A Mandate for Price Stability

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I. INTRODUCTION

Stephen Neal, Chairman of the House Banking Subcommittee on Domestic Monetary Policy, has introduced legislation (H. J. Res. 409) requiring

> that the Federal Open Market Committee of the Federal Reserve System shall adopt and pursue monetary policies to reduce inflation gradually in order to eliminate inflation by not later than 5 years from the date of this enactment of this legislation and shall then adopt and pursue monetary policies to maintain price stability.

This paper argues for passage of the Neal Resolution, which would make price level stability the dominant goal of monetary policy. The alternative to a rule that mandates price stability is the exercise of ongoing discretion over the desired price level. This discretion, it is argued, encourages groups that benefit from high and variable inflation to lobby the political system. A rule is desirable primarily because it limits the incentives for special-interest politics.

An earlier experience with discretionary monetary policy occurred under the Articles of Confederation (1781-1789). On the basis of this experience, James Madison concluded that discretion creates political pressures from special interest constituencies. Madison and the other authors of the Constitution, therefore, took discretionary control over the price level away from government. Article I, Section 8 of the Constitution empowered Congress to "coin money" and "regulate the value thereof." Today, this language appears general. At the time, however, it was clearly understood as restricting Congress to specifying the metallic content of coins. [See Timberlake (1989) and Christainsen (1988), especially the references in footnote 2 of the latter paper.]

The first part of the paper reviews the importance the authors of the Constitution placed on constraining discretionary issue of paper money. The second part of the paper argues that the recent experience with discretion vindicates Madison's judgment that discretion nurtures special-interest politics. In replacing discretion with a rule, the Neal Resolution would reestablish the original intent of the authors of the Constitution and return price level determination to a constitutional framework.

II. PRICE LEVEL DETERMINATION WITHIN A CONSTITUTIONAL FRAMEWORK

By 1787, James Madison and his correspondents, including James Monroe, George Washington, and Edmund Randolph, had concluded that the ascendancy of parochial political interests over the national interest was spreading disorder and leading to a disintegration of the Union. A primary manifestation of these parochial interests was overissue of paper money. State legislatures were pressured by debtors to pass laws making paper money legal tender and then to issue large amounts of it. By 1786, seven states had adopted paper money as legal tender. Madison wrote to his brother on August 7, 1786 (Madison 1975, p. 89):

> . . . the States are running mad after paper money, which among other evils disables them from all contributions of specie for paying the public debts, particularly the foreign one. In Rhode Island a large sum has been struck and made a tender, and a severe penalty imposed on any attempt to discriminate between it and coin. The consequence is that provisions are withheld from the Market, the Shops shut up—a general distress and tumultuous meetings.

Shortly thereafter, he wrote to Thomas Jefferson complaining of the "warfare & retaliation" among states that were passing laws enabling their citizens to pay out-of-state debts in depreciated paper money (Madison 1975, pp. 94-5).

In Spring 1787, Madison wrote the memorandum "Vices of the Political System of the United States" in preparation for the Federal Convention to be held at Philadelphia in May. In "Vices" Madison addressed the problem of how to prevent a national legislature from following the examples set by state legislatures, where majorities had violated the rights of individuals and minorities. Madison first described how unrestrained majority rule encouraged majorities to exploit minorities (Madison 1975, pp. 354-5):

> These causes lie 1. in the Representative bodies. 2. in the people themselves.

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> 1. Representative appointments are sought from 3 motives. 1. ambition. 2. personal interest. 3. public good. Unhappily the two first are proved by experience to be most prevalent.
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> 2. A still more fatal if not more frequent cause lies among the people themselves. All civilized societies are divided into different interests and factions, as they happen to be creditors or debtors—rich or poor—husbandmen, merchants or manufacturers—members of different religious sects—followers of different political leaders—inhabitants of different districts—owners of different kinds of property &c &c. In republican Government the majority, however composed, ultimately give the law.

