Monetary Policy, the Rule of Law and a Liberal Economic Order: What Are the Links Between Monetary Stability and the Rule of Law?

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Abstract

This essay investigates the relationship between sound money and the institutions required for the maintenance of a liberal society. It presents two historical case studies: the late Roman empire and Weimar Germany to elucidate the mechanisms through which inflation damages a market economy and erodes the rule of law. Two other case-studies: the nineteenth century gold standard and independent central banks are used to defend the thesis that sound monetary institutions are necessary for a liberal social order, and to argue that a mutually reinforcing relationship exists between sound money and the rule of law. The implications posed by this proposition in the wake of the recent conduct of monetary policy are evaluated.

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This essay investigates the relationship between the functioning of money, the rule of law, and the maintenance of a liberal social order. The thesis I shall defend is that monetary stability, or sound money, is an integral component of a liberal social order. Monetary stability is a necessary condition for the rule of law to truly function. Sustained periods of inflation and deflation destroy the institutional foundations of a free society.

A casual knowledge of history suggests that there is *some* correlation between monetary instability and the rule of law. Episodes of former have often been associated with a breakdown of the latter; examples include Revolutionary France, the Confederacy, Germany and the lands of the former Austrian-Hungarian empire after World War 1, and contemporary Zimbabwe.[1] However, it is not immediately obvious why this should be the case or in which direction causality lies. Standard macroeconomics teaches us that inflation reduces welfare in several ways but does not give us any reason to expect inflation to led to a breakdown in the rule of law. Drawing upon insights from monetary equilibrium theory, Austrian economics, and economic history, this essay examines the relationship between monetary instability and the institutions necessarily for a liberal social order. In particular it asks: Why does inflation undermine the rule of law?

In the standard macroeconomic framework inflation increases the cost of holding cash, raises the costs associated with updating prices and wages, introduces distortions into the tax system, and redistributes resources from savers to borrowers. The first of these costs is called a shoe leather cost in reference to the inconvenience of going to the bank more frequently, while the second type of costs are known as menu costs. Excepting hyperinflations, these two costs are relatively trivial, and can be discounted. The other two costs are more significant: tax laws do not take into account the effects of inflation so capital gains taxes appropriate nominal as well as real profits and periods of unexpected inflation increases taxes on savers. Nevertheless, the costs of inflation appear relatively inconsequential; certainly it should be possible to ameliorate most of the problems associated with inflation through tax reforms and inflation-indexed debt contracts.[2]

I will focuses on the less obvious, and therefore more insidious, costs of inflation. Standard economic treatments of the costs of inflation neglect three particular aspects of inflation that will occupy us here, as they are most closely connected to the relationship between sound money and the rule of law. These are (i) the effect that inflation has on the structure of relative prices and hence on the informational properties of the price system; (ii) the effect that inflation has on the distribution of income; and (iii) the effect that inflation has on the economic and political institutions of a market economy.

[1]See Richard C.K. Burdekin and Farrokh K. Langdana, War Finance in the Southern Confederacy, 1861-1865, *Explorations in Economic History* 30, Nr. 3 1993 for an account of the Confederate inflation. Other examples of hyper-inflation occurred in Hungary after 1945 and in some Post-Soviet block economies after 1991.

[2]Ball and Romer observe '[a]lthough inflation is widely viewed as a major economic problem, economists have yet to give a clear account of why it is costly' Laurence Ball and David Romer, Inflation and the Informativeness of Prices, *Journal of Money, Credit, and Banking* 35, Nr. 2 2003 177. They go on to formally model one way in which the distortions caused by the effect of inflation on relative prices might impose additional costs on consumers.

This essay first sets out the theoretical relationship between unsound money (inflation) and the political and economic institutions of a liberal society. The second section proceeds by reviewing two historical episodes in which a decline in monetary stability preceded, and was associated with, a marked decline in the rule of law. It uses these episodes to examine precise mechanisms through which a collapse in the value of the currency undermined the rule of law and led to the demise of comparatively liberal social orders. The third part of the essay outlines how a stable currency based on the international gold standard emerged in the nineteenth century and the part that it played in that epoch of classical liberalism, free trade and globalization prior to the First World War. After evaluating the relationship between sound money and the rule of law in the twentieth century, I conclude by examining contemporary monetary institutions.

1 Inflation and the Rule of Law

Inflation is defined as a general increase in prices. Monetary stability or equilibrium refers to a situation where the demand for money holding is stable and the monetary system is not a source of systemic economic disturbance. Under this definition, moderate increases in the price level may be consistent with monetary equilibrium so long as that inflation is anticipated and stable. Individuals can hedge against inflation if they have some confidence about the future path of prices. High and unstable levels of inflation, on the other hand, do disturb the real economy.[3] There are three particular processes or mechanisms whereby monetary instability undermines the rule of law.

Mechanism 1 *Sustained inflation corrodes the ability of the price system to allocate resources.*

In a market economy, it is the prospect of profit that induces producers to compete to satisfy the demands of the consumer. Producers respond to prices. Prices convey information about the state of demand and the relative scarcity or abundance of inputs into production. Prices communicate, and allow individuals to act upon, knowledge that would otherwise be unavailable. Changes in prices force producers and consumers to react to changes in the relative scarcity of goods that they might otherwise be unaware of. Consumers do not need to know that new sources of oil have been discovered, cheaper prices inform them that they can consume more of it, and they will transfer their consumption away from relatively scarcer fuels.[4]

Inflation—a general increase in all prices—injects noise into this process because prices adjust at different rates. Some prices are able to response to inflation quicker and more flexibly than others. As a result, after a period of inflation the price system become less accurate and less informative. Producers are unable to tell which prices are

[3]The framework of monetary stability and instability employed here is based on Leland Yeager, *The Costs, Sources, and Control of Inflation*, in: George Selgin, editor, The Fluttering Veil: Essays on Monetary Disequilibrium Indianapolis: Liberty Fund, 1997.

[4]This insight goes back at least to F.A. Hayek, The use of knowledge in society, *The American Economic Review* 35 1945.

rising because of an increase in inflation, and which are rising because of a change in economic fundamentals. Consequently, the relative structure of prices, which conveys the relative scarcity or abundance of resources, the invisible, extended, communication system upon which the division of labour rests, is distorted, and the ability of the market to satisfy individual wants is impaired. Current prices contain less information about future prices. The increased epistemic burden inflation imposes on economic actors reduces the ability of the market to coordinate individual plans. Thus the effect of inflation is not merely redistributive; it is not a zero-sum but a negative-sum process.

