The Implementation and Maintenance of a Monetary Constitution

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The Inflationary Bias of Government and Problems of Monetary Constitutions

The present age of discretionary monetary policies, which began in 1914, has turned out to be an age of permanent inflation. Inflation rates have ranged from low and moderate to hyperinflationary, but have scarcely anywhere and mainly only during the Great Depression been absent. It is true that countries with rather independent central banks have enjoyed lower rates of inflation (Parkin and Bade 1978), but the long-term effects in those countries still have been substantial.

This development stands in strong contrast to what prevailed before 1914, when sound monetary constitutions provided an anchor for the value of money, using either pure gold or silver standards (see Table 1). An inflationary bias, however, is not the only characteristic by which different monetary constitutions can and should be judged. The variance of such real factors as unemployment, business activity, or real interest rates may well be as important. And it is possible that in some countries these variances were higher under the gold standard than under the present discretionary system (Bernholz 1983; Meltzer 1984). Nevertheless, many economists are now convinced that to eliminate permanent inflation we have to return to a monetary constitution that binds the hands of government and the central bank.

Proposals for a sound monetary constitution are wide-ranging. They include proposals for stabilizing the monetary unit in terms of a price index (Fisher 1912; Simons 1948), constraining the issue of fiat money

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TABLE 1

PRICE-LEVEL CHANGES IN SELECTED COUNTRIES, 1750–1980

Year	Wholesale Price Index				
	Great Britain	Germany	France	Switzerland	United States
1750	107.95	—	—	—	—
1790	—	—	—	—	100
1792	100	100	100[d]	—	—
1800	171.5	173.1	100	—	143
1810	173.9	169.2	140.7	—	146
1820	130.7	115.4	77.8[e]	—	118
1830	107.4	100	67.4	—	101
1840	116.5	102.6	69.1	—	106
1850	83.5	91.0	95.9	—	93
1860	112.5[a]	120.5	124.4	—	103
1870	109.6	118.0	114.9	—	150
1880	107.6	111.5	103.7	—	111
1890	86.3	110.9	86.4	—	91
1900	83.4	115.4	85.5	—	91
1910	90.2	119.2	93.3	—	115
1913	—	134.6	100.2	—	113
1914	97.9	—	101.9	134.6[f]	111

1921	195.8	2,318.1	341.8	263.6	159
1930	119.7	167.7[b]	521.7	168.8	141
1938	121.0	133.4	617.6	144.1	128
1950	313.4	244.1[c]	12,225	295.6	258
1960	423.1	293.7	20,376	311.0	299
1970	566.5	325.3	27,271	378.4	348
1980	2,136.8	534.9	59,305	528.3	739
Period	Average Annual Rate of Inflation (%)				
1750–1914	−.0006	—	—	—	—
1790–1914	—	—	—	—	0.08
1792–1913/14	−.0002	.25	.00009[g]	—	—
1890/92–1914	.53	—	.69	—	0.83
1914–50	4.58	—	20.22	3.07	2.37
1950–80	6.61	2.65	5.41	1.95	3.57
1970–80	14.2	5.1	8.08	3.39	7.82

[a]The index for 1860 has been calculated by using the change of the German index from 1850–51, since the base of the British index has been changed for that year.
[b]After devaluation 1:10^{12} in 1923.
[c]After devaluation 1:10 in 1948.
[d]Index for 1796.
[e]The index for 1820 has been calculated by using the change of the German index from 1819–20, since the base of the French index has been changed for that year.
[f]The index number for 1914 set equal to that of Germany.
[g]Average annual inflation rate for 1798–1914.
SOURCES: Mitchell (1976, pp. 735–47); U.S. Dept. of Commerce (1975, Part 1, pp. 199–202); Statistisches Bundesamt (1981, pp. 704–707).

by a constitutional growth rule (Friedman 1968), introducing a commodity money (Yeager 1962), and instituting free banking with no governmental control (Hayek 1976). No agreement thus exists on the type of sound monetary constitution to be introduced. But as Geoffrey Brennan and James Buchanan (1981, p. 64) have emphasized: "The proponents of free market money, competitive monies, commodity money, or rule-constrained fiat issue all agree on the desirability, necessity, acceptability of some monetary constitution."

My discussion (Bernholz 1983) of the political and economic reasons for the inflationary bias of unrestrained government shows that this bias can only be contained for an extended period by adequate monetary constitutions.[1] The idea that sound monetary constitutions are necessary to limit the inflationary tendencies of unfettered government dates to at least 1800, and has been favored by many economists. To quote from Ludwig von Mises (1912, p. 288):

> As soon as only the principle has been accepted that the state is allowed and has to influence the value of money, be it even only to guarantee its internal stability, then the danger of mistakes and exaggerations again at once emerges.
>
> These possibilities and the memories of the financial and inflationary experiments of the recent past have pushed into the background the unrealizable ideal of a money with an unchangeable intrinsic value as compared to the postulate: that at least the state should refrain from influencing in any way the intrinsic value of money [my translation].

Even though the reasons for the inflationary bias of central banks and governments and the possible alternatives restricting them by sound monetary constitutions have been widely discussed by economists, little attention has been paid to an equally important problem. In particular, the problem of implementing and maintaining a sound monetary constitution, given the political forces working in favor of inflation. This paper, therefore, aims to treat the problem of how to introduce and to maintain a sound monetary constitution and to give some preliminary answers. Possible solutions to this problem may also bear on which monetary constitution to select. For example, a particular constitution may be judged excellent for its consistency and potential to prevent inflation and reduce the variance of real variables of the system, but if it cannot be introduced or maintained, then a more limited but still satisfactory alternative must be substituted.

[1]See Frey and Schneider (1981) and Schmidt (1983) for the behavior patterns of independent central banks.

Returning to a Sound Monetary Constitution: Historical Patterns

Four distinct patterns emerge when looking for historical patterns of the introduction of sound monetary constitutions. These patterns can be categorized as follows: (1) the return to a stable monetary constitution following hyperinflation; (2) the restoration of a sound monetary constitution at the old (gold or silver) parity following periods of war, during which convertibility has been abolished; (3) the introduction or reintroduction of a sound monetary constitution at a lower parity following moderate inflation; and (4) the introduction of stable monetary systems occasioned by the example of such constitutions in other countries.

For the first two categories, there are certain public choice mechanisms that facilitate a transition to a sound monetary constitution. These will be discussed in the remainder of this section. In the following section, I focus on the third category, which is the most puzzling from a public choice perspective. The fourth category is not considered in this paper.

Restoration Following Hyperinflation

A return to sound monetary conditions is inescapable after a system has entered hyperinflation. Hyperinflation has to end in collapse and, consequently, either a reform or the replacement of the current money by commodity or foreign money has to take place. In organized modern states the reform alternative has usually been chosen.

It is well known that during a hyperinflation and even during an advanced inflation individuals reduce their real cash balances and no longer use money as a unit of account. The declining real stock of money leads to a liquidity crunch and reinforces the replacement of the national currency by foreign currencies and other stores of value. As a consequence, the government obtains fewer and fewer resources from inflating the money supply, while normal tax revenues decrease because of the misallocation of resources brought about by inflation and the lag in collecting and spending taxes. The fact that people have now learned about inflation checks any expansionary effect of increasing rates of inflation on the demand for labor. On the contrary, the disorganization and misallocation of resources leads to rising unemployment.

Given this situation, the governing party(ies) or the opposition can gain the support of a broad majority of voters by introducing a currency reform. At this juncture, faith in the government and the monetary authorities is absent. Thus the introduction of a new monetary

constitution, which at least appears to be a reliable safeguard against further inflation, is inescapable. Otherwise the reform will falter, as in the cases of the replacement of the assignats by the mandats in France or the Chinese currency reform of 1948 (see Table 2).

Restoration Following War

Turning to the second category—the restoration of the old parity after wars before or during which convertibility had been abolished—the question arises as to what political forces allow a return to a sound monetary constitution (usually to the gold or silver standard). The most important factor has been the perception that the war period was extraordinary and that with its end everything, including the currency and thus the monetary constitution, should return to normality. Obviously politicians responded to this widely shared feeling. National prestige also has played a part in resurrecting the old system and parity. A world power like Great Britain would have lost status had it not returned to the prewar parity after the Napoleonic wars and after World War I. Finally, for a world financial center like London, the absolute trustworthiness of a stable currency employed in worldwide contracts was essential. Competition with the emerging financial center of New York was also an important consideration after World War I (Kindleberger 1984, ch. 18).