Madison argued that appeals made on the basis of the "general and permanent good of the Community," "character," or "religion" would do little to prevent majorities formed out of these special interest groups from exploiting minorities (Madison 1975, pp. 355-6):

> Is it to be imagined that an ordinary citizen or even an assembly-man of R. Island in estimating the policy of paper money, ever considered or cared in what light the measure would be viewed in France or Holland; or even Massts or Connect.? It was a sufficient temptation to both that it was popular in the State; to the former that it was so in the neighbourhood. . . . Place three individuals in a situation wherein the interest of each depends on the voice of the others, and give to two of them an interest opposed to the rights of the third. Will the latter be secure? The prudence of every man would shun the danger. The rules & forms of justice suppose and guard against it. Will two thousand in a like situation be less likely to encroach on the rights of one thousand? The contrary is witnessed by the notorious factions & oppressions which take place in corporate towns limited as the opportunities are, and in little republics when uncontrouled by apprehensions of external danger.

Madison concludes by expounding the famous idea of Essays No. 10 and No. 51 in *The Federalist*. In a national legislature in a large country, the general interest is protected because the large numbers of disparate groups make it difficult to form exploitive majority coalitions (Madison 1975, p. 357):

> The Society becomes broken into a greater variety of interests, of pursuits, of passions, which check each other, whilst those who may feel a common sentiment have less opportunity of communication and concert.

Inevitably, citizens will form political groups in an attempt to use the coercive power of the state to further their own self-interests, rather than the general interest. In *The Federalist* No. 10, Madison accepts the reality of factionalism in government promoted by self-interest. The separation of powers, checks and balances, and the federal system embodied in the Constitution were designed to restrain self-interest through "supplying by opposite and rival interests the defect of better motives" (*The Federalist* No. 51).

The Constitutional Convention ended the discretion of state legislatures over the price level and the issue of paper money. Article I, Sec. 10 of the Constitution states that "No state shall . . . coin money; emit bills of credit [paper money]; make anything but gold and silver coin a tender in payment of debts." Article I, Sec. 8 gave the Federal government the power "to coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures." To the framers of the Constitution, this language clearly committed the United States to a specie standard.[1]

In many states during the Confederation period, state legislatures had arbitrarily set aside commercial contracts. Through inflation caused by printing paper money, states had abrogated contracts in favor of debtors. Article I, Sec. 10 of the Constitution prohibits states from "impairing the obligation of contracts." (Later, in the same spirit, the Fourteenth Amendment stated "nor shall any State deprive any person of life, liberty, or property without due process of law.") Removing discretionary control over the price level from government was a key device for enforcing the principle that government should not impair contractual obligations.

The authors of the Constitution carefully compromised between the need to give government the power to raise revenue and the need to protect private property from arbitrary seizure. The Constitution separates the branch of government that spends public monies from the branch that levies taxes. It safeguards this separation by giving Congress exclusive rights "to borrow money on the credit of the United States." The Executive Branch cannot spend money "but in consequence of appropriations made by law." By reserving to Congress the power to tax, the authors of the Constitution ensured that the exercise of this power would be accompanied by public discussion. Furthermore, "bills for raising revenue shall originate in the House," whose

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[1] Christainsen (1988, p. 427) writes: The first draft of the Constitution gave the legislature of the United States the power to "emit bills" [paper money]. On August 16, 1787, however, the convention moved to strike this power from the Constitution, and in Madison's account, "striking out the words . . . cut off the pretext for a paper currency, and particularly for making the bills a tender either for public or private debt." Of the eleven delegates whose remarks Madison reported, ten clearly put forth the view . . . that striking the phrase in question would deny Congress any power, under any circumstances, to create paper money.

members were subject to elections every two years. A specie standard was one of the checks imposed to assure that taxes were imposed only through explicit legislation. Congressional responsibility "to coin money" was designed to prevent the Executive Branch from copying the behavior of sovereigns who levied taxes through debasement of the coinage.

