Under What Circumstances can Inflation be a solution to Excessive National Debt: Some Lessons from History

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Introduction

- The large debts built up since the financial crisis of 2007-2008 has led to the call by some to monetize the debt
- Monetizing the debt means purchasing newly issued government debt with central bank money
- It also means using inflation to reduce the real value of outstanding nominal debt

Introduction

- Monetizing the debt is fraught with the peril of creating inflation
- This occurred in the interwar period
- But in circumstances of war or deep depression monetizing government debt may be the best thing to do.

Some Theoretical Considerations

- **Tax Smoothing and Revenue Smoothing**
- In wartime borrowing from the government allows the government to smooth tax rates over time.
- In wartime, running a balanced budget would require large increases in tax rates, which would severely reduce the incentives for economic activity just when the need for such activity is the greatest.
- The theory of tax smoothing implies that an optimizing government will set taxes over time so as to minimize deadweight losses (Barro 1989)
- Once the wartime emergency is passed the government must raise taxes, cut expenditures and pay off the accumulated debt
- Such a strategy will convince the bond markets of the government’s credibility and allow it to tax smooth in the next wartime emergency

Tax Smoothing and Revenue Smoothing

- In wartime situations where the government has great difficulty borrowing or raising taxes governments can use the inflation tax to finance its expenditures
- The theory of revenue smoothing (Mankiw 1987) sees a government setting the inflation tax and general taxes so as to minimize the dead weight losses of both types of instruments.
- The inflation tax needs to be reversed once hostilities cease.

Unpleasant Arithmetic and Fiscal Dominance

- Sargent and Wallace (1991) posited that unsustainably high debt ratios could lead to “ Unpleasant Monetarist Arithmetic” which forces the central bank to use its seigniorage to service and monetize the debt.
- The fiscal theory of the price level (Leeper and Walker 2011) leads to a similar outcome.
- In normal times the central bank pursues active monetary policy independent of the fiscal authority.

Fiscal Dominance

- The fiscal authority is expected to fully offset fiscal deficits today with surpluses in the future.
- In times of fiscal stress like the present, there is a possibility (for political reasons) that taxes will not be raised or expenditures cut sufficiently in the future to prevent the national debt from ballooning.
- Fiscal policy becomes active and monetary policy passive– fiscal dominance.

Fiscal Dominance

- Economic agents will perceive the increase in nominal debt to be an increase in their real wealth, leading them to increase consumption expenditures and raising the price level.
- Higher prices will reduce the real value of national debt and restore fiscal equilibrium.
- Thus, unless a fiscal deal is worked out to restore and maintain fiscal balance future inflation is in the cards.

Historical Examples When using Money Financed Deficits is Desirable

I. Major wars

- Bordo and White (1990) show how Britain which had successfully followed a tax smoothing policy in several wars in the eighteenth century was able to finance the Napoleonic wars by debt issues and a minimal amount of seigniorage.
- By contrast France which had defaulted on its debt after the American Revolutionary war and had generated the Assignat hyperinflation did not have the credibility to follow the tax/revenue smoothing strategy pursued by the British

I. Major Wars: Napoleonic War

- During the War the government issued massive amounts of debt and the Bank of England freely discounted exchequer bills. It operated as an engine of inflation
- After the war the British government quickly shifted towards a fiscal surplus and the debt ratio was successfully reduced from its wartime peak of 260% back to single digit levels by the mid nineteenth century
- After the war the Bank followed a deflationary policy to restore the gold standard at the original parity

I. Major wars: Napoleonic war

- These actions represented the two pillars of classical orthodoxy– maintaining the gold standard and balanced budgets
- In comparison to Britain, France did not have the credibility to follow the British Strategy
- In 1803 Napoleon founded the Banque de France and the franc germinal based on bimetallism
- France did not have the credibility to either issue significant amounts of debt or to temporarily print money

I. Major Wars: Napoleonic War

- Consequently France financed the war by raising taxes and tribute from their conquered territories—a strategy which was not successful.

I. Major Wars: World War I

- World War I was financed by the belligerents by a mix of taxes, debt and seigniorage
- The United States, the last to enter, issued the least seigniorage, the Germans the most
- Tax smoothing and revenue smoothing worked best for the U.S. and G.B.
- Both were able to service and amortize their debts after the war by higher taxes, reduced expenditure .
- And to offset most of the wartime inflation by postwar deflationary policies

I. Major Wars: World War I and World War II

- Germany and France were examples of unsustainable debt and high inflation to be discussed below
- World War II for the Allies was financed with lower seigniorage and debt than WWI yet the larger scale of wartime expenditures left a large debt burden
- The debt overhang in the U.S. and GB was removed by a combination of rapid growth, inflation and financial repression.
- The post WWII experience departed from the classical tax smoothing model. Debt was reduced by inflation.

