Inflation, Volatility, and Growth," Board of Governors of the Federal Reserve System, May 1996; and Brian Motley, "Growth and Inflation: A Cross-Country Study," Federal Reserve Bank of San Francisco, Working Paper 94-08.

regimes, therefore, has little basis in either theory or fact and thus cannot be used as an argument to discredit the goal of price stability.

CRITICISM #2: A strict price stability target for monetary policy is suboptimal since it renders labor market adjustments inoperative in the face of unemployment disturbances and inflexible wages. With downward rigid nominal wages, some positive inflation is essential to foster labor market (real wage) adjustment to unemployment disturbances. Price stability, on the other hand, lowers real wage flexibility and the allocative efficiency of the labor market. Accordingly, the cost of eliminating inflation is higher than many believe since at low levels of inflation a permanent tradeoff between unemployment and inflation emerges; the unemployment costs of eliminating inflation increase as inflation approaches zero.[60]

This criticism misses the mark for a number of important reasons. It recycles repudiated Keynesian arguments regarding macroeconomic policy and the labor market.[61] According to this view, price stability will result in increased (persistent) unemployment. This rise in unemployment, in effect, results from insufficient aggregate demand and, accordingly, its remedy is to pursue expansionary policies that produce more (albeit moderate) inflation. This higher inflation works to permanently lower unemployment. As the arguments below show, increasing inflation to reduce unemployment is inappropriate for a number of reasons.

This criticism rests on the presumption that nominal wages are (downwardly) rigid when both inflation and expectations of future inflation are eliminated. But empirical evidence that nominal wages are rigid even during periods of moderate inflation is not conclusive.[62] Some

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[60]In other words, the Phillips Curve is non-linear and not vertical at low levels of inflation.

[61]The writings of John Maynard Keynes in the 1930s reflected the special circumstances characterizing The United Kingdom but not the United States. Specifically, British labor markets in the 1920s and 1930s exhibited not only high unemployment but a substantial degree of rigidity reflecting powerful, entrenched labor unions, unemployment insurance, minimum wage laws, and welfare schemes that had minimal influence in more flexible U.S. labor markets in the 1920s and early 1930s.

[62]Moreover, the methodology used to assess such rigidity is dubious. Specifically, observations of the frequency of downward wage adjustments (during moderate inflation) are used to draw inferences about wage "rigidity." With positive productivity growth, it is not obvious why negative wage

researchers, for example, find little evidence of such wage rigidity.[63] Furthermore, there is anecdotal evidence that wage flexibility may have increased as union membership has declined (as a percentage of the labor force) and as higher percentages of workers are employed in smaller firms whose wage arrangements are more likely to resemble "auction" rather than "contract" formats.

Empirical evidence mustered to support the view that wages are rigid under price stability is based largely on historical data from periods of moderate inflation. While some evidence supporting some wage rigidity may exist during periods of moderate inflation, there is little if any evidence that nominal wages would be downwardly rigid under price stability. Indeed, there is reason to believe that wages likely would become more flexible after a period of stable prices since such a regime would generate a different set of expectations and hence foster different behavior on the part of both suppliers and demanders of labor services.[64] Historical episodes of relatively stable prices in the early 1900s, especially the 1920s, much of the 1950s, and even the mid-1990s indicate that during these periods unemployment rates were low, not high, as predicted by this view. In short, workers' resistance to wage cuts depends on the monetary regime; nominal wage rigidity is not necessarily a permanent characteristic of the labor market.

Of course, some wage rigidity may be related to longstanding labor market institutions (e.g., minimum wage laws, unemployment insurance, union strength, etc.) that adjust only very slowly to changes in both money regime and price expectations. Accordingly, such institutional rigidity cannot readily be affected by changes in a monetary policy or

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movements would be expected under price stability. Furthermore, economic definitions of wage "rigidity" pertain to the responsiveness of nominal wages to changes in unemployment rather than to simply the frequency of negative (nominal) wage adjustments.

[63]See, for example, A. Crawford, and C. Dupasquier, "Can Inflation Serve as a Lubricant for Market Equilibrium," in Economic Behavior and Policy Choice Under Price Stability. Ottawa, Bank of Canada, 1994, pp. 49-80; David E. Lebou, David J. Stockton, and William L. Wascher, "Inflation, Nominal Wage Rigidity, and the Efficiency of Labor Markets," Finance and Economics Discussion Series, Board of Governors of the Federal Reserve System, 94-95, October 1995; and Kenneth J. McLaughlin, "Rigid Wages?," Journal of Monetary Economics, 34 (1994), pp. 383-414.

[64]See, for example, Robert J. Gordon, "Comments and Discussion," Brookings Papers on Economic Activity, 1, 1996, p. 62.

policy regime. And changing these institutions is not the function of monetary policy; the monetary authority can only establish a regime that influences expectations of future inflation. The problem of gradual labor market adjustment in this case, therefore, is institutional wage rigidity, not price-stabilizing monetary policy. It would be a serious monetary policy mistake to adopt, in effect, inflationary policies to accommodate these institutions.