Corollary 1 *While inflation can stimulate economic activity in the short-run and bring about a temporary reduction in unemployment, in the long-run it cannot do so and will, if continued, even lead to more resources being unemployed in the future.*

A monetary expansion stimulates economic activity in the short-run through the process David Hume outlined in his essay *Of Interest*.[5] Over time, however, it becomes apparent that the stimulative properties of inflation are deceptive: no productive capacity has been added to the economy as a result of the increase in the amount of money. Moreover, the inflation process actually damages the productive capacity of an economy. It sends false signs to market participants and induces the misallocation of resources. As Hayek put it, inflation causes future unemployment because the process of inflation brings about 'temporary changes in the distribution of demand' which draw 'both unemployed and already employed workers into jobs which will disappear with the end of inflation'.[6] By destabilizing the economy and sowing the seeds for future unemployment, inflation paves the way for the growth of government regulation and intervention.

Mechanism 2 *Inflation disproportionately benefits those who have either already incurred large debts, or are in a position to do so, or else have easy access to foreign currency, at the expense of savers and those who earn incomes that are either fixed or are adjusted only slowly. A period of sustained high inflation expropriates savers and entails a radical redistribution of resources.*

Since inflation does not cause all prices to rise at once, inflation has distributional consequences: some incomes rise faster than others. Those whose incomes increase faster than the prices they face benefit from inflation; others lose out, their incomes lagging behind rising prices.

Corollary 2 *The number of individuals who gain from a period of sustain inflation is usually small compared to the number who lose out. Hence a period of inflation is often associated with a widening in the distribution of income.*

The distribution of income resulting from a period of inflation is essentially different from the distribution of income that would result from a process of market exchange

[5] David Hume, *Of Interest*, in: Essays, Moral, Political, and Literary 1754.

[6] F.A. Hayek, *Choice in currency: a way to stop inflation* Institute of Economic Affairs: Institute of Economic Affairs, 1976.

under stable monetary conditions. Under a purely market based system, a general increase in inequality must be the product of some change in the real productive capabilities of some of the individuals within the economy. Because the inequality that results from a period of inflation is decoupled from market outcomes, it reduces the perceived legitimacy of a market-based order relative to non-market based systems of allocation.

Mechanism 3 *Sustained periods of inflation reduce the relative payoff to participating in market exchange and increase the incentive to engage in non-market activities.*

Inflation undermines the institutions that enable markets to effectively allocate resources. Consequently, individuals find it less worthwhile to engage in voluntary trade. Through this process, inflation inexorably shifts resources from the market sector to non-market sectors. Unable to interact and cooperate easily on the basis of exchange and contract, [individuals] are more likely to turn to coercion and hegemony and the means to achieve their desired ends.[7] This process may be a subtle one, as consumers devote more time to trying to protect their savings, or producers spend less time working out how to cut costs and more time calibrating their tax returns to avoid the increase in taxation on nominal profits imposed by inflation. Or it may be egregious, as was the case in Weimar Germany, and during other periods of very high inflation.

Corollary 3 *Periods of high inflation damage market-supporting institutions and tend to reduce the political influence of the middle classes and savers. Under periods of high inflation interest groups form, made up of those individuals who have benefited from the inflation, and have an interest in perpetuating it.*

Inflation undermines the rule of law directly because it appears to make necessarily all kinds of violations of the rule of law such as wage and price controls. Inflation also undermines the rule of law indirectly because it calls into question the general principles that support a liberal market order. A liberal social order is one based the principle of equal treatment before the law. Individuals are subject to rules of behavior. But these rules of behavior are general, widely accepted, and well known so that private individuals can plan their lives around them. Moreover these rules of behavior cannot be arbitrarily changed by the legislature. They have to anchored in an explicit or tacit constitution. In this way the rule of law provides a check of the power of government and guarantees each individual their own private sphere of non-interference.[8]

This argument demonstrates why the institutional costs of inflation are difficult to measure and hence why they are not captured in standard macroeconomic treatments of the problem. To examine the relationship between monetary stability and the rule of labour we need to pursue institutional analysis. With reference to two historical examples, the late Roman empire and Weimar Germany, Section 2 argues that periods

[7] Steve Horwitz, *Microfoundations and Macroeconomics: An Austrian Perspective* London: Routledge, 2000.

[8] This statement is most clearly stated in F.A. Hayek, *The Constitution of Liberty* London: Routledge, 1960.

of high inflation frequently precede, and pave the road, for transitions to more authoritarian political regimes. The historical evidence supports the thesis that a liberal social order, based on the rule of law, requires monetary stability. In the final part of the essay I evaluate some ways in which western societies have partially succeeded in achieving monetary stability: the gold standard in the nineteenth century and the combination of democratic supervision and independent central banks in the late twentieth and early twenty-first centuries. I conclude by considering the implications that the thesis of this essay has for interpreting recent developments in monetary policy.

2 Inflation in History: The Roman Empire and Weimar Germany

From Principate to Dominate

The first historical example we can draw upon is the Roman empire. Recent work by economic historians and archaeologists indicates that a flourishing market economy developed during the first two centuries of the Roman empire.[9] The vibrancy of the Mediterranean economy is attested to both by the number of shipwrecks dating to this period, and by the existence of a large number of different bronze coins which demonstrate that coinage was used for day-to-day transactions.[10]

The Roman empire itself, while not a liberal order, was a relatively open society in which the rule of law did exist, for citizens at least; private property rights were enforced, and the principle of a sphere of private action was recognized. As Hayek, in *The Constitution of Liberty*, stressed early Roman law (during the late Republic and early Empire) recognized and was built upon the concept of freedom under the law.[11] During the Principate, the autocratic power of the emperor was usually disguised and, at least under the 'good' emperors, limited; the imperial bureaucracy remained small in size and limited in scope, and much of day-to-day administration remained in local hands. The early empire retained a remarkable about of 'polycentricity' and, as a consequence, the economy was left comparatively free.

Monetary stability played an important part in underpinning the economic expansion of Europe and the Mediterranean during the Roman period. The Roman system of coinage, based on the bronze sestertii (and other small denominations), the silver denarius, and the gold aureus, spread across the western Empire, while in the eastern empire many states retained the right to issue their own currency.[12] There

[9]Peter Temin, A market economy in the early Roman Empire, *Journal of Roman Studies* 91 2001; Peter Temin, The economy of the early Roman Empire, *The Journal of Economic Perspectives* 20, Nr. 1 2006. This view overturns earlier 'primitivist' views associated with Karl Polanyi and Moses Findlay.

[10]K. Hopkins, Taxes and trade in the Roman Empire (200 BC-AD 400), *Journal of Roman Studies* 70 1980.

[11]Hayek, *The Constitution of Liberty*. Later Roman law as codified by Justinian was much more authoritarian and it was this body of legal thinking that shaped the development of continental European law from the middle ages onwards.