Some political forces opposed the return to the old system and to prewar parity. Those dependent on export and import-competing industries were mostly against the deflation and the unfavorable exchange rates necessitated by the reform. The coal strike of 1925 and the general strike of 1926 in Great Britain show that forces are emboldened by the recession or depression that paves the way to the old parity. It is thus not surprising that David Ricardo and John Maynard Keynes favored the introduction of a lower parity (Ricardo at least under certain conditions). In contrast to Ricardo, Keynes preferred the replacement of the gold standard by a more discretionary system (Silberman 1924, pp. 437–38; Kindleberger 1984, pp. 337–42).

Since the strength of the social and political forces opposing reform is related to the necessary degree of disinflation, a return to the old parity is possible only if the devaluation of the currency and the rise in the price level are not far out of line with the cost and price levels of the main trading partners who have preserved or reintroduced the stable monetary constitution and the old parity. This view is confirmed by the League of Nations (1946, p. 92) report on the monetary experience of various countries following World War I:

> Of the six countries which ultimately stabilized their currencies at the pre-war gold parity, five, namely Sweden, Norway, Denmark,

TABLE 2

CASES OF HYPERINFLATION AND STABILIZATION

Country	Inflation Period	Base Period	Increase over Base Period (multiple)		Highest Velocity of Circulation of Money	New to Old Currency Units (conversion factor)
			Money Stock	Price Level or Exchange Rate[a]		
Germany	1914–23	Jan. 1914	319.2×10^8 (Nov. 1923)	$7{,}330 \times 10^8$ (Nov. 1923)	22.96	1: (1×10^{12})
Hungary	1914–24	Dec. 1920	229.12 (July 1924)	488.61 (July 1924)	1.91	1: (15×10^3)
Hungary	1945–46	Dec. 1945	226.03×10^{11} (July 1946)	702.28×10^{22} (July 1946)	310.71×10^9	1: (828×10^{27})
Austria	1914–22	July 1914	2,526.24 (Aug. 1922)	5,932 (Aug. 1922)	2.35	1: (15×10^3)
Poland	1914–Jan. 1924	July 1919	60.05×10^3 (Dec. 1923)	264.08×10^3 (Dec. 1923)	4.40[b]	1: (1.8×10^6)
China	1937–May 1949	Sept. 1945	302×10^6 (May 1949)	105×10^9 (May 1949)	347.68	1948, currency reform faltered; 1949, communist take-over.
France	1789–Mar. 1796	1790	89.49 (Mar. 1796)	255.3 (Mar. 1796)	2.85[b]	1795, currency reform[c] faltered; return to gold standard.

[a]Exchange rate against U.S. dollar for Poland and against Dutch guilder for France.
[b]Calculated using exchange rate.
[c]A new money (mandats) was introduced in 1795.

> the Netherlands and Switzerland, were neutral during the war and had been spared such fundamental dislocations of their national economies and finances as were experienced by most of the belligerent countries. All of them, including the United Kingdom, were countries whose currencies had not depreciated by more than one-half in relation to the dollar.

As the maxima of relative price indices show (Table 3), the countries with only relatively low maximal indices were the ones that did return to their prewar parities (cf. Table 4).

Economic and Political Characteristics of Moderate Inflation and Stabilization

All the cases belonging to the third category exhibit moderate inflation before the reintroduction of a sound monetary constitution. In contrast to the second category, however, some cases were not

TABLE 3

CASES OF MODERATE INFLATION AND STABILIZATION AT THE PREWAR PARITY

Country	Period of Inflation before Stabilization	Maximum of Domestic over Foreign Price Level[a]	Year of Maximum
Sweden	1750–1772	200[b]	1764
Great Britain	1797–1823	143[c]	1813
United States	1861–1879	174[b]	1864
Great Britain	1914–1925	129	1921
Netherlands	1914–1924	233	1918
		160[d]	1919
Sweden	1914–1922	141	1921
Switzerland	1914–1924	135	1919
Norway	1914–1928	165	1921
Denmark	1914–1926	139	1921

[a]Normal = 100 for base year.
[b]Index for domestic price level only.
[c]Wholesale price indices.
[d]The relative cost of living index seems to be rather high for 1918; hence, the highest value for the years after World War I (up to 1924) has also been given.
SOURCES: Table 1 and Appendix Tables A1–A6; Bernholz (1982).

connected with wars and all of them restored a lower parity than the old one. These two facts are not unconnected. In the absence of an earlier war, no perceived necessity was felt to return to normalcy after an extraordinary period and to restore national prestige to its former status. Given these facts, why has it been possible to reintroduce sound monetary constitutions after moderate inflation not connected with wars? Why could stable monetary constitutions with a lower than the old prewar parity be introduced, given the fact that a restoration of the old parity was politically not possible?

The answer is that the same political forces that opposed a return to prewar parity in cases of the second category favored a restoration of a sound monetary constitution in cases of the third category. And in those third-category cases connected with wars, political forces were strong enough to prevent a return to the old parity because inflation had risen to such levels that a drastic disinflation would have been required. Indeed, Table 4 shows that the relative cost of living index for third-category cases moved to higher levels in the case of war-connected inflations than for second-category cases (cf. Table 3). To understand the political forces leading to a sound monetary constitution in cases of the third category, it is necessary initially to discuss the economic and political characteristics connected with moderate inflations and their stabilization.

If, after a long period of monetary stability, a country enters a path of moderate inflation, its initial impact is on demand in goods and labor markets, in the form of increasing incomes and perhaps, through some early bottlenecks in one or the other sector of the economy, a few rising prices. But no general rise of the price level is perceived or expected in this early stage of moderate inflation. Consequently, demands for compensating wage increases are slow to come. All these facts are usually reflected in the statistical observation that the price level is increasing less strongly than the nominal stock of money, if there has been no prior inflationary experience in the country during the last generation (cf. Appendix Tables A2, A4–A6).

Whereas domestic prices and wages react slowly in the early years of a new and moderate inflation, foreign exchange rates move up more rapidly and strongly, even if they usually first lag the movement of the money stock. Exchange markets are better organized and market participants are usually better informed about changes affecting the whole economy. It follows that the beginning of a moderate inflation (if it is relatively higher than that of the trading partners) leads to an undervaluation of the currency compared to other currencies. Consequently, export industries benefit from prices (expressed in domestic currency) that have increased more strongly than the

TABLE 4

CASES OF MODERATE INFLATION AND STABILIZATION AT A LOWER PARITY

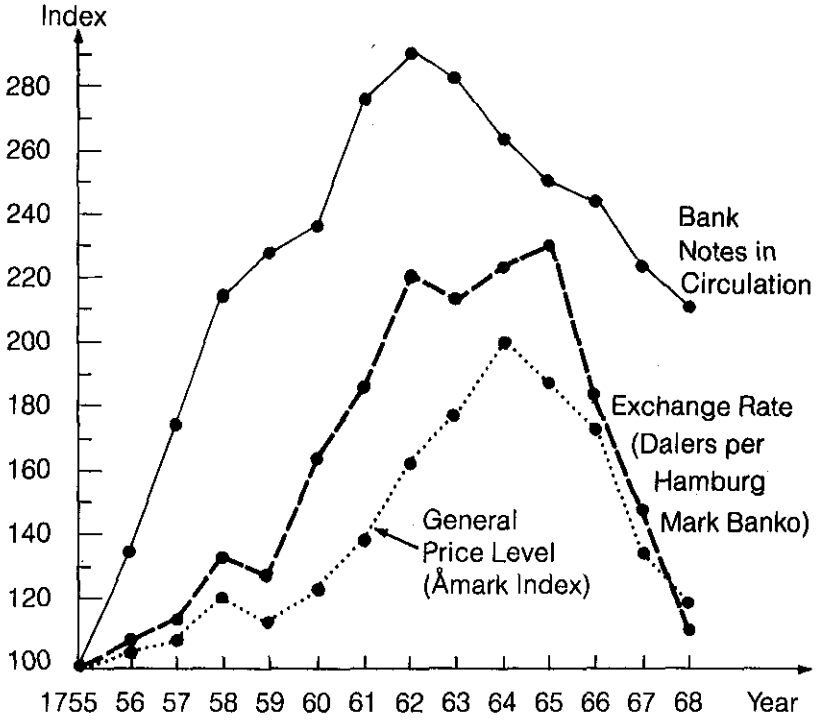
Country	Period of Inflation before Stabilization	Maximum of Domestic over Foreign Price Level[a]	Year of Maximum
Netherlands	1864–1875. No real inflation. Fall of silver price leads to abandonment of silver standard (1873) and adoption of gold standard (1875).	103.58[b]	1873
Austria-Hungary	1864–1896. No real inflation. Fall of silver price leads to denial of private rights to demand minted silver coins at parity (1879) and to adoption of gold standard (1892/96).	130[c]	1887
		121[d]	1890
		144[e]	1896
Argentina	1884–1899	255[f]	1891
		161[g]	1896
Czechoslovakia	1914–1927	818	1921