II. The Great Depression

- The Great Depression was the deepest recession ever experienced in the U.S. and Germany and elsewhere
- In the U.S. real GDP fell by more than 30% as did the price level
- Friedman and Schwartz (1963) attributed the U.S. Depression to failure by the Federal Reserve to offset a series of banking panics by expansionary open market operations.
- Bordo , Choudhri and Schwartz (1995) and McCallum (1990) showed that had the Fed followed money (base) growth rules that the Great Contraction could have been avoided altogether.

II. The Great Depression

- Friedman (1948) and (1968) also discussed the use of money financed fiscal policy. In his 1968 debate with Walter Heller he argued that fiscal policy financed by money was the only kind of fiscal policy that would have had much traction in stabilizing the real economy.
- This suggests that had the Fed engaged in monetizing the debt in the 1930s that the Great Depression could have been avoided as could another Great Depression in the future.

II. The Great Depression

- Friedman's analysis is very close to his (1969) analogy of a helicopter dropping new money.
- Bernanke in a speech in (2002) picked up on Friedman's idea and argued that the Fed in a situation like Japan in the 1990s with deflation and the ZLB always had the tools to stimulate the economy.
- The U.S. recovery after 1933 had little to do with expansionary fiscal or monetary policy.
- It reflected the devaluation of the dollar in 1933-34, Morgenthau's gold purchasing policies and capital flight from Europe.

Historical Examples where Monetizing the Debt Was Unsuccessful: Weimar Germany

- History suggests a number of examples where monetizing the debt led to disastrous consequences
- These cases may have resonance for the situation faced by the U.S., U.K. and the euro zone today.
- The worst case scenario of fiscal dominance creating inflation is that of Weimar Germany in the 1920s.

Weimar Germany

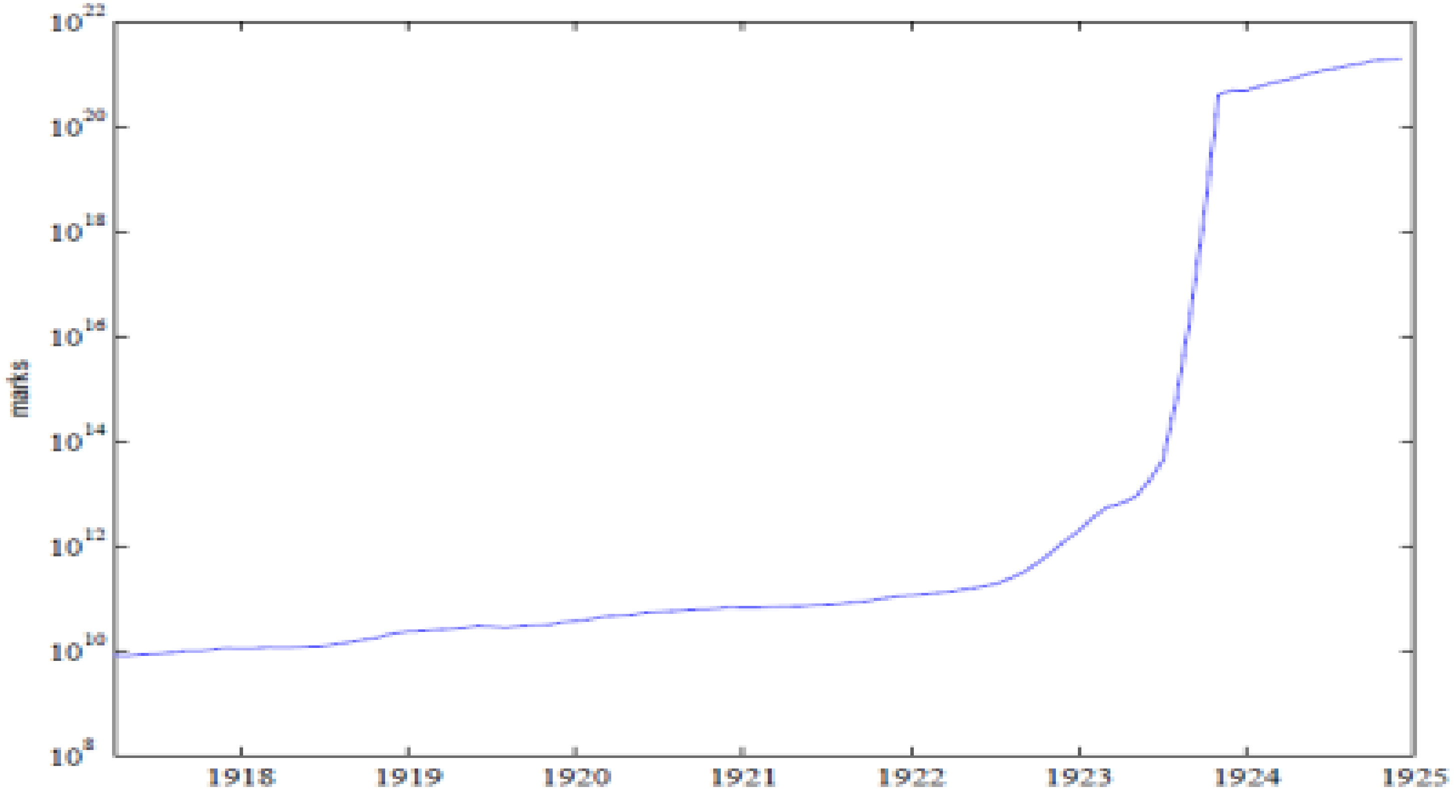
- The fiscal problem facing Germany in the early 1920s was how to fund the increase in the fiscal deficit produced by the reparations under the Versailles Treaty.
- The reparations were payable in gold marks while tax revenues were in paper marks.
- The inability (unwillingness) to raise taxes sufficiently to pay the reparations meant that the fiscal deficits would have to be monetized
- Or according to the fiscal theory of the price level that the price level would have to rise.