III.
The Recent Experiment in Discretion

Although the specie standard lapsed under the pressure to finance the Civil War with greenbacks, it was reestablished in 1878. When the Federal Reserve System was established in 1913, it was subjected to the discipline of the gold standard. Federal Reserve notes were subject to a 40 percent gold reserve. Battered by the Depression and two world wars, the gold standard metamorphosed into the Bretton Woods system, under which the Federal Reserve felt constrained to raise interest rates in response to gold outflows. Because domestic inflation was viewed as the major cause of gold outflows, the Federal Reserve kept inflation at a low level. To a considerable degree, the Bretton Woods system limited government discretion over the price level.

This limitation on discretion began to break down in the 1960s, however, when the Federal Reserve System stopped raising interest rates to prevent gold outflows. In 1963, Allan Sproul (1980, pp. 121, 126), president of the Federal Reserve Bank of New York, made an early, eloquent plea for discretion:

> [The Federal Reserve Act] was a determination that there was to be a degree of monetary management in the United States. But because of ancient prejudices and still lively suspicions . . . it was thought that this power could be substantially divorced from acts of discretion. . . . Changes in the production of gold, the international balance of payments, and the rise and fall of the self-generated credit needs of agriculture, commerce, and industry were to determine, pretty largely, the amounts of Reserve Bank credit which would come into being or go out of existence. . . . It seems to me patent that the uncertain hand of man is needed in a world of uncertainties and change and human beings, to try to accommodate the performance of the monetary system to the needs of particular times and circumstances and people. I here agree with Professor Samuelson, of the Massachusetts Institute of Technology, who has written that "a definitive mechanism, which is to run forever after, by itself, involves a single act of discretion which transcends, in both its arrogance and its capacity for potential harm, any repeated acts of foolish discretion that can be imagined."

Later, discretion came to be defended primarily as allowing the Federal Reserve to vary the money stock in line with changes in money demand. In actual fact, changes in the money stock far exceeded changes in money demand.[2] Discretion was exercised primarily in trading off the goal of price stability against other goals.

IV.
The Inflation Tax

Inflation generates revenue directly through the increase in fiat money that creates the inflation. More important, inflation interacts with the lack of indexing in the tax code to increase tax revenue. Finally, unanticipated inflation reduces the real value of the taxes the government must impose to pay holders of existing government debt.

After 1964, the political system was under constant pressure to increase revenue. The 1964 general election provided the congressional votes to undertake a broad expansion of income redistribution programs.[3] Two years later, the Vietnam War defense buildup began. After the mid-1960s, a rapidly growing economy that would generate continuous increases in revenue for defense and domestic spending programs became a dominant political concern. Initially, the political system accepted inflation as the cost of high real growth and the government revenue generated by that real growth. Later, the political system came to depend directly upon inflation for revenue.

Before indexation in 1985, inflation increased the real revenue raised by the personal income tax. Inflation pushed individuals with unchanged real income out of tax-exempt into taxable status. It eroded the real value of the standard deduction. Most important, due to the progressive rate structure of the personal income tax, inflation increased real revenue by moving individuals with unchanged real income into higher marginal tax brackets. Inflation still

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[2] From 1965 to 1989, real GNP doubled. Because the public's demand for the purchasing power represented by M2 rises in line with real GNP, the demand for real M2 also doubled. In contrast, the stock of M2 rose sevenfold. According to the quantity theory, the excess supply of M2 should cause the price level to rise by a factor of 3.5 (7/2 = 3.5). Over the period 1965 to 1989, the implicit price deflator increased by almost exactly that factor.