France	1914–1928	290	1916
Belgium	1914–1927	459	1927
Poland	1914/1924/–1927. Stabilization after hyperinflation (1924), and second stabilization after moderate inflation (1926).	235.10	Dec. 1924

[a]Normal = 100 for base year.
[b]Price of silver in London in terms of gold. This price fell further after 1873 (see Appendix Table A1), so fears of future devaluation and inflation were justified had the Netherlands remained on a silver standard.
[c]Maximum of relative prices until 1892, the year of the currency reform (see Appendix Table A1).
[d]Lowest relative price between 1892 and 1896.
[e]Maximum for 1864–1904 period (see Appendix Table A1). In 1896 the new gold parity became effective in setting a lower limit to the value of the Austrian guilder.
[f]Index for domestic price level only, as measured by export price index (see Appendix Table A2).
[g]Index for domestic price level only, as measured by Wage Index (see Appendix Table A2).
SOURCES: Table 1 and Appendix Table A1–A6; Bernholz (1982).

prices of most of their inputs. Similarly, import-competing sectors of the economy enjoy better competitive positions in domestic markets than before the inflation. On the other hand, the stronger rise of import prices than of the prices of goods produced at home leads to a positive feedback effect on inflation, a kind of "imported inflation." These relationships are rather long lasting, as can be seen from Figures 1 and 2 and Appendix Tables A2, A4–A6. Moreover, they seem to occur in most historical cases. The same is true for the qualitative characteristics associated with stabilizing moderate inflations relative to important trading partners.[2]

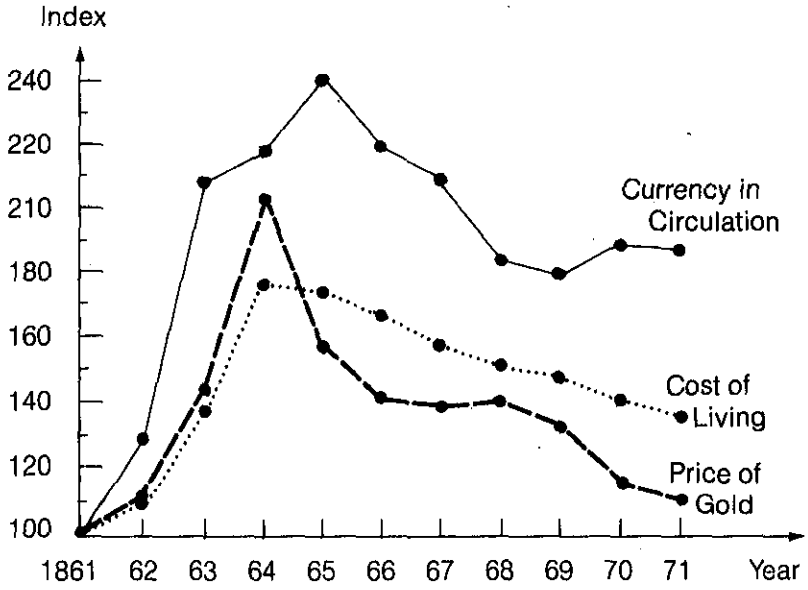
FIGURE 1
INDICES OF MONEY SUPPLY, PRICES, AND EXCHANGE RATES IN SWEDEN, 1755–68



SOURCE: Eagley (1971, pp. 115–17).

[2]For a fuller description of these qualitative characteristics and other historical evidence for 17 cases see Bernholz (1982) and Bernholz, Gärtner, and Heri (1985). The latter article also presents a model that attempts to explain these characteristics.

FIGURE 2
INDICES OF MONEY SUPPLY, PRICES, AND PRICE OF GOLD IN THE UNITED STATES, 1861–71



SOURCES: For money-supply and cost-of-living indices, U.S. Dept. of Commerce (1975, Series X, Part 2, p. 993, and Series E, Part 1, p. 212); for gold-price index, Mitchell (1908, Table 1, p. 4).

Stabilizing inflation relative to another country requires reducing the growth of the domestic money stock, at least compared with that of any given trading partner. Such a development took place in all cases shown in Figures 1 and 2 and Appendix Table A2. The respective reference countries were either on a pure gold standard or the gold premium itself was used to measure the movement of the exchange rate. Also, in the cases shown in Appendix Tables A4 and A6, the indices for the ratios of the money stocks fell, or at least did not increase, for some years. Although in the case of Belgium (Appendix Table A5) the annual figures do not show this movement, it is visible in the monthly figures for the second half of 1926.

The consequences of the relative stabilization of the money stock are shown in the respective figures and tables. First, the real stock of money moves back toward normal. The index for the price level is in accord with the index for the nominal stock of money. Second, the exchange rate falls more strongly than the price level, which still

may be increasing. Undervaluation of the currency vanishes, and purchasing power parity is nearly restored. In fact, even some overvaluation may result. These facts depict nothing other than a kind of stabilization crisis. Export and import-competing industries lose accustomed advantages of undervaluation and may even be hurt by some overvaluation. The disinflationary impact of the decrease in the growth rate of the money stock is reinforced by the downward movement of foreign exchange rates. How strongly these consequences will spread to other sectors of the economy depends on overall economic conditions.

The experience of the U.S. economy between 1973 and 1985 provides a good illustration of such stabilization (Corden 1984). First, the U.S. inflated more strongly than, say, Germany or Switzerland. As a consequence the values of the mark and Swiss franc increased much more than the relative U.S. cost of living index. However, when relative stabilization occurred in the United States, these exchange rates dropped, whereas the cost of living index increased further, though at a slower rate. Undervaluation of the dollar eventually turned into an overvaluation.

The political consequences of such recent developments in the United States are representative for the historical cases discussed here. Export industries, import-competing industries, and their employees feel the disciplining forces of foreign competition—of shrinking sales, profits, and employment. As such, interest groups feel pressure to increase their lobbying for protection from foreign competition, for price supports and/or subsidies. Politicians respond to those pressures in the hope of gaining or preserving the votes of people employed in those sectors of the economy. Although consumers will be hurt by trade restrictions, the costs are widely dispersed and usually are not associated with the protective political actions. An exception occurs if the expenditures for a given good (say, automobiles) amount to a substantial share of household expenditures in which cases it may pay for consumers to inform themselves and thus for politicians to be reluctant or unwilling to adopt trade restrictions (see Bernholz 1966).

Establishing a Sound Monetary Constitution after Moderate Inflation

What is the influence of the relationship just sketched on the possibility of introducing a sound monetary constitution after a moderate inflation? The sectors hurt by disinflation—certainly the export and import-competing industries and the people employed by them—

will soon exert pressure for protective legislation and administrative intervention. The accustomed benefits of undervaluation decrease and may even change into the competitive disadvantages of overvaluation as a result of the stabilizing measure.

Given this situation, governments can take quite different measures. For example, intervention could take the form of protective tariffs, import quotas (perhaps agreed on with foreign countries), and anti-dumping duties, or it could take the form of interventions in foreign exchange markets combined with an increase of the money supply. Interventions of this latter kind were pursued by the German Bundesbank and the Swiss National Bank in 1978 and by the British Exchange Equalization Account after April 1932 to depress the external value of the pound (see Kindleberger 1984, pp. 382–84).