[12]For the western empire see R. Reece, Roman coinage in the Western Empire, *Britannia* 4 1973.

were occasional debasements but prices in general rose very slowly.[13] Average wine prices in the Roman east increased from around 3 or 4 drachmas in the first century A.D. to around 10 to 15 drachmas by the third century, implying an average rate of inflation of less than 1 percent. Wages and the cost of wheat also seem to have increased at around 0.8% per year on average.[14]

This monetary stability was dependent on the fiscal position of the Roman state. Seigniorage—coin clipping—was one of the few ways in which the empire could obtain additional revenue at short notice. In the third century the fiscal position of the empire deteriorated. Consequently the frequency of debasements accelerated. Lacking the capacity to raise taxes, emperors resorted to the expedient of devaluing the coinage whenever 'revenues were falling and expenses rising'.[15] A vicious cycle was created whereby military and fiscal crises create pressures for debasements, which further undermined the economy and eroded the tax base, and therefore made future crises more likely. In the first two centuries of empire, the weight of the gold aureus fell about 19% from 8 to 6.5 grams, but, from Septimius Severus (193–211) to Trebonianus Gallus (251–3), it fell by a further fifty percent.[16] People began to distrust the coinage, hoarding the good coins and spending the bad. This produced an inflation which accelerated after 250, and peaked between 260 and 275, as the fracturing of the empire led to a situation where multiple mints were producing increasingly debased coins. Prices more than doubled between 258 and 275.[17] This inflation, coinciding as it did with invasions by Germanic tribes and Persians into the empire and with civil war, resulted in a collapse in trade.

Attempts were made by several emperors to restore the coinage. Aurelian (270–274) reunified the empire and centralized the mints. The emperor Diocletian (284–306) attempted to limit inflation by fiat. Finally, Constantine (306–337) introduced a new gold coin, the solidus, which became a stable currency for the rich and powerful until medieval times. But, by this time much of the damage was done. The silver denarii continued to devalue until it became worthless, and the disappearance of silver and bronze money, used for the daily transactions of ordinary citizenry and the poor, testifies to the demise of a fully monetarized economy. The Roman experience is consistent with the theory outlined in Section 1. As Mechanism 1 predicts, the Roman inflation damaged the ability of the market to allocate resources. The archaeological record suggests that trade contracted and the division of labour became more local. Inflation, war, and the disruption of trade led to a gradual demonetarization of the

[13]Nero reduced the gold content of the aurei by a small amount but devalued the sestertius by over 20%. Commodus substantially reduced the silver content of the denarius and reduced the weight of the sestertius by a further 30%. Other emperors notably Domitian and Septimius Severus attempted to restored harder money. Richard Duncan-Jones, *Money and government in the Roman Empire* Cambridge: Cambridge University Press Press, 1998 100–101.

[14]Wine and other price series are from Duncan-Jones 26-28.

[15]Mireille Corbier, *Coinage and Taxation: The State's Point of View*, in: Alan K. Bowman, Peter Garnsey and Averil Cameron, editors, The Cambridge Ancient History, volume 12: The Crisis of Empire AD 193 – 337 2005 412.

[16]Corbier, *Coinage and Taxation: The State's Point of View* 356.

[17]A more than doubling in 17 years is a moderate inflation by modern standards. It implies 4% annual inflation. But it is a very high rate of inflation for an economy with metallic rather than paper money. As a point of comparison the sixteenth century 'price revolution' saw annual increases in prices of less than 1%.

economy. To hedge against the uncertainties of inflation both landlords and the state demanded payments in-kind. ‘As self-sufficiency became the order of the day the urban markets were perhaps replaced by rural markets, some of them centered on villages, others on large estates.’[18]

Mechanism 2 emphasizes the pernicious redistributive effects of inflation. Urban workers: craftsmen, scribes, clerks, teachers, shopkeepers were particularly hurt while the ‘rich protected themselves from the debasement of the coinage by hoarding: many savings hoards are known from the third century, containing coins (notably coins mounted as jewelry), jewelry and silverware’.[19] Wealthy landowners were even ‘able to take advantage of inflation, which raised the prices of their produce and the revenues of their lands’. The social and economic gap between the rich elite and the rest of society widened. ‘The polarization of wealth that concentrated most of it in the hands of the owners of these large estates ensured that economic and political power accrued to the landowners. The poor got poorer and the rich got richer, and the small shopkeepers and traders, who never had much of a coordinated or coherent voice in the historical record, disappeared’.[20]

The wider institutional impact of the third century inflation is consistent with Mechanism 3. The political response to the inflation was price controls. Diocletian's edit set the maximum permissive price. Violating the price edit was punished by death. A biographer of the emperor observes that ‘Diocletian's policy is a huge step away from [Roman] tradition. It aims at generalized permanent control, and in forbidding merchants to withdraw their goods from sale at the stipulated price it has a distinctly totalitarian ring, proclaiming in effect the States primary claim on the use and direction of the material resources of society, private ownership notwithstanding’.[21]

The early empire had a flourishing system of private law. Judges were seen as ‘merely the mouth through which the law speaks’.[22] This changed in the later empire, as the emperor came to be seen as the embodiment of the law, a development that had been taking place since the second century, but became irreversible after the third century inflation, and the corresponding transformation of the empire.

The Roman state after the mid-third century was more centralized and more autocratic. Taxation was assessed in-kind and the overall tax burden went up. Higher revenues not only supported the larger standing army required to meet defense needs but also fed a growing bureaucracy which expanded in size from several hundred officials plus 10,000 slaves to perhaps 35,000 officials.[23] During the early empire, authority was highly localized. Prominent residents of each city volunteered to serve as magistrates. Under Diocletian and Constantine civic offices became compulsory and hereditary. Other civic institutions either disappeared or were incorporated into the state: the ‘voluntary associations of businessmen and artisans (*collega*, *corpora*) were transformed one by one into obligatory organizations like the city councils, geared to

[18]Pat Southern, *The Roman Empire from Severus to Constantine* London: Routledge, 2001.

[19]Mireille Corbier, *The Evolution of the Economy*, in: Alan K. Bowman, Peter Garnsey and Averil Cameron, editors, The Cambridge Ancient History, volume 12: The Crisis of Empire AD 193 – 337 2005 449.

[20]Southern 267.

[21]Stephen Williams, *Diocletian and the Roman recovery* London: Routledge, 1997 131.

[22]Hayek, *The Constitution of Liberty* 166–167.

[23]Christopher Kelly, *Ruling the later Roman empire* Cambridge, M.A.: Belknap Press, 2004 111.

the larger State machinery'.[24] Other occupations became hereditary. Farmers were bound to the land and became serfs. Inflation, in combination with external and internal warfare, played a crucial part in this transition from Principate to Dominate. The precise processes through which inflation undermines a liberal society can be traced still more clearly in the next historical example that I consider: Weimar Germany.

Inflation and Hyper-inflation in Weimar Germany

Hyperinflation in Weimar Germany provides a second example.[25] The monetary instability of the late Roman period was the product of both opportunism by individual rulers and systemic instability. Similarly, the Weimar hyperinflation was the consequence of political decisions made by the Social Democratic lead government and the Reichsbank after World War 1.