[3] In the election, Democrats had campaigned for a national medical care program (Medicare) and a Social Security program with universal coverage. In contrast, Republicans had campaigned for Social Security coverage limited to the needy elderly and financed out of general revenues. The elections gave the Democrats a 295-140 majority in the House and a net increase of 42 Northern Democrats. The conservative coalition of Republicans and Southern Democrats that had blocked social legislation in the 1950s crumbled.

increases revenue through the absence of indexation in other parts of the tax code. The capital gains tax is levied not only on real gains, but also on paper gains that only compensate for inflation. Revenue from estate taxes rises as inflation lowers the real value of the estate tax exemption. Inflation raises corporate taxes by eroding the real value of depreciation allowances, which are based on historical cost, rather than replacement cost. It also raises corporate taxes through increases in the dollar value of inventories that augment measured profits, but not real profits.

Studies done for the year 1974, when the inflation rate was 11 percent, yield the conclusion that inflation increased federal tax revenue in that year by 17 percent. (See Appendix. Because of the complexity of the federal tax code, construction of an annual series on revenue increases produced by inflation would require considerable work.) Although the revenue raised by inflation varied over time with the inflation rate, this revenue contributed significantly to total revenue until the reduction in the inflation rate in the 1980s and the indexing of the personal income tax in 1985.

V.
Income Transfers and Inflation

The combination of inflation and government price fixing allows the political system to circumvent legal prohibitions against arbitrary confiscation of private property. Revenue transfers imposed by this combination are not subject to the checks and balances and public discussion that constrain the enactment of explicit tax legislation. By reducing public discussion, such transfers avoid criticism for providing benefits to groups that are well-off. The relative ease of effecting income transfers through government price fixing in an inflationary environment encourages the formation of special-interest lobbies. Inflation thus increases the incentive to use government-regulated prices to redistribute income.

After the mid-1960s, in response to pressure from the politically potent housing lobby, Congress increasingly subsidized credit to the housing industry. In September 1966, Congress passed legislation extending interest rate ceilings to S&Ls. These Regulation Q ceilings, administered jointly by the Fed, the FDIC, and the FHLBB, were set at a higher level for S&Ls than for banks. The original intention was to allocate credit directly to housing by making deposits more attractive at S&Ls than at banks. Because Reg Q ceilings were not raised with the rise in inflation and market rates after 1966, Reg Q became an instrument for transferring income from holders of small deposits to the housing industry.[4] Holders of small deposits, who did not have access to money market instruments paying a competitive rate of return, were in effect taxed at a rate equal to the difference between the market interest rate and the Reg Q ceiling rate.

Reg Q ceilings subsidized credit to housing by keeping interest rates on thrift deposits below market rates. In combination with the prohibition of adjustable-rate mortgages, these ceilings constrained thrifts to borrow short-term through passbook savings accounts, while making them lend long-term. The rise in inflation in the late 1970s and early 1980s produced a rise in market rates and in the rates at which thrifts borrowed. Their old mortgages, however, continued to pay the lower rates offered in the less inflationary past. Consequently, a majority of thrifts became insolvent. In the absence of inflation, there would have been no thrift crisis.[5]

The Nixon wage and price controls, imposed in August 1971 in response to 4 percent inflation, created extensive new opportunities for the political system to redistribute income among different groups without explicit legislation. Inevitably, administration and enforcement of wage and price controls require considerable discretion. Wage and price controls create a shadow fiscal system of implicit taxes and transfers.

The controls on the energy industry were a good example of how the political system combined inflation with legislated price fixing to redistribute income. Price controls on oil were kept after other price controls were eliminated. In his book review of *The Economics and Politics of Oil Price Regulation*, Henry Jacoby (1984, p. 1176) comments:

> When the first oil shock occurred there was a system of oil price controls already in place—a hangover from the Nixon anti-inflation scheme of 1971. They were modified and

[4] The ceiling rate on commercial bank savings deposits was set at 4 percent in 1966, 4.5 percent in 1970, 5 percent in 1973, and 5.25 percent in 1979. In contrast to this 1.25 percentage point rise from 1966 to 1979, over the same period, the three-month Treasury bill rate rose almost 5 percentage points, from about 5 percent to 10 percent. In May 1970, this inflation tax was effectively restricted to holders of small deposits as a result of the exemption from Reg Q ceilings of certificates of deposit in denominations of $100,000 or greater.