Another possible course of action would be to introduce a stable currency with a fixed but still undervalued exchange rate. Such a proposal would readily gain support from export and import-competing industries, which would be hurt by further strengthening of the foreign exchange rate and thus a loss of undervaluation. In fact, export industries would prefer this over import duties and import quotas. And such stabilization would also be judged by export and import-competing industries to be preferable to subsidies. Moreover, politicians could even boast that they had finally provided an inflation-proof currency.

It remains to be shown that the foregoing factors were, in fact, instrumental in creating the sound monetary constitutions found in cases of the third category, that is, in episodes following moderate inflations. Argentina in the 1890s is a case not connected with war (see Bernholz 1984). After years of inflation and mounting foreign debts that were used to finance an unsustainable development boom, a general collapse in 1890 resulted in the Baring Crisis in London. The Argentinean national government, its 14 provinces, and many municipalities defaulted. Bank runs in 1891 ended with the liquidation in April of the Banco Nacional and the Bank of the Province of Buenos Aires. The panic reached its highwater mark that summer, and a general moratorium was declared from July 4 to October 18.

The situation swiftly turned around after the stabilizing measures were taken. The Rothschild Committee and the Argentinean federal government agreed on the following measures: a moratorium on the payment of foreign debt for several years; a funding loan of £15 million; no new foreign debts to be incurred by the Argentine government and no increase in national obligations in any arrangements with the provinces; and a reduction by the government of the stock of bank notes in circulation. The consequences of these measures

and the earlier developments are shown in Appendix Table A2. Undervaluation of the peso was an obvious consequence of the inflation and, after stabilization, the rate of undervaluation declined. Agriculture and such new domestic industries as sugar, paper, and textiles, which had been stimulated by the undervaluation, were hurt by this reversal.

In this situation, in which a further revaluation of the peso or even an overvaluation were expected, banker Ernesto Tornquist proposed in 1898 to return to the gold standard and to fix the exchange rate between paper and gold at a parity of 2.5:1. His suggestion was taken up by the government and passed by Congress in 1899, and was known as the Conversion Law.[3] This law fixed parity at 227.27 paper pesos for 100 gold pesos. At this parity the *Caja de Conversion* was obliged to exchange gold against paper in unlimited amounts. Scarcely any gold was available to secure the conversion of paper pesos into gold, but this really did not matter, since parity had been fixed at an undervalued level. Thus a balance of payments surplus resulted, gold had to be bought with paper money to maintain the parity, and the amount of paper money in circulation increased (see Appendix Table A3). By 1914 Argentina enjoyed the highest per capita gold stock in the world.

France is another case of the (re)introduction of a gold standard. Inflation and undervaluation, compared with the U.S. dollar, resulted from events of World War I (Appendix Table A4). Finally, after a renewed crisis, especially in foreign exchange markets, the new Poincaré government eliminated the low fixed interest rate on floating debts, increased taxes, cut expenditures, and began to refund the floating debt. Bank notes in circulation were reduced from 56 billion francs in July 1926 to 52.8 billion a year later. Consequently, the dollar exchange rate fell from an index value of 793.3 in July 1926 to 487.4 in January 1927, and French undervaluation rapidly dwindled.

Political forces in France, however, began to operate, limiting thereevaluation of the franc. According to Charles Kindleberger (1984, p. 358):

[3]President Roca's message accompanying the Conversion Law revealed the government's motivations for currency reform:

> [T]he instability of all values caused by the rapid increase of the values of the paper currency . . . strongly damages our most important branches of production. . . . These disadvantages are especially felt by the producers and manufacturers. The rise in the value of the currency changes the economic conditions under which we have lived for years, and disturbs the equilibrium of the value relationships, especially between wages, rents and production costs, which are changing extremely slowly, and the prices of products following world market prices [Quoted from Wolff 1920, pp. 56–57, my translation].

> [P]ressure began to come from businessmen, especially in the exporting automobile industry, not to let the rate get too high. In its report of 3 July, the Committee of Experts had warned against a high rate (of exchange or parity) which would produce a deflation like that being experienced in Britain. . . . In November, when Léon Juhaux, head of the Confédération Générale de Travail, the national trade-union federation, protested about rising unemployment in export industries, the franc was stabilized *de facto* at close to the rate recommended by Rueff, 124 francs to the pound and 25.51 to the dollar. . . . At this rate, however, the franc was seriously undervalued.

When stabilized the franc was indeed undervalued. The return to the gold standard in June 1928 did not change the de facto parity established in 1927. Thus the balance of payments remained in surplus for years, and gold and foreign exchange reserves, bank notes in circulation, and the price level all increased until 1933 (Appendix Table A4).[4]

Similar developments took place in Belgium, Poland, and Czechoslovakia at about the same time (Appendix Tables A5–A7). The return to the gold standard at undervalued parities took place in these countries with results similar to those for France. Belgium, however, allowed the index of the exchange rate for the dollar to drop only from 794 in July 1926 to 693.96 in October—much less than the decline of the French franc vis-à-vis the dollar. In Czechoslovakia, on the other hand, the index of the exchange rate decreased even more than in France, namely, from 1,628 in 1921 to 691 in 1923, when stabilization occurred. In Poland a second stabilization took place in 1926, after a new moderate inflation had followed the 1924 stabilization of the hyperinflation. Obviously the new exchange rate fixed at 8.917 zloty per U.S. dollar (the rate selected in 1924 was 5.184 zloty per dollar) was undervalued and, until 1928, led to a substantial increase of gold and foreign exchange reserves (see Appendix Table A7 and League of Nations 1946, pp. 108–11).

Patterns fitting into the third category are also found in the cases of Austria-Hungary (1872–92, see Appendix Table A1) and the Netherlands (1864–75).[5] Although the movements of exchange rates were very small, they led to strong political reactions. For example, the

[4]For other accounts of the Poincaré stabilization in France, see Sargent (1983) and Makinen and Woodward (1985).

[5]See Mises (1907, 1912) for a pioneering discussion of these cases along the lines of the present paper. Also, on the case of the Netherlands, see the early work of Ludwig Bamberger (1876), Ottomar Haupt (1886), and P. Kalkmann (1901). These studies demonstrate that in the history of economic thought, the discovery of certain relationships has often shown that similar facts were already stated by pioneers in earlier cases.

value of the Austrian guilder in pound sterling increased by merely 8.4 percent between 1886 and 1891 (see Appendix Table A1). The movement of the real exchange rate was somewhat stronger, 14.6 percent, from 1882 to 1891 (if the figures can be trusted), but even this figure is small compared with today's standards. The movement of the Dutch exchange rate that led to the currency reform of 1875 was even less pronounced, at 3.1 percent. One explanation of why such small movements of exchange rates were able to generate such strong political reactions is that people in the latter half of the 19th century were accustomed to relative monetary stability and therefore were quite sensitive to inflationary pressures. Moreover, Mises (1907, pp. 561–62) points out that all experts expected a further revaluation of the Austrian guilder: "The generally shared belief in a persistent 'advance' of the Austrian currency was one of the most effective motives for the rapid beginning of the reform" (also see Menger 1892).

The introduction of the gold exchange standard in British India seems to have followed the same pattern as in Austria-Hungary and the Netherlands. The colonial government ended silver convertibility in June 1893, after the exchange rate of the Indian rupee had fallen from 22.5 pence sterling in 1873 to 14.625 pence in May 1893. At the same time the government announced that it would buy gold in any amount against rupees at 16 pence per rupee, but would not buy rupees with gold. Given that the fall of the rupee was the result of the declining price of silver, it is remarkable that the new parity was not set higher, and that no convertibility of the rupee into gold was guaranteed. It is at least probable (though I lack direct evidence) that even the colonial government took into account the interests of export and the import-competing industries (Heyn 1904).

After the termination of silver convertibility, the exchange rate of the rupee fluctuated for some time and reached a low of 12.5625 pence sterling in January 1894. But it became obvious that an undervalued gold parity had been selected as the upper limit for the value of the rupee. After 1898 the exchange rate reached 16 pence, and it remained a little above this parity only because of government intervention (Heyn 1904, pp. 163–65). Gold and sterling exchange reserves were accumulated, and the balance of payments showed a surplus (Heyn 1904, pp. 314–15).