The principle cause of the inflation was war and the failure to control the fiscal deficit. Sustained inflation began in 1914; inflationary financing, used to support government spending in war, was continued into peacetime. Reichsbank president Rudolf von Havenstein accommodated the fiscal expansion by printing marks in order to buy up government debt. The government was unable to control spending. Generous subsidies were granted to industry, to unions, to housing sector and to the railways; 7 billion marks were spent in 1920 on keeping the price of food low. By 1920 overall prices had increased by 900%; the number of marks circulating had increased from 2.9 billion in July 1914 to 55.8 billion in July 1920. The value of the mark relative to the dollar had collapsed from 24 cents to 1.5 cents.[26] The Social Democrats, vulnerable from both left and right, felt that it was politically too dangerous to cut back spending and the Reichsbank blamed the increase on prices on the balance of payments deficit and the reparations clause in the Treaty of Versailles rather than on monetary policy.[27]

In 1922 the government abandoned all attempts to reduce the deficit pursuing a deliberate policy of inflation in order to renegotiate reparations. The index of wholesale prices increased from 36.7 (where 1913 prices = 1) in January 1922 to 100.6 in July before exploding to 1475 in December, by which time the volume of marks in circulation reached 1.28 trillion. By the middle of 1923, after the French invasion of the Ruhr, the wholesale price index was at 19,385. At the end of the year it was at 1.26 billion. It cost 250 billion marks to buy a kilogram of butter and the price of beer at bars changed several times each evening.[28]

Mechanism 1: the price system. This period of sustained inflation and then hyperinflation distorted and damaged the price system. Inflation forced down the costs of borrowing, and this, combined with government largess, fueled an investment boom,

[24] Williams 134.

[25] Hyperinflation refers to rates of inflation in excess of 50% per month.

[26] Costantino Bresciani-Turroni, *The Economics of Inflation-A Study of Currency Depreciation in Post War Germany* London: George Allen Unwin, 1937. Also see Frank D. Graham, *Exchange, Prices, and Production in Hyper-Inflation: Germany, 1920-1923* New York: Russell & Russell, 1930

[27] Reparation payments made it difficult for the government to balance its books and thus contributed to the pressure to monetarize the debt but reparations represented no more than 15% of total public spending in any one year. Nial Ferguson, *Paper and Money, Hamburg business and German politics in the era of inflation, 1897-1927*, edited by 1995 Cambridge: Cambridge University Press 278

[28] Liquat Ahamed, *Lords of Finance* London: Windmill Books, 2010 121.

concentrated in the capital-intensive industries of shipping and railways. The number of telephones in Germany increased by 60% between 1919–1924.[29] The short-lived boom drew workers into jobs that would otherwise not have existed. Unemployment amongst unionized workers fell from over 6% at the beginning of 1919 to just 0.6% in the middle of 1922.[30]

This boom was unsustainable. Inflation and proliferate government spending distorted the structure of production, disguising the fact that productivity had actually fallen and was still well below 1913 levels—two thirds of what it has been in mining for example.[31] When the inflation exploded into hyperinflation it became apparent that living standards had fallen and that the German people were poorer than they had been in 1914.

Mechanism 2: Arbitrary inequality. The Weimar inflation illuminates several different ways in which a period of sustained inflation enriches a small minority at the expense of the majority. The middle classes were hit hardest. The real value of their salaries fell and their savings disappeared. The savings banks and cooperative societies lost their capital as they were only able to invest a small amount of their deposits in foreign exchange. For example, the Schultz-Delitsch co-operative societies lost its entire capital of 428 million marks and its deposits estimated at 1.6 billion marks mostly disappeared. In total, Bresciani Turroni estimated that the deposits of savings banks and cooperative societies valued at 44 billion marks in 1913 were more or less wiped out.[32]

The political economy that supported the policy of inflation has been viewed as an alliance between labour and capital. Ferguson notes that a 'Hamburg fishmonger explained the problem succinctly: "We of the middle class are not organized against the wholesalers, while the workers are organized against us"'.[33] And, in its early stages, the policy of inflation was perceived as benefiting workers. Real wages for workers managed to keep up with rising prices, at least until 1923. Wage schedules were compressed as firms, threatened by industrial unrest, increased the wages of skilled workers more slowly than they did the wages of unskilled works. The premium of 45% that skilled workers earned relative to unskilled in 1913 had collapsed to just 5% by 1923.[34]

Labour did not benefit in the long run from inflation however. Their gains were illusionary. The boom stimulated by the inflation was unsustainable and rapidly collapsed once the inflation became a hyperinflation. Industrial production fell by 34% in 1923. The unemployment rate of trade union members increased from 2% to 25% between mid–1922 and the end of 1925.[35]

Financiers and speculators made fortunes out of the inflation. Industrialists who were involved in foreign trade could acquire dollars and thus hedge themselves against the depreciating mark. While the middle class 'rentier' population, who owed large

[29] Ferguson 330.

[30] Bresciani-Turroni 189. Another source of funds for investment was provided by forced savings, the result of prices rising before wages.

[31] Ferguson 336.

[32] Bresciani-Turroni 320.

[33] Ferguson 342–343.

[34] Bresciani-Turroni 313.

[35] Ferguson 384.

quantities of government bonds, were expropriated, and many old merchant houses lost their capital, a small number of profiteers like Hugo Stinnes—the inflationskönig—and Jacob Michael acquired huge industrial empires.[36] They obtained these empires by borrowing cheaply and by leveraging whatever they borrowed to acquire underpriced assets. These industrialists influenced policy and became a vested interest group in favor of further inflation. As Bresciani Turroni noted, 'the paper inflation would not have assumed such vast proportions if it had not been favored in many ways by the people who drew a large profit from it'.[37] The Weimar inflation encouraged a spirit of speculation and gambling and discouraged saving and thrift. The process of inflation undermined the cultural foundation of a market economy. John Maynard Keynes understood this, noting that [t]o convert the business man into the profiteer is to strike a blow at capitalism, because it destroys the psychological equilibrium which permits the perpetuance of unequal rewards.[38]

As corollary 2 proposes the German inflation resulted in a new type of inequality. Bresciani Turroni notes that 'those who were in a position to benefit from the inflation were far fewer than the victims of the depreciation. Holders of debentures, etc., issued by one private entrepreneur could be counted by hundreds and thousands'.[39] But whereas the previous generation of entrepreneurs were 'producers' whose 'wealth had its roots in the general prosperity of the country, to which they had contributed by continually improving the productive equipment, and by perfecting the banking, industrial, and commercial organizations,' those who enriched themselves between 1918 and 1923 were speculators who exploited opportunities created by the process of inflation.

Mechanism 3: Rent-seeking and social unrest. Many of the costs of the inflation were hidden. Thus the inflation generated a demand for small banks and foreign-exchange dealers. Bresciani Turroni reports that 401 new banks were formed in 1923 alone, ten times as many as were formed in 1914.[40] The number of middlemen increased because the variability of prices created more opportunities to profit from simple bartering. As a result of the continuously rising prices more and more time was spent correcting for the rate of inflation. For the most part these jobs were simply a form of rent-seeking—unproductive labor—an additional cost imposed by the depreciating mark.