[5] Because deposit insurance allowed insolvent thrifts to continue to attract deposits, the decision whether to close an insolvent thrift became a political decision rather than a market decision.

extended and used to hold down the price of domestic crude oil so that people downstream (oil refiners, distributors, and the ultimate consumers) got a lower average price of domestic-plus-imported supplies. . . . A shadow system of public finance, unique to the oil sector, was created—complete with taxes, transfers, and (no surprise) deadweight loss. In practice the system grew to mind-bending complexity as the various players (regions, consumers, refiners, and producers holding various classes of oil reserves) fought over the goodies.[6]

A very contentious issue at the time . . . was the question who actually benefited from the $15-$45 billion (depending on the year) producers were denied. In the mid-1970s there was a group of analysts who held that the oil price controls were a fraud to the consumer: U. S. product prices were set in world product markets . . . and there was no way for controls on crude oil to affect prices at the pump. The rents were being transferred to refiners in the form of increased margins.

Rent control laws furnish another example of the way inflation combines with government-regulated prices to redistribute income, in this case, from the owners of the housing stock to renters. Consider also automobile insurance: in California, Proposition 103, which was passed in a 1988 referendum, called for a rollback in automobile insurance rates of 20 percent. The constitutionality of the rollback is now being litigated in the courts. Proposition 103 also mandated that the state's insurance commissioner be elected in the future. Given the extensive criticism of the cost of car insurance in California, it is unlikely that the next commissioner will raise rates after taking office. Inflation will then lower the real value of insurance rates, regardless of whether the courts sanction a rollback.

VI.
Erosion of Support for the Price System

Inevitably, in an inflationary environment, government officials blame inflation on the special factors that change individual prices. In an environment where no one accepts responsibility for inflation, competition for political power encourages inflation scapegoating, which plays on public confusion over "high" and "rising" prices by attributing inflation to monopoly power. This scapegoating in turn erodes public support for resource allocation through the price system.

Erosion of support for resource allocation through the price system was especially strong in the market for home construction. The cycle of inflation and recession that began in the mid-1960s induced cyclical boom and bust conditions in the home construction market. (Housing construction, like other forms of investment, falls more sharply than aggregate output in a recession.) Cyclical downturns in the housing and construction industry created the impression that the free-market allocation of credit discriminated against specific classes of users. In particular, the concentration of unemployment in the construction industry created the impression that construction workers had to bear a disproportionate share of the burden of reducing inflation.

Because downturns in housing construction were attributed to "high" interest rates, they created pressure for "cheap" credit.[7] Many believed that lower interest rates for housing would follow from an increase in the supply of credit to housing made possible by higher money growth. In response to constituent pressure, some congressmen pressured the Fed for higher money growth and lower interest rates. These congressmen blamed financial monopolies for "high" interest rates. "High" interest rates, they argued, exacerbated inflation by raising the cost of doing business. In 1975, the cyclical downturn in housing produced House bills that would have required the Fed to set a floor of 6 percent under M1 growth and "to allocate credit away from inflationary uses, and toward national priority uses, including . . . low- and middle-income housing" (HR 3161).[8] Rep. Jim Wright (US Cong., 2/4/75, p. 7) made the case for one such bill, HR 212, produced by the Democratic Steering and Policy Committee.

REP. WRIGHT: With any given supply of new money overall, a credit allocation program is needed to channel credit away from nonproductive speculative and inflationary uses, such as corporate takeovers, excessive inventory accumulation, and speculation in land and commodities, and toward credit-starved priority areas of the economy. . . . HR 212 requests the Federal Reserve to allocate credit toward priority uses and away from nonpriority speculative and inflationary uses.

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[6] Ironically, when the extent of pollution in Communist countries appeared in 1989, the price system of western countries was praised for having produced efficient use of energy. An article in the *New York Times* (1/23/90, p. 17) commented, "The lack of market forces kept these [Communist] countries from realizing the impressive gains in energy efficiency registered in the West after the oil shocks of the Seventies. . . ."