It is perhaps revealing that legislation in Austria-Hungary (1892), in the Netherlands (1875), and in British India (1893) merely set an upper limit on the parity for the value of the domestic currency. Only the purchase of gold against domestic currency was guaranteed by

law at the legal parity.[6] In Austria-Hungary full de facto convertibility was reached only when the Austrian-Hungarian bank began, in 1896, to follow the initiative of the government and the wishes of the business world and sell gold at the new parity (Mises 1907, p. 582). The political situation in the Netherlands and India was probably similar. The Bank of the Netherlands as early as 1875 began to sell gold at 1,653 guilders per kilogram of fine gold (Kalkmann 1901, p. 56). Finally, the British Indian government, too, was ready if not legally bound to exchange rupees into gold at parity in 1899 (Heyn 1904, p. 316).

Why Stabilization after Moderate Inflation?

The historical evidence clearly shows that the introduction of sound monetary constitutions is politically feasible if stabilizing measures have been undertaken following moderate inflations. It is, however, not clear why stabilization was undertaken at all, given the opposing political forces.

We have discussed the reasons for stabilizations following abnormal periods of war (cases of the second category), but how can we explain the stabilizations that occurred following moderate inflations and the absence of wars? The Dutch and Austrian guilders and the Indian rupee decreased externally because of the fall of the price of silver. In the case of Argentina, inflation and foreign credit supported a development boom that led to a liquidity and credit crisis. None of these factors had anything to do with war. Thus other political factors must have been at work permitting a move toward stabilizing fiscal and monetary policies.

The realization that the inflationary process is, or may be, getting out of control is a major force working against expansionary policies. As the inflation proceeds, a larger number of people, including wage-earners and their unions, will correctly perceive inflation. Consequently, spending increases, bottlenecks develop, and workers and unions begin to include the expected rate of inflation in their wage demands. Once this happens, the political benefits from inflation—namely, lower unemployment and greater tax receipts—begin to fade while the costs of inflation become more pronounced, as creditors

[6] As Mises (1907, pp. 581–82) explained:

> [I]t seems as certain that the victory of the reform project was assisted by just the fact that accepting the bills of the government only prohibited, at the moment, a further increase of the value of the currency and that the chance of its eventual decrease, if such existed, was left open. By agreeing to the currency reform the friends of easy money lost nothing but gained much, namely, the fixation of an upper limit for the value of the currency.

and those with relatively fixed incomes suffer real-income losses. Government officials and opposition leaders then find it politically rewarding to propose and enact anti-inflationary measures. A comparison with other countries that have greater monetary stability may also engender a widespread public belief (which politicians find it beneficial to respond to) that a stabilization policy is necessary. The prevention of capital flight, moreover, induced by outside stability, may be an additional motive to turn away from inflationary policies.

Although stabilization efforts may be expected after the main advantages of moderate inflation have been exhausted, this does not mean that politicians will persist in stabilization efforts until an inflation-free situation has been reached. Indeed, as we have shown, disinflation itself awakens political forces opposing further pursuit of stabilization policies. Thus, another turnaround may be expected if the propitious moment of mounting pressures on export and import-competing industries is not used to introduce a sound monetary system posited on conditions acceptable to the political forces opposing further stabilization. If this opportunity is missed a further round of expansionary and/or protectionist policies can be expected. These hypotheses have ample support, especially in Latin America (Paldam 1985) and, for the last several decades, also in Western industrialized countries (see Table 1). After the first turnaround, an even higher level of inflation is often reached, since the expansionary process begins from an inflationary base that is already established. Hence, economic systems giving discretionary powers to governments or central banks can never be inflation-free in the long run.[7]

The Maintenance of Monetary Stability

Long-term monetary stability—an inflation-free monetary system—can be maintained only if politicians and central bankers have no discretionary authority to influence the stock of money. No currency in history has ever maintained its long-term stability without constitutional constraint. History also shows, however, that even the best monetary constitutions cannot be maintained indefinitely. Periods of a century or more of price stability have been experienced only by several countries during the 19th century, and therefore seem to be rare accomplishments. Moreover, major wars have always been the biggest danger for the survival of sound monetary constitutions.

[7]This statement does not deny that independent central banks are more likely to produce lower rates of inflation than dependent central banks. Both, however, operate subject to the economic demands of political forces and so will, at best, be able to maintain a low average rate of inflation but never an inflation-free system.

What can be hoped for given these observations? First, apart from avoiding major wars, the rare opportunities for introducing sound monetary constitutions must be seized with courage and determination. Furthermore, to implement and maintain a constitution with characteristics best suited to prevent inflation over the long run, a concrete plan has to be present at the right moment. Such a plan should include the following six measures:

1. A constitutional restriction on the power of governments to create budget deficits;
2. A constitutional safeguard that prevents governments and central bankers from influencing the stock of money;
3. A mechanism limiting the stock of money;
4. A requirement that the monetary constitution can be amended only by qualified majorities, say, by two-thirds in both chambers;
5. An obligatory popular referendum to validate all changes of the monetary constitution passed by qualified majorities;
6. No emergency clauses empowering the cabinet to make changes under certain conditions.

The enactment of these measures would narrowly limit discretionary policy, but they are not sufficient to control inflation. The pure gold and silver standards had one clear advantage. The rule of convertibility of bank notes against the precious metal and vice versa, at a fixed parity, could always be tested by everybody and could not be easily reinterpreted by governments, central banks, or supreme courts. The latter condition would not be true for a constitutional rule prescribing, say, an annual monetary growth rate of 2 or 3 percent. First, the public would neither be able to test the rule nor determine if it had actually been followed. Second, it would be difficult to decide which monetary aggregate should grow by which percentage in which period against which base. Here there would be ample room for various interpretations, so that the constitutional rule would be of little value if it were not clearly defined. True, it would not be impossible to define the monetary aggregate, the base, and the relevant period in the constitution. But what would happen if the money aggregate selected became less and less relevant because of financial innovations? Moreover, the observance of the rule could still not be monitored by the public. Who should control the central bank? Another government agency? Or would individual persons have a right to sue government or the central bank for violating the rule?

Stabilizing a weighted price index would lead to similar problems. The prices and thus the index could be manipulated by the government. And if the weights and commodities of the basket were fixed

in the constitution they might lose their relevance over time, because of substitution and other factors.

Given these difficulties, there seems to be good reason to favor a simple monetary arrangement such as the pure gold standard. To return to a gold standard, however, would require greater flexibility than prevailed before World War I to prevent the higher variance of real variables, as mentioned in the first section of this paper. Moreover, during World War I no European country with notes issued by the government or a central bank monopoly maintained the gold standard. This was true even for neutral countries. Only Albania, which had neither government notes nor a central bank, stayed on the gold standard (League of Nations 1946, p. 93). Albania is perhaps not a good example, but it seems that only a removal of the monetary system from the sphere of the state may be sufficient to maintain a stable monetary constitution under adverse conditions.

My own tentative proposal to solve these problems would be to abolish the central bank, institute a pure gold standard, and allow free banking. The monetary constitution would only postulate that each creditor had the right to demand payment from each debtor in gold at the fixed parity. Any violation of this rule would be severely punished by private and/or public law. Moreover, the constitution would grant the right of any bank fulfilling certain conditions—including unlimited liability of its shareholders—to issue bank notes and to create any type of claim preferred. Finally, any government owned or controlled banks would be outlawed by the constitution.

These are radical proposals. But the Scotch free banking system combined with the gold standard seems to have worked quite well without a central bank as a lender of last resort (White 1983). And the Swiss system seems not to have experienced too many problems before the foundation of the national bank in 1907. But the most important feature of the proposal would be the complete removal of government influence from the monetary system and the opening up of the path of innovation in the field of money.