The strategy of adopting inflationary policies "to lubricate" the labor market depends on "money illusion" and would fail to lower real wages, to facilitate labor market adjustment, to make the labor market more flexible, or to lower unemployment.[65] Instead, this policy would have the unintended effect of making nominal wages increasingly downwardly rigid and upwardly flexible.[66] Thus, such policy does not predictably lower real wages or the unemployment rate. Indeed, even moderate inflation cannot produce sustained benefits and often leads to both higher unemployment and higher inflation. Furthermore, higher inflation would increase the noise in relative wage changes, thereby reducing the efficiency of the wage setting process.[67] Additionally, this criticism ignores the employment promoting effects of price stability as described, for example, in Keleher (1997).[68]

Fortunately, with theoretical advances in recent years, this view is now a minority position.[69] Such criticism of price stability rests on neither solid theoretical nor empirical ground. Wage rigidities–to the

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[65]"Money illusion" refers to the argument that workers will **not** accept a reduction in their real wage brought about by lowering nominal wages but will accept an identical real wage reduction implemented by increasing the price level.

[66]This would occur because persistent inflation would work to strengthen the above-mentioned institutional rigidities (causing nominal wages to become more downwardly rigid). At the same time, strengthened expectations of future inflation would bring about more frequent recontracting of nominal wages resulting in increased flexibility in the upward direction.

[67]See Ben Bernanke and Frederic Mishkin, "Inflation Targeting: A New Framework for Monetary Policy?," National Bureau of Economic Research, Working Paper No. 5893, January 1997, p. 29 (footnote 12).

[68]Robert E. Keleher, *The Roots of the Current Expansion*, a Joint Economic Committee study, April 1997.

[69]See Carl Walsh, "Nobel Views on Inflation and Unemployment," Economic Letter, Federal Reserve Bank of San Francisco, 97-01, January 10, 1997, p. 2.

extent they do exist–cannot be mitigated by altering monetary policy. Promoting more inflation to lubricate the labor market would only work to lessen existing wage flexibility. And contrary to this criticism, price stability and stabilizing price expectations would work to promote rather than to inhibit such flexibility.

CRITICISM #3: Positive inflation is essential to allow monetary policy to pursue expansionary policy in a low interest rate environment. With positive inflation rates, central banks can respond to negative aggregate demand shocks by driving nominal short-term rates below expected inflation, thus making the real Fed funds rate negative and boosting the economy. Under price stability (or zero inflation), on the other hand, the zero interest rate floor on nominal interest rates translates into an equivalent non-negative floor for real short-term rates, limiting the central bank's ability to reduce real short-term rates and stimulate the economy. Yet historically, negative real (short-term) interest rates have been essential ingredients in facilitating economic recoveries and bolstering the financial system in situations of financial crisis or strain. Thus, zero inflation importantly constrains monetary policy by removing this degree of freedom and removing the central bank's ability to pursue expansionary policies in these circumstances. Price stability, therefore, poses important risks. Positive inflation allows for broader monetary policy options and is needed "to lubricate the wheels of monetary policy."

This criticism reflects remarkable confusion as to the working of monetary policy. It suggests monetary policy may be unable to lower short-term interest rates and therefore unable to stimulate the economy under conditions of price stability or deflation. Yet, clearly, the monetary authority can use open market operations to purchase a wide spectrum of financial assets in pursuing expansionary policy; monetary policy need not work exclusively through short-term rates. Most notably, long-dated securities or foreign exchange, for example, easily could be purchased and used as transmission vehicles for expansionary monetary policy.[70] But even if the monetary authority wanted to remain in short-dated securities, it could continue to purchase such securities in the open market, thereby creating reserves until broad money and credit aggregates expanded and forward-looking market prices (such as commodity prices and foreign exchange rates) suggested a depreciation in the value of domestic currency. Monetary policy, therefore, can be expansionary

[70]Such action would push up bond prices and depreciate the foreign exchange rate.

despite low short-term interest rates. Furthermore, the discount window remains available for use in these circumstances. In short, monetary policy can be highly potent through a wide variety of channels in stimulating a weak economy even if interest rates are low.

Empirical evidence clearly indicates that expansionary monetary policy has in fact occurred under noninflationary conditions (for example, in the United States, Britain and Sweden during the 1930s[71]). In sum, there is no theoretical foundation for and little, if any, empirical evidence supporting the argument that monetary policy cannot be expansionary in low interest rate environments.

This criticism is more an indictment of the effectiveness of real interest rates as guides or indicators for monetary policy than a challenge to the potency of monetary policy in a low rate environment. To repeat a well-known lesson of monetary theory: it is often misleading to equate a particular level of interest rates with the stance of monetary policy. Criticism of price stability as limiting the ability of policy to stimulate the economy by lowering short-term interest rates is an example of this common error. Indeed, real interest rates are particularly unreliable guides to monetary policy for a number of reasons.[72] Rather than interest rates, jointly assessed market price indicators (such as commodity prices or foreign exchange rates) as well as broad measures of the money supply are normally reliable monetary policy indicators in noninflationary circumstances.

Finally, the criticism fails to recognize that a credible policy of price stability implies the absence of deflation and deflationary expectations. Such a policy lessens the chances of both negative demand shocks and financial strains of the type requiring stimulative policies suggested in the

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[71]See, for example, Milton Friedman and Anna Schwartz, *A Monetary History of the United States 1867-1960,* 1963, Princeton: Princeton University Press; Frederic Mishkin, "General Discussion: Overview Panel," Achieving Price Stability, Federal Reserve Bank of Kansas City, 1996, pp. 339-340; Frederic Mishkin, "The Channels of Monetary Transmission: Lessons for Monetary Policy," Federal Reserve Bank of New York, February 1996, p. 22; and Christina Romer, "What Ended the Great Depression?," Journal of Economic History, December 1992, 52, No. 4, pp. 757-784.