[7] Congress was especially sensitive to this pressure because increases in deficits during recessions created the appearance that government was the main competitor for housing credit.

[8] Treasury Secretary Simon, along with influential members of the Senate Banking Committee, opposed these bills. As a consequence, they emerged in amended form as House Concurrent Resolution 133, which required only that the Fed periodically consult with Congress "over ranges of growth or diminution of monetary and credit aggregates."

Fed chairman Arthur Burns countered these assertions with arguments that inflation arises from government deficits and monopoly power in labor markets. Under pressure to lower interest rates, he defended money markets as highly competitive:

> SEN. BIDEN: Doctor, on occasion you have also indicated that with regard to interest rates, either the Fed can't or shouldn't concentrate on lowering interest rates. Yet we are faced with that question all the time here in the Congress. . . . If the Fed can't or shouldn't be the outfit that concentrates on that, who should?
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> DR. BURNS: You know, you could leave interest rates alone. After all, we have highly competitive money and capital markets. If you are going to engage in price control exercises, you ought to turn to those sectors of the economy where there are pockets of monopoly. . . . We have pockets of monopoly in the field of labor, but we don't talk about that. (US Cong., 4/29/75, p. 18)

As inflation created public distrust of the price system, it also created opportunities to subsidize users of credit. Rising rates of inflation that pushed market rates above usury ceilings provided a subsidy to homeowners who obtained mortgages at below-market rates. Homeowners with existing mortgages, like other debtors, benefited from unexpectedly high inflation. Furthermore, inflation turned existing federal credit programs into subsidies for the home construction industry. These programs had existed before the inflation of the mid-1960s. The rationale for them was that they made "it possible for home owners and rental project owners to finance the construction or acquisition of housing properties at *reasonable* (italics supplied) levels of interest rates" (US Cong., 2/28/64, p. 22). The credit extended by these programs before 1965 was relatively small, and it was largely extended at market rates. [See US Cong., 2/28/64, Table 3-2.] With inflation, "reasonable" levels of interest rates became historical levels of interest rates, and "reasonable" rates became subsidized rates.

By lessening public acceptance of credit allocation by the marketplace and by increasing the ease of hiding subsidies, inflation encouraged myriad government interventions in the market for housing credit. These interventions disguised the social cost of housing, which led to a misallocation of the capital stock. Government intervention also produced the HUD scandals and the S&L bailout of the 1980s.

VII. Political Self-Interest and the Common Interest

Revenue generated by inflation financed an increase in government spending relative to GNP after the mid-1960s. Because this increase in revenue did not have to be explicitly legislated, it allowed postponement of a political consensus over the acceptability of the increased spending. Prior to indexation of the personal income tax in 1985, inflation continuously increased tax revenue as a percent of GNP. Periodic "tax cuts" would return revenue as a percent of GNP to its original base value. The practice of imposing continuous tax increases through inflation, while legislating offsetting reductions only occasionally, raised the average tax rate imposed over time. The increase in the average tax rate allowed Congress to raise taxes sufficiently to finance the expansion of income transfer programs, while postponing a decision on whether to legislate permanently taxes sufficient to pay for them. Inflation allowed Congress to postpone continually its constitutional responsibility to make explicit, publicly debated decisions on the share of resources to appropriate to the public sector.

The distortions produced by continual inflation and the absence of indexing in the tax code gave Congress an incentive to rewrite the tax code periodically. Individuals and corporations necessarily lobbied Congress on an ongoing basis to protect their own interests. The uncertainty over the long-run incidence of taxes acted to discourage investment.