APPENDIX TABLE A1

MONEY, PRICES, AND EXCHANGE RATES IN AUSTRIA-HUNGARY

Year	P_w[a]	M[b]	CPI[c]	PI*[d]	CPI / PI*	ER[e]	CPI / PI*·ER
1864	100		100	100	100	100	100
1865	99.94		92.01	98.32	93.58	93.97	99.59
1866	99.59	100	91.58	100.84	90.82	103.74	94.80
1867	98.68	110	91.14	99.16	91.91	108.61	84.63
1868	98.57	115	89.31	96.64	92.42	100.44	92.01
1869	98.47	120	91.04	89.92	101.25	106.69	94.90
1870	98.68	130	93.95	92.44	101.63	106.94	95.04
1871	98.57	138	96.87	96.64	100.24	104.68	95.76
1872	98.27	139	103.89	107.56	96.59	95.29	101.36
1873	96.54	141	106.16	106.72	99.48	95.74	103.90
1874	95.01	128	104.86	101.68	103.13	95.71	107.75
1875	92.67	127	101.62	98.32	103.36	96.40	107.22
1876	85.95	130	100.11	96.64	103.59	104.62	99.02
1877	89.31	126	100.43	92.44	108.64	105.40	103.08
1878	85.64	131	96.54	84.87	113.75	101.64	111.92
1879	83.50	126	96.44	82.35	117.11	100.55	116.47
1880	85.13	131	96.98	85.71	113.15	101.59	111.38
1881	84.22	135	95.03	83.19	114.23	101.65	112.38
1882	84.11	144	94.28	84.87	111.09	103.14	107.71
1883	82.38	146	93.95	84.87	110.70	103.52	106.93
1884	82.48	146	92.87	79.83	116.33	105.16	110.63
1885	79.22	140	89.42	73.95	120.92	107.78	112.19
1886	73.87	143	86.39	69.75	123.86	109.16	113.46
1887	72.68	146	88.55	68.07	130.09	107.10	121.46
1888	69.59	153	87.26	70.59	123.61	103.07	119.93
1889	69.62	158	88.66	70.59	125.60	103.07	121.85
1890	77.72	163	88.77	73.11	121.42	100.05	121.36
1891	73.42	167	89.20	72.27	123.43	100.70	122.57
1892		173[f]	84.88	68.91	123.18	102.87	119.74
1893			85.42	68.91	123.96	106.73	116.14
1894			84.88	62.18	136.51	107.50	126.98
1895			86.93	60.50	143.69	105.13	136.67
1896			83.37	61.34	135.91	103.60	131.19
1897			84.02	62.18	139.12	103.24	130.88
1898			84.67	65.55	129.17	103.76	124.49
1899			86.39	70.59	122.38	104.05	117.62
1900			86.82	76.47	113.53	104.41	108.74
1904		228[f]	88.34	69.75		105.24	120.35

[a]Price of silver in pence sterling.
[b]Bank notes and government notes in circulation.
[c]Cost of living index in Austria.
[d]Rousseaux' overall price index for Great Britain.
[e]Exchange rate, Austrian guilders per £10 sterling.
[f]Rough estimate.

SOURCES: P_s and ER until 1885: Soetbeer (1886); P_s and ER, 1886–91: Menger (1936, pp. 259–61); M until 1891: Lexis (1893), for later years: Mises (1907); ER from 1892–1904: Kaiserliches Statistisches Amt (1903); CPI: *Oesterreichisches Statistisches* Zentralamt (1979, pp. 676–79); PI*: Mitchell (1962).

APPENDIX TABLE A2

PAPER MONEY IN CIRCULATION, BORROWINGS ABROAD, PRICE OF GOLD PESOS, EXPORT PRICE AND WAGE INDICES IN ARGENTINA, 1884–1900

Year	Paper Money in Circulation[a]	Borrowings Abroad[b] Public	Borrowings Abroad[b] Total	Price of 100 Gold Pesos[c]	Export Price Index	Wage Index
1884	61,739		39,732	100		
1885	74,820		38,732	137		
1886	89,198	41,587	67,580	139	100	100
1887	94,071	45,548	153,498	135	97	
1888	129,505	91,760	247,796	148	93	
1889	163,648	30,833	153,612	191	118	
1890	245,101	11,420	45,395	251	165	125
1891	261,408	2,506	8,242	387	255	
1892	281,609	0		332	232	138
1893	306,743	0		324	207	
1894	298,703	0		357	209	146
1895	296,743	0	184,106	344	216	
1896	295,166	0	(annual	296	204	161
1897	292,704	0	average:	291	179	
1898	292,047	0	20,460)	258	177	
1899	291,342	0		225	138	
1900	295,166	0		231	154	

[a]Millions of paper pesos.
[b]Millions of gold pesos.
[c]In paper pesos.
SOURCE: Williams (1920).

APPENDIX TABLE A3

ARGENTINEAN BALANCE OF PAYMENTS, 1884–1904 (MILLIONS OF GOLD PESOS)

Year	Exports	Imports	Balance of Trade[a]	Borrowings	Interest	Balance of Borrowings[b]	Balance of Payments[c]
1884	68,030	94,056	−26,026	39,732	27,574	12,158	−13,856
1885	83,879	92,222	− 8,343	38,732	22,637	15,522	6,179
1886	69,835	95,409	−25,574	67,580	26,764	40,816	15,242
1887	84,422	117,352	−32,930	153,498	37,305	116,193	83,263
1888	100,112	128,412	−28,300	247,796	49,523	198,273	169,973
1889	90,145	164,570	−74,425	153,612	59,802	93,810	19,385
1890	100,819	142,241	−41,422	45,395	60,241	−14,846	−56,268
1891	103,219	67,208	36,011	8,242	31,575	−23,333	12,678
1892	113,370	91,481	21,889	—	—	−15,873	6,016
1893	94,090	96,224	−2,133	—	—	−20,130	−22,263
1894	101,688	92,789	8,889	—	—	−30,577	−21,688
1895	120,068	95,096	24,971	17,197	38,149	−20,952	4,019
1896	116,802	112,164	4,638	37,144	39,863	−2,719	1,919
1897	101,169	98,289	2,880	38,295	43,985	−5,690	−2,810
1898	133,829	107,429	26,400	46,063	50,530	−4,467	21,934
1899	184,918	116,851	68,067	24,966	54,698	−29,732	38,335

APPENDIX TABLE A3 (cont.)

ARGENTINEAN BALANCE OF PAYMENTS, 1884–1904 (MILLIONS OF GOLD PESOS)

Year	Exports	Imports	Balance of Trade[a]	Borrowings	Interest	Balance of Borrowings[b]	Balance of Payments[c]
1900	154,600	113,485	41,115	27,540	58,575	−31,033	9,082
1901	156,716	113,960	42,756	—	—	—	—
1902	179,487	103,344	76,143	—	—	—	—
1903	220,985	131,207	89,778	—	—	—	—
1904	264,158	187,306	76,852	—	—	—	—

[a]Exports minus imports.
[b]Borrowings minus interest.
[c]Balance of trade plus balance of borrowings.
SOURCES: 1884–1900: Williams (1920); 1901–1904: Wolff (1905).

APPENDIX TABLE A4

MONEY SUPPLY, COST OF LIVING, AND EXCHANGE RATES: FRANCE RELATIVE TO UNITED STATES, 1914–34

Year	M[a]	CPI[b]	M*[c]	CPI*[d]	M / M*	CPI / CPI*	ER[e]	CPI / CPI*·ER	Gold and FE[f]
1914	100	100	100	100	100	100	100	100	100
1915	168	120[g]	96	104	175	115.38	107.58	107.25	—
1916	212	129[g]	105	118	202	109.32	113.73	96.12	—
1917	257	138[g]	113	142	227	97.18	111.50	89.88	—
1918	376	206[g]	127	174	295	118.39	108.61	109.00	—
1919	474	238	141	177	336	134.46	140.57	95.65	—
1920	521	342	157	217	332	157.60	278.90	56.51	114.79
1921	514	309	142	180	362	171.67	260.10	66.00	108.61
1922	496	296	129	167	384	177.25	237.90	74.51	108.24
1923	510	334	138	170	370	196.47	320.10	61.38	109.66
1924	545	369	139	169	395	218.34	373.00	58.54	109.55
1925	602	400	138	174	436	229.89	405.02	56.76	109.68
1926	716	505	142	174	504	290.22	595.59	48.73	115.35
1927	731	514	138	170.31	530	243.09	491.64	49.44	160.55
1928	872	519	138	168.13	632	308.70	490.20[h]	62.97	338.16

APPENDIX TABLE A4 (cont.)