The inflation undermined the rule of law directly simply because the law courts were overwhelmed with civil cases resulting from the inflation as creditors contested debts repaid in devalued marks. Furthermore, the unrest associated with the inflation brought with it a crime wave. The total number of crimes increased from 117 (where 1882 = 100) in 1913 to 170 in 1923. Once the inflation was brought under control this subsided to 122 in 1925. Crimes commented by young men increased from 125 in 1913

[36]Stinnes was involved in 'coal, lignite, petrol, iron-mining, blast-furnaces, steelworks, engineering works, electrical works, shipyards, forests, cellulose and paper manufactures, banks and insurance companies, transport, ocean and inland shipping, merchant firms, newspapers, and inns. The name which an Austrian inflation profiteer gave his business meant "Everything"'. Bresciani-Turroni 297.

[37]Bresciani-Turroni 104.

[38]John Mayard Keynes, *Essays in Persuasion* London: W.W. Norton & Company, 1963 95.

[39]Bresciani-Turroni 319-320.

[40]Bresciani-Turroni 216.

to 212 in 1923 before falling to 87 in 1925.[41] At the same time the efficiency of the courts declined as the real salaries of lawyers and judges fell.

Inflation also undermined the rule of law indirectly. The inflation destroyed the wealth of the middle classes—particularly the urban middle classes, who were the main supports of the liberal parties in the Imperial Germany and the democratic and national liberals (DDP) and (DVP) in the Weimar Republic. Large numbers of this middle class had now been proletariatized and were attracted to extremist political parties. On the left the moderate Social Democratic Party (SDP) was discredited and the Communist Party (KPD) became more popular. Political power shifted from those who favored liberal principles and upheld the idea of equal treatment under the law—intellectuals like Max Weber and Thomas Mann and politicians like Walher Rathenau and Gustav Stresemann—to those who favored coercion and rejected the principles of liberalism like Hjalmar Schacht, Alfred Hugenberg, and thinkers such as Carl Schmitt.[42]

Inflation undermined another important support for the rule of law, civil society: it bankrupted religious and charitable societies and other voluntary institutions which had been influential in pre-war Germany. There were 60 such societies in Berlin worth 56 million marks in 1913 but by 1924 after revaluation they were worth just 1.5 million marks.[43] Consequently, those civil institutions which were responsible for mediating relations between the state and the individual in a liberal society were already severely weakened prior to the Hitler's rise to power.

Lionel Robbins described Hitler as the 'foster-child of the inflation' because of the long-term effects that the inflation had on German society—what he described as a moral as well as an economic disequilibrium.[44] Ferguson expresses this more expansively:

> 'Bourgeois society upheld industry; the inflation broke the link between pay and productivity, profit and diligence. Bourgeois society believed in thrift and parsimony; the inflation expropriated savers and benefited those who borrowed to the hilt and consumed. Bourgeois society was a hierarchy resting on the ownership of property; the inflation precipitated a radical reshuffle of wealth, rendering bonds and other paper assets worthless. Bourgeois society's civil law code was based on the binding nature of contract—on equity and good faith; the inflation subverted this principle by allowing debtors to pay creditors in depreciated marks. Bourgeois society upheld the rule of law; the inflation unleashed a crime wave and discredited the courts. Above all, bourgeois society craved Ruhe und Ordnung; the inflation was a time of disorder and violence'.[45]

[41] Ferguson 342.

[42] See L.E. Hill, C.E. Butler and S.A. Lorenzen, Inflation and the Destruction of Democracy: The Case of the Weimar Republic, *Journal of Economic Issues* 11, Nr. 2 1977 299–313. This was, for example, the view of Brescinai Turroni who noted that the 'paper inflation, by reinforcing the economic position of those classes which formed the backbone of the Right parities, i.e. the great industrialists and the great financiers, encouraged the political reaction against democracy' Bresciani-Turroni 330.

[43] Bresciani-Turroni 320.

[44] Introduction to Bresciani-Turroni 5

[45] Ferguson 430–431.

When Hitler came to power he was determined to learn the lessons of the Weimar period. As he pursued expansionary fiscal policy he guarded against the threat of inflation through wage and price controls. Nominal wages were frozen at their 1933 level; wage rises had to be approved by the regional trustees of labor.[46] In 1934 a Reich commissioner for price control was appointed. By 1935 an elaborate system of price controls had been erected. This succeeded in repressing, but not in preventing inflation, and was part of a gradual process whereby the German economy was cartelized and socialized in the 1930s.[47]

3 The Gold Standard, Democratic Control and Independent Central Banks

These historical examples have shown how inflation can destroy a society. How, then, have some economies managed to keep inflation in check? Hayek observed that the study of the history of money shows that no government that had direct control of the quantity of money can be trusted for any length of time not to abuse it.[48] Inflation was an important source of revenue for pre-modern governments and when they faced fiscal crises there was always the temptation to resort to coin-clipping or to the printing press.[49] In the period after 1945, so long as democratic governments promised full employment to their electorates, inflation was likely. There is an inbuilt inflationary bias to discretionary monetary policy. If left to the discretion of politicians, inflation will get out of control and full employment not be achieved because the public would expect the government to expand the money supply and hence expect ever higher rates of inflation without the economy moving any closer to full employment. This is the problem of time-inconsistent plans or inflation bias.[50] The final part of this essay assesses how in the past two centuries governments have attempted to overcome this commitment problem and the extent to which these different institutional arrangements have succeeded in securing monetary security and preserving the rule of law.

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[46] Adam Tooze, *The Wages of Destruction* London: Allan Lane, 2006 102.

[47] This accelerated after 1936: 'Gauleiter Wagner, who had responsibility for price control in the Four Year Plan, issued a blanket ban on 26 November 1936 prohibiting any price increases. Formalizing a development begun in the early 1930s, this effectively eliminated the market mechanism as a means of regulating scarcity in the German economy. The logical next step ... was the introduction of rationing, managing scarcity by bureaucratic allocation rather than the market process'. Tooze 231.

[48] F.A. Hayek, *Law, Legislation and Liberty*, volume III London: Routledge, 1982 58.

[49] For more medieval and early modern examples see John H. Munro, The Coinages and Monetary Policies of Henry VIII (r. 1509-1547): Contrasts between Defensive and Aggressive Debasements, Working Papers tecipa-417 University of Toronto, Department of Economics, November 2010 and John H. Munro, Coinage and Monetary Policies in Burgundian Flanders during the late-medieval 'Bullion Famines',. 1384 - 1482, Working Papers tecipa-361 University of Toronto, Department of Economics, June 2009.