VIII. Can We Learn To Live With Inflation?

Is "high" inflation bad and "moderate" inflation all right? Why not learn to live with the current 5 percent inflation? Historical experience offers no example where positive inflation was maintained at a steady rate over any significant period of time. Sustained inflation is always associated with a fluctuating rate of inflation. The reason is that, in an inflationary environment, the incentive for the political system to inflate changes continually. First, the revenue raised with a given rate of inflation tends to fall because the public finds ways to reduce the base of the inflation tax. For example, the revenue generated in the 1970s by inflation and the lack of indexing in the corporate income tax fell as firms shifted from long-term to short-term investments, which could be depreciated over a short time period. Second, the income transfers to politically influential constituencies produced by the combination of inflation and price controls tend to fall as the public finds ways to circumvent the price controls. For example, in the 1970s, money funds allowed individuals to bypass Reg Q by holding money market instruments

indirectly. With a given rate of inflation, therefore, the revenue raised and the income transfers effected by inflation fall over time. Political pressures to offset this fall through an increase in the inflation rate create instability in inflation.

Finally, because the size of the federal government deficit varies with changes in the rate of growth of output, a concern over government deficits produces pressure for expansionary monetary policy. In the absence of a clear mandate to stabilize the price level, large government deficits will continue to create political pressures for the inflationary monetary policy that has characterized the last three decades.

IX. CONCLUSION

The only way to assure a stable monetary environment is to replace the exercise of ongoing discretion over the desired price level with a rule that makes price level determination part of the constitutional framework of government. In a recent editorial, *The Financial Times* of London (1/23/90, p. 16) stated,

> The notion that money must fall within the domain of day-to-day politics is a 20th-century heresy. . . . Painful experience with the modern manipulation of monetary policy suggests that money is more appropriately an element of the constitutional framework of democracy than an object of the political struggle. Monetary stability is a necessary condition for a working market economy, which is itself a basis for a stable democracy.

The purpose of a rule is to reduce the incentive for special-interest constituencies to form with the goal of either redistributing income through the political system in a way that does not reflect a social consensus explicitly ratified through the legislative process or of redistributing income in an arbitrary way away from minority groups. This rationale for a rule means that a rule must be exactly what its name implies—a guiding principle with no exceptions. The central bank cannot condition the political system to respect its independence if politicians know that the central bank makes exceptions to its rules.

This argument has wider application than just to a rule for price level stability. For example, unlike most other central banks, the Federal Reserve System has never interfered in the foreign exchange market by allocating foreign exchange at favorable rates to politically influential importers. This rule has worked well. Similarly, the Federal Reserve System has avoided allocating credit among competing private uses. The primary manifestation of the rule not to allocate credit is an unwillingness to allow insolvent financial institutions to use the discount window. Use of the discount window by insolvent financial institutions would move credit allocation away from its free market allocation. Again, this rule has worked well. It is evident that if either rule were made subject to exceptions, the Federal Reserve System would come under regular political pressure to make exceptions. Hopefully, passage of the Neal Resolution will make price level stability a rule that is followed with no exceptions.

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Appendix on Revenue from Inflation

This appendix reviews quantitative estimates of five separate increases in federal revenue in 1974 due to the inflation that year of 11 percent.

Added Seigniorage: The outstanding stock of base money (currency in circulation, foreign and other deposits at the Fed, and member bank reserves) in 1974 was $111 billion. With inflation at 11 percent in 1974, the public had to add an additional 11 percent to holdings of base money in order to maintain its real value. (This addition to base money is equivalent to a tax collected by the government in that it allows the government to finance additional expenditures.) Seigniorage in 1974, therefore, can be put at about $12.2 billion ($111 x .11).

Lower Real Interest on Outstanding Treasury Debt: As of June 1974, the Treasury paid an average rate of interest of 6.56 percent on its outstanding debt. At this time, the average maturity of this debt was 3 years. The market rate of interest on a 3-year Treasury note was 8.33 percent. The difference in the market rate and the average rate paid (1.77) is an estimate of the extent to which past issues of federal debt failed to incorporate adequately a premium for future inflation. With $254.5 billion of debt held by private investors, the gain to the government from unanticipated inflation in 1974 was $4.5 billion (.0177 x $254.56).