[72]Real interest rates can be inappropriate guides to monetary policy not only because they are unobservable, depending on accurate measures of inflationary expectations, but also because their equilibrium values constantly change with alterations in returns to (and productivity of) capital.

criticism. In short, potential problems requiring stimulative monetary policy are less likely to occur with a credible price stability policy.

In sum, the presence of low interest rates and the absence of inflation do not constrain monetary policy; stimulative policy can still occur via a wide variety of channels in these circumstances. Price stability, however, does minimize the need for such stimulative policy and this environment highlights the limitations of real interest rates as policy guides.

CRITICISM #4: Once inflation is underway, it is better to tolerate moderate inflation than to bear the significant costs of reducing it to zero. Welfare analysis suggests that reducing inflation to zero is inappropriate since at modest/moderate levels of inflation, the discounted costs of reducing inflation outweigh the accompanying discounted benefits. In short, the cost of going from moderate inflation to zero inflation does not warrant the benefits of price stability.[73]

Evaluating such arguments is difficult because proper assessments necessarily entail both comprehensive and accurate measures of the discounted (private and public) costs and benefits of reducing inflation over extended periods of time. The availability of such figures is exceptionally difficult given the current state of knowledge.

For example, whether particular measures of the cost of inflation are comprehensive is difficult to know. Earlier attempts to measure these costs were based on partial equilibrium models with inflation interpreted as a tax on real money balances.[74] These estimates of the cost of inflation were quite low but later refined general equilibrium estimates of these

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[73]One popular version of this argument is sometimes referred to as Howitt's Rule, which states that the policy of disinflation should be continued until an inflation rate is reached such that the present value of the costs of further disinflation equal the present value of the gains from additional disinflation. See Daniel L. Thornton, "The Costs and Benefits of Price Stability: An Assessment of Howitt's Rule," Federal Reserve Bank of St. Louis Review, March/April 1996, p. 33.

[74]See, for example, M.J. Bailey, "The Welfare Cost of Inflationary Finance," Journal of Political Economy, p. 64, April 1956: pp. 93-110; M. Friedman, "The Optimum Quarterly of Money," in The Optimum Quantity of Money and Other Essays, 1969, University of Chicago Press, Chicago, pp. 1-50.

costs of the inflation tax were higher.[75] More recently, research has focused on the interaction of inflation and the tax code. These later calculations are more comprehensive and find significantly higher costs of maintaining existing inflation than those interpreting inflation as a tax on money balances.[76] These more recent results suggest that since the costs of inflation are so high, inflation should be reduced.

Yet most analysts concede that even these most recent calculations are incomplete, omitting, for example, quantification of both inflation's uncertainty costs and the cost of inflation's distortion of the price system.[77] Thus, even these more comprehensive cost estimates most likely are understated.

In addition, the accuracy of these (discounted) costs and benefits of inflation is exceedingly difficult (if not impossible) to establish. Reasons include the following:

- **Estimates depend on factors difficult to measure:** The costs of reducing inflation depend significantly on factors notoriously difficult to quantify, such as price expectations, the credibility of policy makers, and the stickiness of prices and wages. Furthermore, there is no way to know how these factors may change in the future.
- **Estimates depend on arbitrary assumptions:** The measured costs and benefits of inflation are often conjectural, depending heavily on unavoidable assumptions. For example, the results depend on 1) what discount rate is assumed, 2) whether inflation is presumed to influence the level or growth rate of output, 3) which tax structure is assumed, or 4) whether various costs or benefits of inflation are presumed to be transitory (one-time events) or permanent in

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[75]See, for example, Richard Black, Donald Coletti, and Sophie Monnier, "On the Costs and Benefits of Price Stability," Bank of Canada Conference on Price Stability, Inflation Targets, and Monetary Policy, May 1997, p. 27. These estimates are sensitive to the specification of money demand and the definition of money (see p. 27).

[76]See Black, Coletti, and Monnier, op.cit., p. 28.

[77]See, for example, Black, Coletti, and Monnier, op. cit., p. 26; Robert E. Lucas, "On the Welfare Costs of Inflation," Center For Market Policy Research, Stanford University, February 1994, p. 22; and Gregory Hess and Charles Morris, "The Long-Run Costs of Moderate Inflation," Economic Review, Federal Reserve Bank of Kansas City, Second Quarter 1996 (Volume 81, No. 2), p. 84.

nature.[78] If these key assumptions are changed, the conclusions can change dramatically.

- **The power or robustness of the estimates is low at modest levels of inflation:** The application of welfare theory to crude, imperfect real-world data is problematic. The power or robustness of relevant empirical estimates is low; these estimates are sensitive and can change dramatically with alternative specifications and/or methodology. This is especially the case when such estimates are made for environments of low levels of inflation where relatively few data points or observations exist.

As a consequence of this lack of precision, numerical estimates of the discounted costs and benefits of moving from low levels of inflation to zero inflation must be regarded with a good deal of caution and reservation.