MONEY SUPPLY, COST OF LIVING, AND EXCHANGE RATES: FRANCE RELATIVE TO UNITED STATES, 1914–34

Year	M[a]	CPI[b]	M*[c]	CPI*[d]	M / M*	CPI / CPI*	ER[e]	CPI / CPI*·ER	Gold and FE[f]
1929	936	556	134	167.63	699	331.68	492.11	67.40	353.82
1930	1043	582	134	161.26	778	360.91	491.08	73.49	417.39
1931	1170	569	157	145.34	745	391.50	491.37	79.68	477.48
1932	1160	526	158	130.25	734	403.84	490.39	82.35	465.59
1933	1128	520	162	125.39	696	414.71	492.26	84.25	416.93
1934	1116	516	200	133.10	558	387.68	491.81[i]	78.83	—

[a]Bank notes in circulation in France.
[b]French consumer price index.
[c]Currency held by public plus demand deposits in United States, end of year.
[d]U.S. consumer price index.
[e]Exchange rate, francs per dollar.
[f]Foreign exchange reserves.
[g]Index for food only.
[h]On 25 June 1928 France returned to a fixed gold parity that was equivalent to a U.S. dollar parity of 25.52 francs per dollar. The index figure is an average of the first half of the year up to this date.
[i]On 30 June 1934 the devaluation of the U.S. dollar in terms of gold led to a new parity of 15.075 francs per dollar. The index figure for 1934 is given in terms of an unchanged parity. Taking the change into account leads to an index figure of 290.52. Thus the franc was still undervalued before but overvalued after the devaluation of the dollar.
SOURCES: Statistisches Reichsamt (1921–22, 1924–25; 1936).

APPENDIX TABLE A5

MONEY, PRICES, AND EXCHANGE RATES IN BELGIUM, 1913–33

Year	M[a]	M*[b]	M / M*	CPI[c]	CPI*[d]	CPI / CPI*	ER[e]	CPI / CPI*·ER	Gold & FE[f]
1913	100	100	100	100	100	100	100	100	100
1919	534	141	379	390	156	250	—	—	78
1920	537	159	338	455	200	228	263	87	71
1921	613	144	426	400	174	230	259	89	69
1922	643	131	491	374	169	221	252	88	69
1923	700	139	504	428	173	247	370	67	69
1924	763	141	541	501	172	291	416	70	73
1925	757	142	533	533	178	299	406	74	73
1926	841	143	588	639	176	363	589	62	185
1927	958	144	665	789	172	459	693	66	216
1928	1,159	138	840	817	169	483	694	70	206
1929	1,341	135	993	867	169	513	693	74	246
1930	1,640	135	1,215	890	165	539	695	78	329
1931	1,825	158	1,155	799	151	529	693	76	358
1932	1,811	159	1,139	721	137	526	693	76	369
1933	1,707	162	1,054	715	131	546	559[g]	98	384

[a]Notes in circulation in Belgium, end of year.
[b]Currency held by public plus demand deposits in United States, end of year.
[c]Cost of living index, Belgium.
[d]Cost of living index, United States.
[e]Exchange rate, Belgian francs per U.S. dollar.
[f]Foreign exchange reserves.
[g]In 1933 the U.S. dollar was devalued against gold.
SOURCES: Statistisches Reichsamt (1928; 1925, 1934).

APPENDIX TABLE A6

MONEY, PRICES, AND EXCHANGE RATES IN CZECHOSLOVAKIA, 1913–27

Year	M[a]	M*[b]	M / M*	CPI[c]	CPI*[d]	CPI / CPI*	ER[e]	CPI / CPI*·ER	Gold and FE[f]
1913	—	100	100	—	100[g]	100	100	100	—
1914	100[h]			100					—
1919	1850[i]	143	1298	—	156	—	—	—	—
1920	2431	159	1529	—	200	—	1343	—	100
1921	3099	144	2152	1423	174	818	1628	50	235
1922	2783	131	2124	1289	169	763	891	86	436
1923	2544	139	1830	918	173	531	691	77	667
1924	2273	141	1612	914	172	531	696	76	471
1925	2122	142	1494	951	178	534	687	78	465
1926	1997	143	1397	938	176	533	686	78	654
1927	2057	144	1428	976	172	567	684	83	787

[a]Notes in circulation in Czechoslovakia, end of year.
[b]Currency held by public plus demand deposits in United States, end of year.
[c]Cost of living index, Czechoslovakia.
[d]Cost of living index, United States.
[e]Exchange rate, Czechoslovakian crowns per U.S. dollar.
[f]Foreign exchange reserves.
[g]March–December 1913.
[h]Estimated for 1914 as a percentage of the Austrian-Hungarian circulation, corresponding to the figures given by Amonn (1923, pp. 3–4) for this year and for February 1919.
[i]February 1919 following Amonn (1923, pp. 3–4).
SOURCES: Statistisches Reichsamt (1928; 1925–34).

APPENDIX TABLE A7

MONEY, PRICES, AND EXCHANGE RATES IN POLAND, 1914–33

Year	M[a]	M*[b]	$\frac{M}{M^*}$	CPI[c]	CPI*[d]	$\frac{CPI}{CPI^*}$	ER[e]	$\frac{CPI}{CPI^* \cdot ER}$	$\frac{M}{CPI}$	Gold & FE[f]
1914		116		100	100	100	100	100		
1915		111		206	99	208				
1916		123		341	112	304				
1917		131		1,029	143	720				
1918	252	148	170	1,424	165	863			18	
1919	1,310	164	799	2,016	182	1,108	1,512	73	65	
1920	12,165[g]	182[g]	6,684	12,165	200	6,083	5,312	115	100	
1921	56,569	165	34,284	46,843	150	31,229	76,839	41	121	100
1922	195,540	149	131,235	231,000	139	166,187	413,901	40	85	361
1923	30,897,559	161	19,191,030	119,656,600	143	83,675,944	117,859,147	71	26	384
1924										
March	146,942,673		90,705,354	287,296,800		200,906,853	221,915,198	91	51	
Dec.	244,370,351	162	150,845,896	336,600,000	143	235,384,615	223,214,286	105	73	1,203
Dec.	299,433,263[h]		184,835,348						89	
1925	361,537,940	162	223,171,568	262,800,000	154	170,649,351	241,072,971	71	138	658
1926	452,920,535	165	274,497,294	205,818,213	158	130,264,692	377,780,735	34	220	977
1927	582,009,542	162	359,265,149	227,927,147	156	146,107,146	378,811,134	39	255	702
1928	682,976,225	160	426,860,141	229,072,510	154	148,748,383	380,728,607	39	298	2,503
1929	709,635,849	156	454,894,775	232,279,525	154	150,830,860	381,070,306	40	306	2,301
1930	696,164,732	157	443,417,027	216,244,449	149	145,130,503	381,641,169	38	322	1,829

APPENDIX TABLE A7 (cont.)

MONEY, PRICES, AND EXCHANGE RATES IN POLAND, 1914–33

Year	M[a]	M*[b]	$\frac{M}{M^*}$	CPI[c]	CPI*[d]	$\frac{CPI}{CPI^*}$	ER[e]	$\frac{CPI}{CPI^* \cdot ER}$	$\frac{M}{CPI}$	Gold & FE[f]
1931	647,555,665	183	353,855,555	196,773,286	137	143,630,136	381,946,330	38	329	1,526
1932	587,924,775	184	319,524,334	179,134,703	124	144,463,470	382,099,093	38	328	1,198
1933	596,968,323	189	315,856,256	163,099,627	118	138,220,023	274,885,273[i]	50	366	1,058

[a]Bank notes issued by the Polish State Loan Bank until May 1924, and then by the Bank of Poland. From the second figure for December 1924, currency in circulation including bank notes of the Bank of Poland, token coins, and token notes (with denominations up to five zlotys) issued by the government; end of period figures.

[b]Currency in circulation in the United States, end of year.

[c]Until 1920 Polish wholesale price index (Fiedorowicz); from 1921. Polish cost of living index 1921–24 figures are for December (except in March 1924); in other years figures are annual averages.

[d]U.S. cost of living index, annual averages.

[e]Polish marks per U.S. dollar until March 1924. Thereafter, Polish zlotys per U.S. dollar (1,800,000 marks = 1 zloty). Average for July and December in 1918, average of December for 1921–24, annual averages for all other years.

[f]Foreign exchange reserves.

[g]1920 set equal to figure for CPI (1920) or CPI* (1919; since CPI* figure refers to end of period), respectively, 12,165 and 182. 1920 thus serves as a base, since Polish monetary figures for 1918–19 are probably too low.

[h]The figure refers to currency in circulation, including coins and state cash notes (Staatskassenscheine).