[50] Finn E Kydland and Edward C Prescott, Rules Rather Than Discretion: The Inconsistency of Optimal Plans, *Journal of Political Economy* 85, Nr. 3 June 1977.

The Stability of Gold

Historically monetary stability was only achieved once governments were bound to metallic standards like gold and silver which precluded them from devaluing the value of the currency. As is well known, the emergence of gold standard, as opposed to a gold and silver standard, in Britain was an accident. Britain adopted a *de facto* gold stand in 1717 because, in his position as master of Royal mint, Isaac Newton overvalued silver. But it proved to be a success. As the value of gold was relatively stable, contracts that were denominated in gold were more worth more than those denominated in other currencies. Gold convertibility carried forward this credibility to the relationship between the individual and the state. Apart from an interlude between 1797 and 1821, the pound remained convertible into specie until 1914. To break gold convertibility was a breech of contract because it effectively meant that the government was defaulting on a portion of its debt.

The connection between price stability (as guaranteed by the gold standard) and the rule of law was evident to contemporaries. This domestic gold standard ensured price stability in Britain. It became an international gold standard in the late nineteenth century partly because of the wealth and prestige of the British empire and partly through historical accident and luck.[51] The international gold standard ensured price stability for those countries that abided by it. Other countries could buy-in-to the credible commitment made by the British state not to inflate the currency. So long as convertibility was maintained, any government that violated the gold standards rules would lose gold reserves. For this reason it was viewed as a commitment to monetary and fiscal orthodoxy i.e. low money growth and small fiscal deficits. Peripheral economies could bind themselves to follow the monetary and fiscal policies of Britain, and the other core economies, and because this represented a commitment to repay every cent on the dollar, it enabled them to attract capital and investment at lower rates of interest than would otherwise have been the case. Bordo and Kydland argue that the international dimension of the gold standard, and the role played by Britain, the worlds financial and commercial hub at its center, was critical to ensuring that going on gold was a credible commitment.[52]

The gold standard played a critical role in enabling a liberal social order based on the rule of law to develop in western Europe and north America. It underpinned the late nineteenth century period of relatively free movement in commodities, labour, and capital. And, on average it brought price stability: inflation was a trendless white noise process.[53] Long-term monetary stability encouraged saving and long-term planning.[54] The gold standard successfully insulated monetary policy from political interference; because the system was viewed as almost automatic it meant that politicians were

[51] Marc Flandreau, The French Crime of 1873: An Essay on the Emergence of the International Gold Standard, 1870–1880, *The Journal of Economic History* 56, Nr. 04 December 1996.

[52] Bordo Michael D. and Kydland Finn E., The Gold Standard As a Rule: An Essay in Exploration, *Explorations in Economic History* 32, Nr. 4 October 1995 430.

[53] R.B. Barsky, The Fisher hypothesis and the forecastability and persistence of inflation, *Journal of Monetary Economics* 19, Nr. 1 1987.

[54] As Hayek observed it was partly because a generation of savers in western Europe had been more or less expropriated by monetary instability after 1914 that state pensions appeared to be such a necessity Hayek, *The Constitution of Liberty* 328–329 .

not required to understand the intricacies of monetary policy and this became the responsibility of independent central banks.

Finally, what has perhaps been missed in the extensive literature on the gold standard is the extent to which adherence to gold was linked to the broader concept of honoring one's contracts which is an important part of the rule of law. This was part of the *mystique* of gold. And it is evident in contemporary discussions of the return to gold in the 1920s. The commitment to gold was seen as a commitment by borrowers to repay lenders in full. For example W.H. Hutt wrote, describing the feeling he had felt in 1931 when Britain went off gold, '[n]o one doubts that fraudulent bankruptcies can be for the advantage of the defaulters; but no economist has yet shown why it became *ethical*, in certain circumstances of the time , for a powerful nation to break its word. I suggest that *the crucial issue was a very simple one, namely, morality*'.[55] During the nineteenth century the luster of the gold standard supported a broader set of beliefs in the sanctity of property rights and contracts. A mutually reinforcing relationship existed between sound money and the rule of law.

In many respects the success of the gold standard in the late nineteenth century was fortuitous. Certainly when it was reconstituted in a less pure form and in much less favorable circumstances after World War 1, it was associated with macroeconomic instability and rapidly abandoned. To function effectively it relied upon central banks playing by the rules of the game, prioritizing convertibility and staying within the gold points over full employment. One these institutional pre-conditions had gone, it became impossible for governments to stay on gold.[56] Nevertheless, accompanied by the appropriate institutions the gold standard was successful. As Bordo and Kydland observe: the 'gold standard was simple, transparent, and, for close to a century, successful. Even though it was characterized by some defects from the perspective of macroeconomic performance, a better commitment mechanism has not been adopted'. It was successful in providing support for monetary stability and for free trade, limited government and the rule of law.

The Promise of Democratic Control

The gold standard was successful compared to the attempts to secure monetary stability in the interwar era.[57] Keynes had argued that 'only a foolish person . . . would prefer

[55]W.H. Hutt, *The Keynesian Episode* Indianapolis: Liberty Fund, 1979.

[56]These considerations also preclude a return to gold. Hayek's comments remain highly pertinent: 'the functioning of the international gold standard rested on certain attitudes and beliefs which have probably ceased to exist. It operated largely on the basis of the general opinion that to be driven off the gold standard was a major calamity and a national disgrace. It is not likely to have much influenced even as a fair-weather standard when it is known that no country is prepared to take painful measures in order to preserve it. I may be mistaken in my belief that this *mystique* of gold has disappeared for good, but, until I see more evidence to the contrary, I do not believe that an attempt to restore the hold standard can be more than temporarily successful' Hayek, *The Constitution of Liberty* 335.

[57]This statement may also be true of the post-World War 2 era. The conventional wisdom held that the US economy experienced less macroeconomic volatility after 1945 in comparison to the period before 1913. However this result may be an artifact of different ways in which business cycle data was compiled in the two periods C.D. Romer, Is the Stabilization of the Postwar Economy a Figment of the Data?, *The American Economic Review* 76, Nr. 3 1986; George A. Selgin, William D. Lastrapes

a flexible wage policy to a flexible money policy.[58] After 1945, governments attempted to manage a flexible monetary policy within the Breton Woods system, relying on democratic supervision to ensure both price stability and full employment. The Bank of England was nationalized in 1945 and the Federal Reserve was placed under close political supervision with a dual mandate.[59] The failure of these arrangements became manifest once the creeping inflation of the 1960s gave way to the combination of high inflation and high unemployment of the 1970s. As Jacob Viner had predicted: [i]n a world organized in accordance with Keynes's specifications, there ... [was] a constant race between the printing press and the business agents of the trade unions.[60]