Nonetheless, despite these many significant problems, the most recent, most comprehensive, and likely most accurate estimates indicate that the costs of even "low" or "a little" inflation are significantly larger than suggested by critics of price stability.[79] This research suggests that those critics advocating continued inflation have substantially underestimated its costs, and that the perverse effect of inflation on output is significantly larger at lower rates of inflation than previously believed. These estimates indicate that large net gains would accrue by moving to price stability; the benefits of price stability significantly outweigh its costs.

Prominent examples of such research include Lucas (1994) and Feldstein (1996).[80] Lucas' estimates of the U.S. welfare cost of inflation attaches much higher costs to low rates of inflation than previous estimates. Feldstein argues that the benefit of moving to price stability from low levels of inflation substantially exceeds its costs; he maintains that very large net gains would be made by moving to zero inflation. Focusing on the interaction of inflation and the tax structure, Feldstein

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[78]See, for example, Thornton, op. cit., pp. 33-34.

[79]Comparisons of the results of these studies are difficult to make because of the many differences cited above. A thorough review of the literature is found in Black, Coletti, and Monnier, op. cit.

[80]Robert E. Lucas, Jr., "On the Welfare Cost of Inflation," Center for Economic Policy Research, Stanford University, February 1994; Martin Feldstein, "The Costs and Benefits of Going from Low Inflation to Price Stability," National Bureau of Economic Research, Working Paper No. 5469, February 1996.

contends that these interaction effects cause substantial welfare losses even at low levels of inflation. He argues that the effects of the interaction of inflation and capital taxation are much larger than distortions to money demand and the resulting seignorage.[81] More recent studies by a number of other researchers substantiate these results for both the United States and other countries.[82]

In conclusion, this welfare cost criticism of price stability, therefore, does not withstand close scrutiny, depending only on arbitrary assumptions and selective methodology. To be sure, there are formidable problems of calculating comprehensive and accurate measures of the net benefits of moving to zero inflation from low levels of inflation. Nonetheless, the best recent research suggests that the benefits of moving to zero inflation substantially outweigh the costs of doing so; price stability is well worth its cost.

CRITICISM #5: The true rate of price inflation cannot be measured accurately with broad price indices such as the Consumer Price Index. There are well-documented measurement biases of the CPI involving overestimates of inflation; i.e., the true rate of inflation is below the measured rate. These biases imply that the CPI (and other broad inflation measures) cannot be employed as useful policy goals. As a consequence, price stability or inflation targeting is unworkable as a strategy for monetary policy and cannot, in practice, be implemented.

While mismeasurement bias certainly exists and should be considered, the problem is not a major one and is certainly easily manageable. Estimates of the CPI inflation bias do vary, but most fall within a range of about 0.5 percent to as much as 2.0 percent per year.[83] Any price stability or inflation target adopted, therefore, could easily include an adjustment equal to the estimated measurement bias. And since such targets normally take the form of bands, uncertainties associated with

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[81]Feldstein, op. cit., pp. 51-52.

[82]See contributions summarized in "The Costs and Benefits of Achieving Price Stability," NBER Reporter, Spring 1997, pp. 29-30, to be published by the University of Chicago Press in National Bureau of Economic Research conference volume. See also Andrew B. Abel, "Comment," in Reducing Inflation: Motivation and Strategy, edited by Christina D. Romer and David H. Romer, University of Chicago Press, Chicago, 1997.

[83]Alternative price indices have problems of their own, so no practical alternative exists. See, for example, Charles Steindel, "Are There Good Alternatives to the CPI?," Current Issues, Federal Reserve Bank of New York, Volume 3, Number 6, April 1997.

these estimates could be reflected in the band width. Furthermore, some of the CPI measurement bias is already being remedied by the Bureau of Labor Statistics and plans for correcting other problems are already underway.[84] An adjusted CPI inflation target, therefore, could readily serve as a viable inflation policy goal.

But the inflation targeting strategy is not necessarily wedded to the CPI or any single measure of price change. Should the CPI not be chosen, other indices are readily available and accessible.

The rich international experience of inflation targeting provides many lessons in this regard. Despite recognized measurement bias in their respective CPI inflation measures (or equivalents), the several countries that have adopted explicit inflation targets all have successfully used the CPI (or equivalent) measure as the basis for their inflation targeting and anti-inflation programs. Measurement bias is viewed as a relatively minor problem outweighed by the CPI's many practical advantages: namely, its familiarity, ready availability, minor revisions, and convenience in communicating with the public. Notably, most countries using CPI inflation targets adjust the index for volatile components and non-monetary influences. Despite imperfections, therefore, CPI targets are viewed as quite practical and useful; the CPI is certainly a viable price or inflation target.

SUMMARY AND CONCLUSIONS

A number of criticisms have been directed at the strategy of mandating price stability goals for monetary policy. These criticisms have been addressed in this paper and shown not to withstand scrutiny. Price stability remains a viable policy goal. In particular:

- Price stabilizing monetary policy not only retains a good deal of flexibility so that other policy goals are achievable, but this policy itself works to stabilize economic activity.
- Inflation is not necessary to foster labor market adjustment and may work to remove existing wage flexibility, unlike price stability.
- An environment of price stability and low interest rates does not constrain monetary policy; central banks can pursue stimulative policy via a variety of channels under stable prices. Price stability, however, does minimize the need for such stimulative policy and highlights the limitations of real interest rates as effective monetary policy guides.