[i]In 1933 the U.S. dollar was devalued against gold.

SOURCES: Statistisches Reichsamt (1928; 1924/25, 1934). For foreign exchange rates additionally: Young (1925) and Karpinski (1921/22).

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The Relevance of Constitutional Strategy

James M. Buchanan

It would be erroneous to interpret Peter Bernholz's (1986) paper as another argument for a commodity-based monetary standard, and it would also be amiss to interpret the paper somewhat more generally as an argument for monetary rules (that is, for some monetary constitution) as opposed to nonconstrained discretionary authority on the paper of modern central banks. The paper is, of course, both of these; it does contain a powerful argument for monetary rules, and it does come down in favor of a commodity-based standard. These two strands of discussion are imbedded in a genuinely massive array of data from the monetary histories of many nations, an array that will in itself insure the paper's longevity. Peter Bernholz has established himself as perhaps the world's leading authority on the comparative history of inflations.

I want in my comment, however, to emphasize a feature of the Bernholz paper that is more important than any of those noted above. I refer to the innovative integration of what we may call "constitutional strategy" into the discussion.

A Methodological Schema

I propose to examine the Bernholz discussion in terms of a general methodological schema that can then be used in particular applications, including monetary policy. There are two categorically distinct classifications: *the theory of economic policy* on the one hand and *constitutional political economy* on the other. In the first category, analysis (whether positive or normative) is limited to the constraint that the basic institutions through which policy actions are taken are

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considered invariant. In the second main category, these institutions are considered to be variable, and alternative regimes are subject to examination.

There is a further breakdown within the two main categories. Within each category, I separate positive analysis from normative, and, further, I distinguish two types of positive analysis and two types of normative analysis under each main category.

Theory of Economic Policy

Consider first, subcategory IA–1 of the schema (see below), the domain of the traditional theory of monetary policy. Here the analyst examines the effects of alternative policy actions that the authorized agents may take under existing institutions. This sort of analysis is conceptualized as offering potential input into the actual policy choices of agents empowered to make decisions. Bernholz is essentially unconcerned about this type of inquiry.

At the outset of his discussion, Bernholz focuses on the inquiry under subcategory IA–2, namely, an analysis of the incentive structure faced by agents empowered to act within existing institutions and an explanation-prediction of those agents' behavior. Bernholz suggests that existing monetary regimes exhibit an inflationary bias due to the vulnerability of agents to the unidirectional political pressures toward inflation. He backs up his prediction with a carefully prepared exhibition of data drawn from the experience of many countries over long periods of time.

As the shift is made into the normative theory of policy, Bernholz pays little or no attention to the idealized policy pattern that might characterize perfect adherence to the dictates of some agreed-on or postulated social welfare function. The possible content of discussion under IB–1 does not interest him because it is deemed to be irrelevant. The prior analysis under IA–2 offers the essential input into that of IB–2, and here the normative argument comes down clearly for rule-directed behavior of monetary agents.

Constitutional Political Economy

The second major category, constitutional political economy, is subdivided analogously to the first category. Under subcategory IIA–1, I have included positive analyses of the operations of alternative sets of rules, arrangements, or regimes. In monetary matters, this area of inquiry involves comparisons of the predicted working properties of commodity-based standards, competitive money regimes, discretionary fiat issue by governmental agencies, rule-constrained fiat issue, and others. Analyses here must, of course, draw on and use

A METHODOLOGICAL SCHEMA

I. Theory of Economic Policy
   A. Positive
      1. Incidence and effects of alternative policy choices under given institutional arrangements.
      2. Analysis of the predicted behavior of agents empowered to make choices under given institutional arrangements.
   B. Normative
      1. Argument in support of policy choice norms preferred by analyst independently of possible constraints derived from analysis under IA–2.
      2. Argument in support of policy choice norms preferred by analyst as constrained by behavioral predictions derived in IA–2.

II. Constitutional Political Economy
   A. Positive
      1. Incidence and effects of alternative rules, regimes or institutions within which policy choices are made by designated agents.
      2. Analysis of the predicted behavior of persons and groups involved in making changes in the basic rules or institutions.
   B. Normative
      1. Argument in support of rules or institutions preferred by analyst independently of possible constraints derived from analysis under IIA–2.
      2. Argument in support of rules or institutions preferred by analyst as constrained by behavioral predictions derived from analysis of IIA–2.

that summarized under IA–2. Most of the positive analysis that has emerged under constitutional economics could be classified as falling within this subcategory IIA–1.

The innovative feature of the Bernholz paper lies in the specific inclusion of the inquiry that I have labelled under subcategory IIA–2, that is, the attempt to explain and predict the choices among regimes, and the analyses of the processes through which constitutional-institutional changes or reforms are made. Almost no research has been devoted to this area of inquiry. As I have noted in the schema, the analysis in IIA–2 is analogous to that in IA–2, where an attempt is made to explain and predict choices among policy actions within existing institutions. In IA–2, analysis concentrates on the incentive structure faced by agents empowered to make choices, and it is from this structure that the prediction of the inflationary bias

emerges. In IIA–2, by comparison, analysis concentrates on the pressures toward constitutional changes in existing institutions.

Toward a Positive Theory of Constitutional Choice

Why has this area of inquiry (under IIA–2) been neglected? In part the answer lies in the generalized failure of economists to consider constitutional rules, that is, to examine the institutions through which policy must be implemented, and to undertake the research summarized in the second major category of the schema. Modern public choice theory has been instrumental in correcting this neglect, but, within public choice itself, we may still ask why so little attention has been paid to what may be called the "positive theory of constitutional choice."

The answer to this more specific question is complex. Those of us who have long held that policy reform can only come through changes in the rules of politics and who have called on economists to shift their attention to the constitutional stage have implicitly assumed that such a shift, in itself, largely eliminates the dilemma-like setting that prevents preferred policy patterns from emerging at the level of choices dictated by given institutional arrangements. In a sense, we have implicitly assumed that there is a total transformation in the choice setting when we shift from choices within given institutional regimes to choices among the regimes themselves. If the incentive structure for persons in identified roles is such as to prevent normatively preferred patterns of outcomes from being realized, then it is deemed necessary to change the incentive structure by placing choosers in positions where precise identification of roles becomes impossible. The Buchanan-Tullock veil of uncertainty and the Rawlsian veil of ignorance are familiar devices that tend to accomplish this total transformation of the choice setting as between the two levels.

In effect, Bernholz pulls us up short and suggests that, after all, we are caught up in our own histories. We cannot consider constitutional change *carte blanche*, and, hence, we will tend to react to proposals for changes in the rules in terms of an incentive structure that can be subjected to examination by economists. While we may want to acknowledge that there are categorical differences between choices among alternative policy actions within existing institutional arrangements and choices among the arrangements themselves, we need not go all the way to postulate that there is no positive analysis relevant to institutional choices—that is, to the choices of rules shaping individual choice sets. We need not presume, as our practice

might have suggested, that subcategory IIA–2 is empty of potential content. If, however, we bypass IIA–2, there is no relevant content in subcategory IIB–2, the second of the normative subcategories that I have included under constitutional political economy. If the second major category here is restricted so as to eliminate IIA–2, then analysis in IIA–1 allows the analyst to shift directly to IIB–1 when he seeks to advance arguments in support of preferred rules, quite independently of the rule-feasibility set that the analysis of IIA–2 might allow him to define.

Conclusion

I apologize for what is surely an overly taxonomic comment. Let me conclude by summarizing the Bernholz argument. There is an inflationary bias in the operation of existing monetary arrangements. This bias stems from the incentive structure that agents confront when making policy choices. Analysis of alternative institutional structures suggests that such bias can be eliminated only under some commodity-based monetary standard. As historical examples and analysis indicate, reforms in monetary rules in the direction indicated to be preferred can be predicted to occur only in specific circumstances defined by the incentives faced by relevant interest groups in modern democracies. In particular, Bernholz suggests, only after periods of moderate but not hyperinflations can sufficient political support be mustered for the directionally preferred basic shifts in monetary rules.

The domain of strategy for constitutional reform must be opened up for intensive inquiry by constitutional economists. In a very real sense, the strategy of constitutional reform must be prepared well in advance so that when circumstances are right, those who recognize them to be such can indeed "seize the day."

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