Weimar Germany

- Rising Prices and falling exchange rates (see figures 1 and 2) led to a burgeoning fiscal deficit and an explosion of nominal debt.
- The resulting hyperinflation reflected both a stalemate between France and Germany over the pace and timing of reparations
- And political chaos within Germany which impeded a solution to the fiscal impasse.

Figure 1: Reichsbank notes in circulation

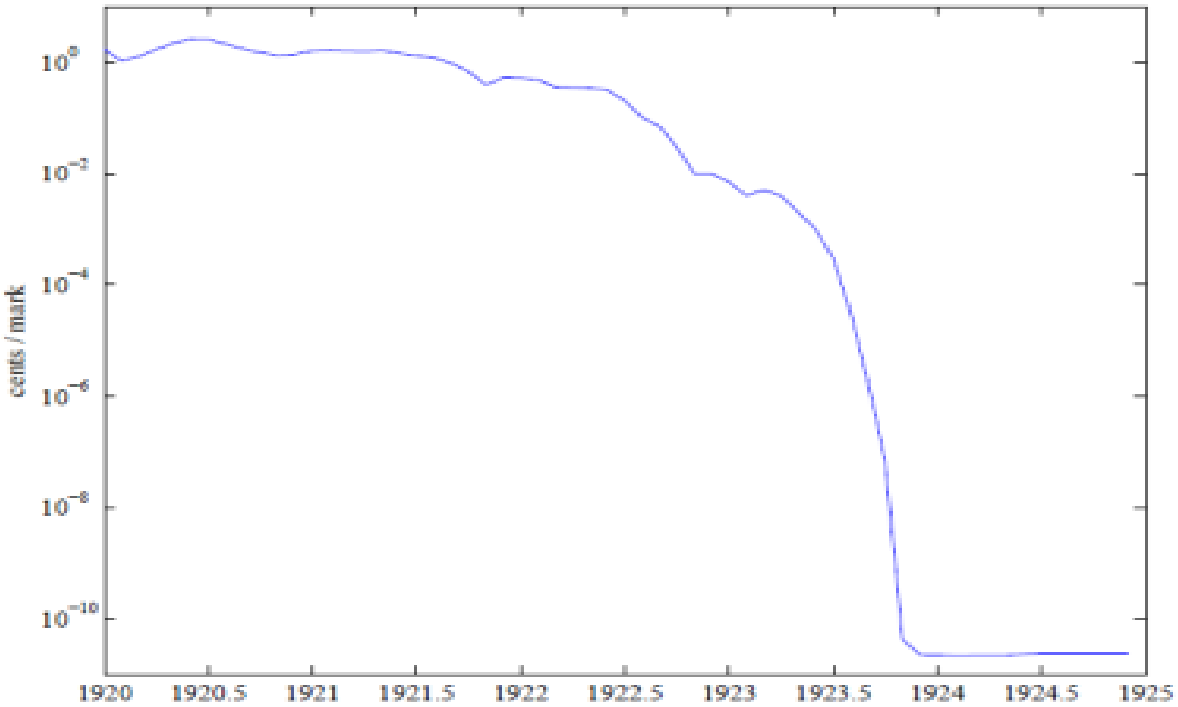
- (Source: Velde 2012)



Reichsbank notes in circulation.

Figure 2: Exchange Rate in New York or Berlin

- (Source: Velde 2012)



Exchange rates in New York on Berlin.

Weimar Germany

- A comparison between the experience of Germany in the 1920s and the U.S. (or other countries) today may be a bit too extreme.
- The political environment in Germany involved open civil war between the communists and the far right and then the occupation of the Ruhr by the French.
- This was infinitely worse than today's bickering between Obama and Romney

Weimar Germany

- Also the economic disruption in Germany was far worse than the recession of 2007-2008
- Moreover in the German case external debt was payable in a foreign currency– a major source of financial crises for emerging countries but not advanced ones.
- In the U.S. the debt is in domestic currency and the dollar is the dominant international currency.