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[84]See Bureau of Labor Statistics, U.S. Department of Labor, "Measurement Issues in the Consumer Price Index," June 1997.

- The CPI remains a viable price index measure suitable for use as an inflation target. Despite some measurement bias, the CPI has many advantages which outweigh its disadvantages.
- The best recent research suggests that the benefits of price stability far outweigh its costs; price stability is well worth its price. This research indicates that inflation's costs are high, even at low levels of inflation.

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TRANSPARENCY AND FEDERAL RESERVE MONETARY POLICY

Jim Saxton (R-NJ), Chairman
Joint Economic Committee
United States Congress

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Executive Summary

Today's changing financial environment requires more transparent Federal Reserve monetary policy. Such transparency would help to establish understandable rules and procedures, to eliminate unnecessary market uncertainties and volatility, and to minimize the costs of anti-inflation monetary policy.

Transparent monetary policy is characterized by openness and a lack of secrecy and ambiguity. Transparency is multi-dimensional and includes the clarification of policy goals, of policy procedures, and the timeliness in reporting policy decisions.

More transparent monetary policy has a number of advantages. It can work to (1) clarify policy objectives, (2) improve the workings of financial markets, (3) enhance central bank credibility, (4) reduce the chances of monetary policies manipulation for political purposes, (5) foster better monetary policymaking, and (6) complement congressional monetary policy oversight responsibilities.

Recently, many central banks have recognized these advantages and have moved toward making their monetary policies more transparent. The Federal Reserve has made some progress on this front but generally has lagged behind some other central banks. The Federal Reserve could move toward a more transparent policy by:

- adopting explicit inflation targets,
- reporting more frequently to the Congress,
- releasing information earlier, and
- providing more information to the public.

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TRANSPARENCY AND FEDERAL RESERVE MONETARY POLICY

INTRODUCTION

Today's changing financial environment demands more transparent Federal Reserve monetary policy. Such transparency would help to establish understandable rules and procedures, to eliminate unnecessary market uncertainties and volatility, and to minimize the costs of anti-inflation monetary policy. Two reasons underscore the need for greater transparency.

First, previous commodity-based monetary standards anchored the price system and established well-understood, automatic rules governing central bank actions.[85] Until the demise of the (Bretton Woods) commodity-linked international monetary system in the early 1970s, the actions of the central bank were predictable in given circumstances, obviating the need for explicit delineation of objectives and operating procedures.

Today, no monetary standard or price anchor has emerged to replace the previous system's rules. As a result, both the goals of monetary policy and the principles that govern policy remain unclear. This uncertainty makes financial markets more volatile and anti-inflation monetary policy more costly than necessary.

Second, monetary policy transparency can make financial markets less volatile and can help them better reflect relevant information for monetary policy. Milton Friedman recognized the relationship between the information revolution and the disciplinary role of financial markets:

> The information revolution has greatly reduced the cost of acquiring information and has enabled expectations to respond more promptly and accurately to economic disturbances, including changes in government [monetary] policy. As a result, both the public at large and financial markets have

[85]See J.M. Keynes, *Treatise on Money: The Applied Theory of Money*, MacMillan, London, 1971, p. 207.

> become far more sensitive to inflation and more sophisticated about it than in earlier times.[86]

Because of this phenomenon, central banks are increasingly obliged to pay more attention to, respond to, and in effect be disciplined by inflationary signals in the foreign exchange, commodity, and bond markets. Many central banks have found that increased transparency improves the efficiency of financial markets and, therefore, enhances their usefulness for market participants as well as for the central banks themselves. Recognizing transparency's benefits, these central banks not only have adopted explicit goals in the form of inflation targets but have also improved their reporting of progress in achieving these targets, of procedures and indicators used in conducting policy, and of policy decisions. The Federal Reserve has also made some progress on this front but generally has lagged behind several other central banks.

The U.S. Congress, of course, has an inherent interest in and responsibility for increased Federal Reserve transparency because of its oversight responsibilities for monetary policy. By enforcing greater transparency in the form of mandated explicit policy goals and improved reporting requirements, Congress' oversight responsibilities would be simpler and less burdensome. Congress can learn from these developments and international experience, in effect delegating a portion of oversight responsibility to the financial markets and allowing them to play a larger disciplinary role.

After defining transparency and describing reasons for and consequences of traditional central bank secrecy, this paper presents the case for increased Federal Reserve transparency. Historical improvements in Federal Reserve transparency are documented, and comparisons to other central banks are made. Several forms of transparency are delineated and specific recommendations for improved transparency are described.

DEFINITION OF TRANSPARENCY

Dictionaries define "transparency" as easily seen through or detected; obvious, candid or open, clear; free from guile. A transparent monetary policy is characterized by lack of secrecy, obfuscation, or ambiguity, and should be understandable to those outside the policy process including

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[86]See Milton Friedman, "Monetary Policy in a Fiat World," in *Money Mischief*, Harcourt Brace Jovanovich, New York, 1992, pp. 254-5 [parenthesis added].

both ordinary citizens as well as legislators responsible for policy oversight.