This race came to a head after 1973, when the collapse of the Breton Woods system, a slowdown in productivity growth, successive oil shocks, and aggressive wage demands from unionized workers produced a tremendous peacetime inflation. This inflation was in a sense inevitable. As Bradford Delong has argued [i]t is well within the bounds of possibility that the U.S. might have avoided a burst of inflation in the late 1960s and early 1970s. But then it would have been vulnerable to an analogous burst of inflation in the late 1970s, or in the early 1980s. And if inflation had been avoided through the early 1980s, analogous policy missteps might well have generated inflation in the late 1980s. The monetary constitution of the U.S. at the end of the 1960s made something like the 1970s, at some time, a very likely probability.[61]

Neither president Richard Nixon nor the Federal Reserve Chairman Arthur Burns believed that monetary policy could control nominal wage demands, and neither wanted a recession, so income and price controls were imposed.[62] These controls were a failure: as Delong notes they ‘did not calm inflationary expectations. Instead, they appear to have created them—with a general expectation that prices would rebound once the controls were lifted. The controls imposed the standard microeconomic, compliance, and administrative costs on the American economy. Perhaps most serious, the fact that wage and price controls were still in effect in the fall of 1973, when the

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and Lawrence H. White, *Has the Fed Been A Failure?* Cato Working Paper, November 9 2010

[58] John Mayard Keynes, *The General Theory of Employment, Money, and Interest* London: Macmillan, 1936 Chapter 19.

[59] During World War 2 the Fed cooperated closely with the Treasury. It gained some measure of independence as a result of the Accord of 1951. However, political influence on the Fed remained strong throughout the 1950s and 1960s. See Carl E. Walsh, Federal Reserve independence and the Accord of 1951, *FRBSF Economic Letter* May 28 1993.

[60] Jacob Viner, Review: Mr. Keynes on the Causes of Unemployment, *The Quarterly Journal of Economics.* 51, Nr. 1 1936. 149.

[61] J. Bradford Delong, *America's Peacetime Inflation: The 1970s*, in: Christina Romer and David Romer, editors, Reducing Inflation: motivation and strategy, volume 30, NBER Chicago: University of Chicago Press, 1997.

[62] According to Burns: ‘there are many causes of inflation. Some arise from within a country, as when demands for goods and services exceed the available supply, or when workers press for increases in wages that exceed improvements in productivity, or when businessmen seek to enlarge their profit margins through higher prices. International factors play a role, as when oil-exporting countries raise the price of oil. It is nonetheless the duty of our federal government under existing law to serve as the balancing wheel of the economy, and that involves an obligation to restrain or to offset upward pressures on the general price level that arise in the private economy' quoted in: Yeager 40. The different forms of controls, taxes, or regulatory policies that could be used to control inflation are discussed in Arthur M. Okun and George L. Perry, editors, *Curing Chronic Inflation*, Brooking Institution 1978.

price of oil jumped, created a substantial divergence between the cost of energy to U.S. users and the world price of energy, which slowed down the process of adjustment'.[63] This gap and the price controls that created them were still in place when the second oil shock occurred and widespread shortages resulted. As Mechanism 1 suggests controls freeze relative prices and prevent producers and consumers from adjusting to new information about demand and supply. As in the Weimar inflation—in the 1960s, the years when inflation was gradually building up, investment and consumption rose together—it was only in the 1970s that the extent of economic misallocation revealed itself in the form of higher unemployment in combination with higher inflation. As the decade went on, the expectation of ever rising prices became built into the economy. Higher inflation was accompanied by civil unrest and industrial actions across western economies and there is every indication that had the inflation continued this unrest would have worsened as Mechanism 2 and Mechanism 3 predict.[64] As it happened, there was a political consensus to reduce inflation, which was eventually brought down through a severe recession in the 1980s.

The Mirage of Central Banks Independence

Contemporary monetary institutions—independent central banks, implicit and explicit inflation targets etc.—are responses to the failure of democratic supervision to achieve monetary stability in the post-World War 2 period. Central bankers like Paul Volker at the Federal Reserve, Donald Brash at the Reserve Bank of New Zealand, as well as chancellors and finance minsters in other advanced economies, succeeded in halting the inflationary spiral because they were able to credibly signal their willingness to bring about recessions. In the policy literature, central bank independence was heralded as the institutional solution to the problem of inflation bias. Central banks were provided with 'instrument independence' and insulated from democratic influence.[65] By either delegating monetary policy to a 'conservative' central banker, or by regulating the behavior of the central banker, contractually, or through an explicit inflation target, the problems associated with discretionary policy could be eliminated. In other words, the benefits of a fixed rule like the gold standard could be obtained without the corresponding costs.[66] In this final part of the essay I review how successful

[63] Delong 265-266.

[64] Proponents of controls like Abba Lerner were not oblivious to the costs imposed on the market nor were they unaware of the enforcement problems. Nonetheless Lerner held that the most direct way of curbing inflation was 'stopping the spending, which the government could bring about, only works through catastrophic depression and severe unemployment'. Since that was too costly, and became 'price regulation is more easily evaded by quality changes. The best option seems to be to stabilize wages, which are already largely administered by collective bargaining and other large-scale wage decisions Abba P. Lerner, *A Wage-Increase Permit Plan to Stop Inflation*, in: Arthur M. Okun and George L. Perry, editors, Curing Chronic Inflation, Brooking Institution 1978 257.

[65] In countries like New Zealand and the UK the discretionary power of monetary authorities was further reduced by the introduction of explicit inflation targets. See B.S. Bernanke and F.S. Mishkin, Inflation targeting: A new framework for monetary policy?, *The Journal of Economic Perspectives* 11, Nr. 2 1997.

[66] For the concept of a conservative central banker see Kenneth Rogoff, The Optimal Degree of Commitment to an Intermediate Monetary Target, *The Quarterly Journal of Economics* 100, Nr. 4 November 1985. For the idea of a contract to bind the central banker see Carl E Walsh,

independent central banks have been in ensuring monetary stability.

The movement towards rule-based policy making reduced both the mean and variance of inflation, inaugurating a period of macroeconomic stability that Ben Bernanke termed the 'Great Moderation'. It produced a scholarly consensus that independent central banks had solved the time inconsistency problem and that monetary policy was no longer a destabilizing factor in policy making.[67] The corollary of this consensus was that monetary policy should not respond to asset price changes because a central bank could not know whether or not an asset price bubble was in fact a bubble until it burst. Central bank independence and implicit or explicit inflation targeting were sufficient. In the wake of the recession of 2007–2010, these conclusions seem less tenable and hence the relationship between monetary policy and the rule-of-law needs to be revisited.