Income Tax Bracket Creep: Before the indexing that took effect in 1985, inflation increased the real revenue raised by the personal income tax. Inflation eroded the real value of the standard deduction, the personal exemption, and the low-income allowance. Because the rate structure of the personal income tax was progressive before 1985 with respect to *nominal* income, inflation increased *real* revenue by increasing individuals' *nominal* income. Fellner, Clarkson and Moore (1975) use a stratified sample of tax returns from the Internal Revenue Service in order to calculate the increase in revenue in 1974 due to inflation. They apply the actual tax code in 1974 to these returns and also a hypothetical tax code whose nominal provisions are adjusted upward by the rate of inflation in 1974. They conclude that inflation in 1974 increased revenue from the personal income tax by $6.7 billion.

This figure is fairly close to a rough estimate from aggregate figures. Between 1973 and 1974, nominal personal income increased 9.7 percent. Inflation (measured by both the CPI and the consumption expenditures deflator), however, rose by 11 percent, so real income declined by about 1 percent. An indexed tax code that caused changes in real revenue to reflect only changes in real personal income, then, would have produced an increase in nominal personal tax receipts of about 8.7 percent (9.7 percent −1 percent). In fact, personal tax receipts rose by 14.3 percent. These figures suggest an elasticity of real revenue from the personal income tax with respect to inflation of .64 [(14.3 − 8.7)/8.7]. In 1973, personal tax receipts were $107.3 billion. The real tax increase due to inflation, then, was about $6 billion ($107.36 x .087 x .64), which is close to the Fellner *et al.* figure.

Nominal Capital Gains Taxation: Inflation increases the real revenue raised by the capital gains tax because increases in the dollar value of assets due to inflation are taxed as real rather than nominal gains. Feldstein and Slemrod (1978) estimate that inflation caused the tax on capital gains to generate an additional revenue of $.5 billion in 1973. (This figure is a lower estimate of the revenue gain for 1974, when the inflation rate was higher than in 1973.)

Corporate Income Tax: Inflation raises the real revenue from the corporate income tax. Fellner, Clarkson and Moore (1975) also calculate the increase in corporate taxes in 1974 due to inflation. In these calculations, they adjust corporate depreciation allowances for inflation, so that depreciation is at replacement cost, rather than historical cost. They also reduce profits due to the nominal gain in the dollar value of inventories caused by inflation. They estimate that inflation increased corporate taxes in 1974 by $10 billion. [This figure may be an underestimate. Feldstein and Summers (1979) estimate that inflation in 1977 of only 6.8 percent increased the taxes of nonfinancial corporations by $32 billion. That is, in 1977, inflation raised the effective corporate tax rate from 41 percent to 66 percent.]

Totals: The shares of the inflation tax contributed by the separate parts of the tax code in 1974 were seigniorage 36.0 percent, depreciation of existing government debt 13.3 percent, personal income tax excluding capital gains 19.8 percent, capital gains 1.5 percent, and corporate tax 29.5 percent. These relative shares, however, underestimate the importance of the personal income tax component of the

inflation tax. A constant inflation rate would generate the same amount of revenue each year from the other components (abstracting from reductions that occur as the public learns how to evade the inflation tax). In contrast, revenue increases from the personal income tax were cumulative because each year taxpayers were forced into higher tax brackets. The cumulative increase in revenue was only limited because taxpayers could not be forced into a marginal tax bracket higher than 70 percent.

The figures listed above for the separate components of the inflation tax add to $33.9 billion. That is, if the tax code had been indexed for inflation in 1974, federal revenue would have been lower by $33.9 billion. In 1974, federal government revenue, exclusive of social security taxes, was $198 billion. In 1974, therefore, 17 percent of revenue was derived from inflation. Of course, Congress reduced tax rates on an ad hoc basis to keep the overall tax burden relative to GNP fairly constant. These reductions, however, occurred only sporadically. The steady increase in real revenue produced by inflation combined with occasional reductions in tax rates raised the average tax rate over time.

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