The concept of transparency for monetary policy has multiple dimensions. Transparency is relevant for policy goals as well as for policy procedures or "policy apparatus;" i.e., the instruments, indicators, and procedures used in conducting policy to attain given policy goals. Goal clarification, however, is the more important component of a transparent monetary policy since such clarification helps to identify which instruments, indicators, and procedures are best suited to achieve stated objectives. If price stability is identified as the proper goal of monetary policy, for example, then the policy instruments, indicators, and procedures chosen should maximize the probabilities of achieving this goal. Different goals may necessitate different variables for these purposes. Notably, one of the lessons of international inflation targeting experience is that successful central banks focus more on goal clarification than on explanation of policy procedures.[87] Nonetheless, markets work better when more information is available, when policy goals are well known, and when central bank reactions to indicator variables are understood.

Timeliness is another dimension of transparency. Prompt disclosures of policy objectives, of progress in achieving these goals, and of procedures used in implementing policy are important elements of an open monetary policy. Transparent monetary policy, therefore, necessarily involves not only the clarification of objectives, but the timely and more complete disclosure of policy decisions and their underlying rationale.

CENTRAL BANK SECRECY

The historical reluctance of central banks to become open and transparent is well known. Many journalists, academics, and Members of Congress have recognized that secrecy and ambiguity are part of the culture of central banks.[88] Furthermore, recent research has demonstrated that the Federal Reserve has considerable information about important policy

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[87] See Robert E. Keleher, *Lessons From Inflation Targeting Experience,* A Joint Economic Committee Report, February 1997.

[88] See Marvin Goodfriend, "Monetary Mystique: Secrecy and Central Banking," Journal of Monetary Economics 17, 1986, pp. 63-92, and references cited therein.

variables beyond what is known to commercial forecasters, suggesting that current policy is not transparent in nature.[89]

The Federal Reserve, for example, has explicitly defended secrecy, opposed full disclosure, and (historically) objected to inflation targets.[90] The argument has been that fuller disclosure would promote unnecessary volatility in financial markets, benefit certain speculators, and interfere with the execution of monetary policy. More fundamentally, historical central bank opposition to transparency seemingly relates to a distrust of market mechanisms stemming from the original lender-of-last-resort function of central banks, as well as to bureaucratic rent seeking behavior on the part of central bankers in order to protect their privileged monopolistic position while avoiding accountability.[91]

CONSEQUENCES OF SECRECY

Secrecy on the part of central banks such as the Federal Reserve has important consequences. The lack of an understandable price stability objective, for example, often results in multiple, alternating policy goals, producing unnecessary uncertainties and fostering volatility in financial

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[89]See, for example, Christina D. Romer and David H. Romer, "Federal Reserve Private Information and Behavior of Interest Rates," NBER Working Paper 5692, July 1996.

[90]See Goodfriend, op. cit., for a review and analysis of the Federal Reserves' defense of secrecy. See also Robert E. Keleher, "The Pros and Cons of an Immediate Release of the FOMC Directive," unpublished memo, Federal Reserve Bank of Atlanta, June 1984. For documentation of Federal Reserves' historical opposition to inflation targets, see Irving Fisher, *Stable Money*, Aldephi Co., NY, 1934.

[91]For an analysis of bureaucratic incentives for covertness, see John F. Chant and Keith Acheson, "The Choice of Monetary Instruments and the Theory of Bureaucracy," Central Bankers, Bureaucratic Incentives, and Monetary Policy, edited by Eugenia Toma and Mark Toma, Kluwer Academic Publishers, Boston, 1986, pp. 107-128 (esp. pp. 109-11).

The original lender-of-last-resort (LOLR) function of central banks was premised on a belief in the inability of market mechanisms to prevent contagious bank runs causing contractions of the money supply and economic activity. Earlier provision of LOLR services involved the use of the discount window which necessarily involved proprietary information about individual bank loans and the individual portfolios of banks. Part of the responsibility of the LOLR was to maintain public confidence in the banking system while at the same time protecting the proprietary information of troubled banks. This function contributed to the culture of central bank secrecy which continues to this day.

markets. As a result, these markets react to any news suggesting the Federal Reserve is shifting policy objectives. Financial markets also respond to policy moves or statements of Federal Reserve officials since this information provides further clues as to Federal Reserve policy objectives as well as to its "economic model" or "policy apparatus." Therefore, uncertainty premiums build into interest rates causing them to be higher than would otherwise be the case. Furthermore, without a specific understandable policy objective, the central bank cannot be held accountable for its actions, and its credibility suffers. This deterioration of credibility raises the costs of disinflationary monetary policy.

Secrecy of the monetary policy process and policy indicators also promotes increased financial market uncertainty, unnecessary volatility, and, accordingly, larger uncertainty premiums in interest rates. Since markets are unsure as to what variables are used as policy indicators and what weights various data are accorded, markets react to any data releases they believe will influence Federal Reserve behavior.

Partly as a result of recognizing these consequences, much of the rationale for central bank secrecy recently has been discredited by the force of logical argument as well as by empirical evidence.[92] Some central banks themselves have recognized the value of transparency.