In hindsight, Adam Posen's argument that the power of central bank independence to guarantee low inflation and monetary was largely illusionary, appears particularly perceptive. This is not to deny that inflation was low during these years, or even that there was a Great Moderation, but it *is* to downplay the role that improved monetary policy, in general, and the much vaulted independence of central banks, in particular, played in achieving this stability. Posen agreed that central bank independence and low inflation were correlated, but he denied that there was any necessary causal relationship. Rather: 'since central bank independence is always at risk from proponents of inflation, and that risk both determines the policies pursued *and* is determined by the political strength of opposition to inflation, *there is no reason to expect that central bank credibility or revealed policy preferences will have a fixed relationship with statutory independence*; instead they will vary with developments in the ongoing political struggle over inflation'.[68]

Failings of Contemporary Monetary Policy

There are two important charges to be laid against contemporary monetary arrangements. The first charge is easiest to uphold. Economic policy proved fragile in the face of a financial crisis. Textbook monetary policy worked, or appeared to work, so long as external conditions were favorable. Within a narrow corridor of macroeconomic stability, to use Axel Leijonhufvuds phrase, implicit or explicit inflation targeting delivered stable and low rates of inflation and low levels of output volatility.[69] It was not robust to large falls in house prices or to a collapse in the financial system.

Optimal contracts for independent central bankers: private information, performance measures and reappointment, *Proceedings* Mar 1993. Empirical evidence on the relationship between independence and inflation is provided by Alberto Alesina and Lawrence H. Summers, Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence, *Journal of Money, Credit, and Banking* 25, Nr. 2 1993. Inflation targets are seen to be superior to a fixed rule because they allow for 'constrained discretion' Ben Bernanke et al., *Inflation Targeting: Lessons from the International Experience* Princeton, New Jersey: Princeton University Press, 1999.

[67] Stephen G Cecchetti, Making Monetary Policy: Objectives and Rules, *Oxford Review of Economic Policy* 16, Nr. 4 Winter 2000.

[68] Adam Posen, *Why Central Bank Independence Does Not Cause Low Inflation: There is No Institutional Fix for Politics*, in: Finance and the International Economy 7: The Amex Bank Review Prize Essays Oxford: Oxford University Press, 1993 47.

[69] Axel Leijonhufvud, Effective Demand Failures, *The Swedish Journal of Economics* 75, Nr. 1 1973.

The relevance of Posen's argument can be seen in relation to the second charge against the conduct of monetary policy in the Great Moderation period. This charge states that not only were existing monetary institutions and policy ill equipped to respond to an exogenous shock but rather that they were themselves partly responsible shock in the first place.

The argument that low Federal Fund rates in the wake of the Dot.com crash played a crucial role the build-up to the Sub-Prime crisis has been advanced by number of economists including John Taylor, Raghu Rajan, Axel Leijonhufvud, Lawrence White, and William White.[70] Taylor argues that monetary policy after 2001 became excessively loose (relative to the norm set in the Great Moderation period). He views this as a government intervention and as a deviation from a rule-based monetary policy during the Great Moderation.[71] Expansionary monetary policy was justified on the grounds that unemployment remained high (peaking in June 2003) and consumer price inflation low. But these indications were misleading; as Rajan observes, output growth was relatively rapid (the recovery was 'jobless') and broader measures of economic activity such as assert prices suggested that the economy was approaching capacity. Low borrowing costs fueled house prices and low returns on savings and ordinary investments encouraged investors to take on more risk. Thus, as Leijonhufvud, along with many others argue, the pursuit of narrow inflation targets generated financial instability. Broader measures of inflation would have necessitated much faster monetary tightening during the 2001-2006 period.

The conduct of monetary policy after the crisis has similarly been questioned. The prevailing wisdom during the Great Moderation was that independent central banks were successful because they insulated monetary policies from democratic interference. Recent events indicate that the resulting epistemological opacity caused by this insulation leaves them open to accusations of corruption and cronyism. Central bank independence increasingly looks like a mirage. At the zero interest-rate bound monetary policy increasingly resembles fiscal policy. The close relationship between the Federal Reserve and the Treasury, the bailouts of Bear Sterns, AIG and others, the various asset purchase schemes and other interventions in the mortgage markets are novel policy interventions, the wider legal and economic implications of which are not yet fully understood.

One lesson that all the historical episodes reviewed in this essay teach is that there is a mutually reinforcing relationship between a society's monetary institutions and it's legal and social institutions. Monetary policy cannot be studied in an institutional or historical vacuum. And in the wake of recent events, the relationship between macroeconomic policy and wider concerns for the rule of law need to be reconsidered.

[70] John B. Taylor, *Getting Off Track: How Government Actions and Interventions Caused, Prolonged, and Worsened the Financial Crisis* Hoover Press, 2009; Raghu Rajan, *Fault Lines: How Hidden Fractures Still Threaten the World Economy* . Princeton, New Jersey: Princeton University Press, 2010; Axel Leijonhufvud, Macroeconomics and the Crisis: a personal appraisal, 41 CEPR Policy Insight, 2009; Lawrence H. White, How Did We Get into This Financial Mess?, Technical report 110 Cato Institute Briefing Paper, 2008; William White, Is Price Stability Enough?, Technical report 205 BIS working papers, 2006.

[71] The Federal Funds rate stayed before 2% until mid–2004 whereas the Taylor rule would have specified a gradual tightening in monetary policy from 2001 onwards and a Federal Funds rate of 4% in 2004.

A reading of history teaches us how much damage an out-of-joint monetary system can inflict and it also demonstrates that a wide range of different monetary institutional arrangements have been used in the past.[72]

Concluding Comments

This essay has examined the, at times subtle, mechanisms linking, seemingly technocratic, questions of monetary policy and inflation to wider issues concerning the institutions that are necessary to support a liberal, market-based society. It has advanced three claims: (1) the costs of high and unstable inflation are subtle and difficult to measure; that (2) one of the most pernicious consequences of inflation is that it undermines the rule of law and other institutions vital to the running of a liberal economy; and finally, that (3) monetary stability and the rule of law and mutually self-supporting.

In the late Roman Empire and Weimar Germany inflation corroded market institutions and values and led to the demise of comparatively liberal societies. These two examples can be taken as illustrating the thesis of this paper *in extremis*. Two further case studies: the nineteenth century gold standard and the survey of twentieth centuries experiments in democratic supervision and independent central banks also point to the connection between market-supporting institutions and monetary stability.

Several additional conclusions stand out. In the case studies surveyed, the true costs of inflation included the costs imposed by the political responses to inflation: the price edit imposed by the emperor Diocletian, the socialization of the Germany economy under the Nazis, and the botched income policies of the 1970s. Inflation, not only causes direct damage to a market economy, but, if not controlled, can prompt populist policy responses that can do even more, deeper lasting, damage to a liberal society.

Finally, the paper argues that no society has found the 'optimal' set of monetary institutions. The gold standard in the late nineteenth century and the independent central banks of the late twentieth and early twenty-first centuries succeeded in providing a measure of monetary stability. Both succeeded because they were able to limit the incentive policy makers had to inflate. However, both systems had their weaknesses. The Gold Standard could not survive World War 1 and the current system based on central bank independence and inflation targeting appears to be in need of reform.

[72]It is beyond the scope of this paper to discuss free banking but this is one much discussed alternative to central banking that might better guarantee monetary stability.

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