THE CASE FOR TRANSPARENT MONETARY POLICY

Establishing understandable monetary policy goals, informing the public about policy decisions in a timely fashion, and explaining how other variables are employed in the policy process have a number of advantages which work to improve monetary policy. Recognizing these advantages has prompted the central banks of several countries to adopt more transparent approaches to monetary policy. Specifically, a more transparent policy approach would make a number of contributions to Federal Reserve monetary policy, to the economy, and to financial markets. Improved transparency, for example, would:

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[92]For evidence that increased central bank disclosure does not disrupt markets, see Michael T. Belongia and Kevin Kliesen, "Effects on Interest Rates of Immediately Releasing FOMC Directives," Contemporary Economic Policy, Vol XII, October 1994, pp. 79-91; and Daniel L. Thornton, "Does the Fed's New Policy of Immediate Disclosure Affect the Market?," Review, Federal Reserve Bank of St. Louis, November/December 1996, pp. 77-88.

- **Help to clarify the primary long-term policy objective.**

  A more open, forthright policy process would create powerful incentives for monetary policymakers to carefully outline the primary objectives of monetary policy. This process, in turn, would create incentives to keep attention focused on such goals as well as to adopt procedures, indicators, and instruments that would maximize the chances of achieving these objectives.

- **Improve the workings and usefulness of financial markets.**

  Contrary to assertions of the Federal Reserve, empirical evidence shows that central bank provision of more complete and timely information does not increase the volatility of financial markets. Instead, financial markets work better when inflation objectives are clarified and more timely and detailed information is readily available. A more open, transparent policy environment improves the workings of financial markets because unnecessary uncertainties and confusion are minimized and market volatility is reduced. More information enables private sector expectations to adjust faster to changes in monetary policy, allowing private sector agents to learn faster and minimize disruption of policy change. With a consequent reduction in uncertainty premiums, interest rates will be lower, bolstering bond and equity markets. The result is improvement of the information content of these financial market prices, and their increased usefulness as conveyers of market sensitive information.

- **Improve central bank credibility.**

  A more transparent, open monetary policy also enhances central bank credibility. As monetary policy goals and procedures become well known and understood, the public more quickly learns about changes in policy, and central banks become more committed to achieving their publicly stated goals. As they begin to achieve these goals with greater regularity, central banks achieve enhanced credibility.

  This improved credibility, in turn, enables expectations to adjust faster to changes in monetary policy, fostering more flexibility in labor and other markets and lowering employment and output costs of disinflation. Goals such as price stability, therefore, can more easily be attained, managed, and maintained.

- **Minimize the chances policymakers would manipulate policy for political purposes.**

A more transparent monetary policy lessens the chances that policymakers will manipulate policy for political purposes.[93] Open, transparent and well-known policy goals and procedures would allow private analysts and financial markets to constantly monitor Federal Reserve actions and readily detect any manipulation of monetary policy for political purposes. Markets would quickly react to such manipulation by immediately revising inflationary expectations, and such action would readily be obvious to everyone. Consequently, the opportunity for central bankers to surprise the markets with stimulative policy would be severely constrained.[94]

- **Work to improve monetary policy.**

  More transparent monetary policy would encourage and lead to more open debate and criticism; private sector analysts could more openly critique central bankers' actions, procedures and rationale. Such criticism, in turn, would oblige the monetary authority to defend its policy objectives, decisions, and procedures. The Federal Reserve would be forced to openly confront and reconcile inconsistencies in its policy; incentives would be created for the central bank to get its analysis right. This resulting competition of ideas and more open dialogue would inevitably lead to improved, more informed policymaking.

- **Complement congressional oversight responsibilities.**

  A more transparent monetary policy would serve to complement responsibilities of the Congress for overseeing Federal Reserve policy. As suggested above, more timely, detailed Federal Reserve disclosure and a more open approach to monetary policymaking would help to improve the workings of financial markets and enable these markets, in effect, to better discipline monetary policy. As such, these markets could serve to complement congressional responsibilities for overseeing monetary policy. In particular, Congress could adopt a strategy to enhance transparency and thereby impose increased market discipline on Federal Reserve policy. Committees responsible

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[93] In technical jargon, transparency would help to minimize the "time inconsistency problem."

[94] See Andrew G. Haldane, "Introduction," *Targeting Inflation*, edited by Andrew Haldane, Bank of England, 1995, pp. 10-11.

for monetary policy oversight could closely monitor key market variables in assessing and evaluating the appropriateness of the stance of monetary policy. In effect, Congress could facilitate the delegation of some oversight responsibility to the market. Congressional oversight, therefore, would be simplified.

ADOPTION OF MORE TRANSPARENT CENTRAL BANK POLICIES

Recently, the Federal Reserve as well as several other central banks have adopted more transparent monetary policies. In the 1990s, for example, a number of central banks identified price stability as their primary policy goal and, accordingly, adopted explicit inflation targets.[95] But the commitment to transparency has taken these central banks far beyond the adoption of inflation targets. Many of these banks, for example, have consciously made improved transparency a goal of their respective institutions.[96] In implementing their strategies, for example, several of these banks immediately disclose policy decisions when they are made. These announcements are often accompanied by a detailed discussion as to the rationale for the policy move. More frequent and higher quality published materials, testimony, and speeches also are elements of such strategies to improve transparency. Some of these banks publish inflation forecasts as part of their efforts.[97]

The Federal Reserve has also made moves to become more transparent in recent years. Such moves, for example, include:

- immediate notification of FOMC policy decisions,
- earlier release of the FOMC policy directive, and
- release of more information such as regional information contained in the so-called "Beige Book."[98]

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[95] See Robert E. Keleher, *Lessons From Inflation Targeting Experience,* A Joint Economic Committee Report, February 1997.

[96] See, for example, Gordon G. Thiessen, Governor of the Bank of Canada, "Towards a More Transparent and More Credible Monetary Policy," Remarks, Montreal, Quebec, October 9, 1996; Andrew G. Haldane, op.cit, pp.10-11; and Frederic S. Mishkin and Adam S. Posen, "Inflation Targeting: Lessons from Four Countries," Economic Policy Review (Special Issue on Inflation Targeting), August 1997, Volume 3, number 3.

[97] The Bank of England's Inflation Report is often cited to illustrate this point.

[98] For descriptions of the historical evolution of Federal Reserve disclosure policy, see, for example, Anna J. Schwartz, "Central Banking in a Democracy," unpublished manuscript presented at Western Economic Association meetings, Seattle, Washington, July 9-13, 1997; and Marvin Goodfriend, *op.cit.*

In addition, the Federal Reserve provides a significant amount of information about its operations in various publications, reports, speeches, and testimony.

Recommendations for More Transparent Federal Reserve Monetary Policy

Although the Federal Reserve has come a long way from its earlier, more secretive approach to policy, its journey toward openness is still incomplete. Indeed, Federal Reserve policies still lag behind the more transparent policies of many of the world's more innovative central banks.

In view of its lackluster record on openness, the Federal Reserve should work to transform its historic secretive "culture" by adopting a number of changes to make U.S. monetary policy more transparent. In particular, the Federal Reserve should:

- **Adopt explicit inflation targets.**

  The most important step the Federal Reserve could take in moving to a more transparent policy would be to explicitly adopt price stability as the primary goal of monetary policy. As previous Joint Economic Committee studies have demon-strated, this can best be accomplished by adopting inflation targets as many other successful central banks have done.

- **Report to the Congress more frequently on monetary policy.**

  The Federal Reserve could improve the transparency of monetary policy by reporting more frequently to the Congress than biannually as is now the practice. Reporting quarterly or every four months would be more appropriate.

- **Release information earlier to the public.**

  The transparency of policy could also be improved by earlier release of information to the public. With speedy modern information processing equipment, it no longer should take more than six weeks to prepare and release (edited) minutes of FOMC

Before 1967, the record of policy action was published only in the Federal Reserve Board's *Annual Report.* Beginning in mid-1967, the Board began to release this record 90 days following an FOMC meeting. In March 1975, the Federal Reserve further reduced the delay from 90 days to 45 days. In May 1976, the release was further changed from 45 days to a few days after the next regularly scheduled FOMC meeting (a week or two earlier than previously). Recently, this report has been released on Thursday following the next regularly scheduled FOMC meeting. The "Beige Book" was formerly the "Red Book," which had (lower-level) confidential status until mid-1983.

meetings. Furthermore, while some delay may be appropriate, there appears to be little reason for a five-year delay in releasing verbatim transcripts of FOMC meetings as well as "Greenbook" forecasts and "Bluebook" analyses.

- **Provide more useful information to the public.**

  The Federal Reserve can improve its information dissemination function in many ways. At the time FOMC decisions are announced, for example, more detailed explanations as to the rationale for policy change could be provided, perhaps involving a brief press conference. When the FOMC decides to leave policy unchanged, an explanation regarding why no action was taken can be just as important as providing rationale for an actual change in policy.[99]

  The Federal Reserve also could keep markets better informed about its current policy position. When market expectations appear to be at a variance with the Federal Reserve's internal expectation, for example, the Federal Reserve could make an effort to condition market expectations by providing more information about its policy intentions, goals, strategy, and "model of the economy." This would help foster predictability and promote financial market stability.

  More information about current inflation, Federal Reserve progress in reaching inflation targets and explanations as to how FOMC decisions and Federal Reserve policy instruments and indicators help to achieve price stability would also be useful. Such reporting might include the provision of "inflation reports" and inflation forecasts similar to some other central banks. Furthermore, advance identification of the form of FOMC action to be undertaken should inflation objectives not be reached also would be useful.

  A review of the Federal Reserve system's procedures for classifying the confidentiality of documents also would be helpful in moving the system to a more open, transparent central bank. The Federal Reserve, for example, could make available to the public more internal research, forecasts, memos, and internal briefings that are currently restricted unnecessarily. The taxpayers, after all, are the ultimate financiers of such efforts.

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[99] The Federal Reserve's current practice is to issue a brief statement when it changes policy, but to give no explanation when it holds rates steady.

SUMMARY AND CONCLUSIONS

Transparent monetary policy is characterized by openness and a lack of secrecy and ambiguity. Monetary policy transparency involves a number of different dimensions including the clarification of policy goals and policy procedures as well as the timeliness in reporting policy decisions.

More transparent monetary policy has a number of advantages. It would, for example, (1) clarify policy objectives, (2) improve the workings of financial markets, (3) enhance central bank credibility, (4) reduce the chances of monetary policy manipulation for political purposes, (5) foster better monetary policymaking, and (6) complement congressional monetary policy oversight responsibilities.

Recently, many central banks have recognized these advantages and have moved toward making their monetary policies more transparent. The Federal Reserve has made some progress on this front but generally has lagged behind other central banks. The Federal Reserve could move toward a more transparent monetary policy by (1) adopting explicit inflation targets, (2) reporting more frequently to the Congress, (3) releasing information earlier, and (4) providing more information to the public.

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