France in the 1920s

- The experience of France in the 1920s is much more compelling than that of Germany as an historical example to illustrate the pitfalls of rising debt.
- The political situation in France was not dearly as dire as in Germany.
- French debt was denominated in local currency.
- The fiscal crisis that occurred did not lead to a hyperinflation.

France in the 1920s

- The French situation after WWI , in comparison to that of GB has all the elements of active versus passive monetary and fiscal policy (Bordo and Hautcoeur 2007).
- The British experience was characterized by active monetary and passive fiscal policy
- The French case was the opposite.

France in the 1920s

- Both countries emerged from WWI with more than a doubled price level (figure 3), a high ratio of debt to GDP (figure 4), large fiscal deficits (figure 5) and a depreciated exchange rate (figure 6)
- France was in worse shape than GB in all dimensions but not by much.
- Basically France had a worse fiscal and monetary stance than GB.
- France had a higher debt ratio, more short-term debt and a big monetary overhang.

Figure 3: Price Level (1910=100)

- (Source: Bordo and Hautcoeur, 2007)

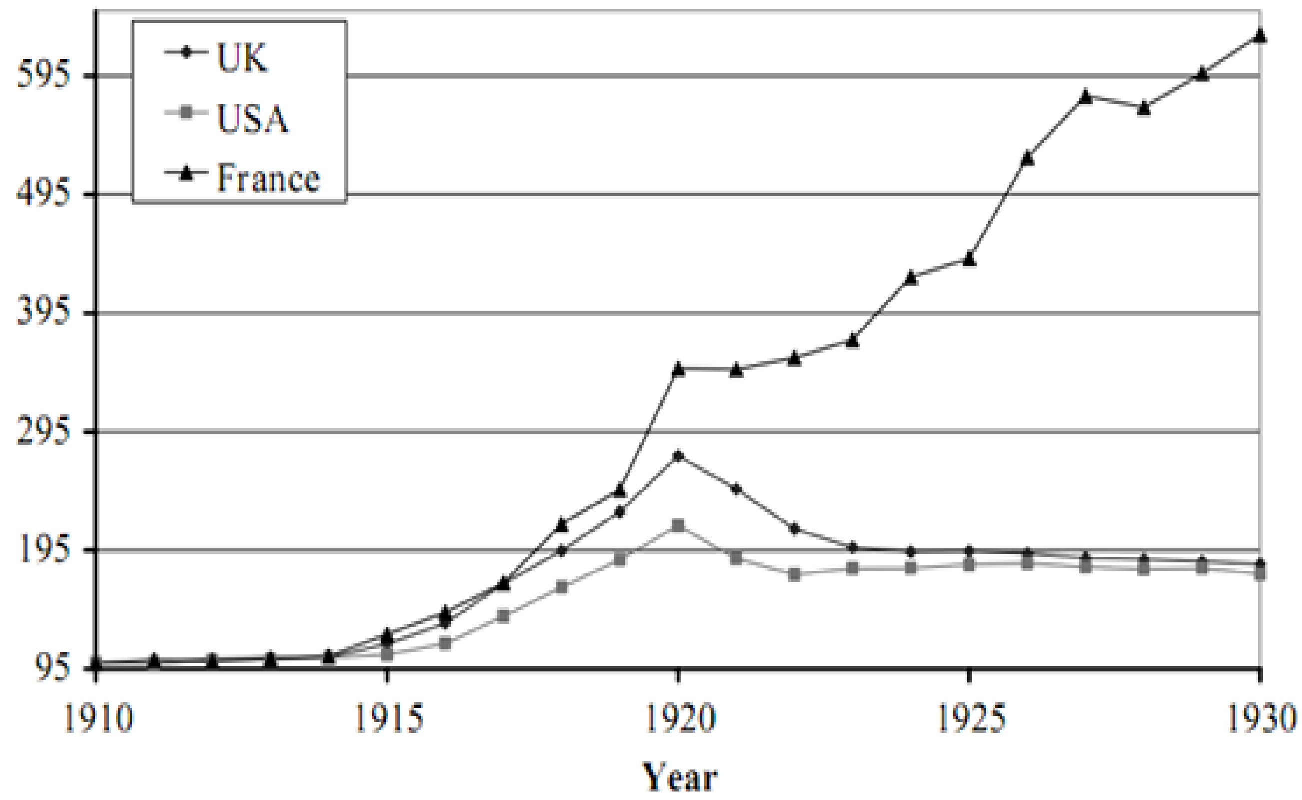


Figure 4: Debt to GDP

- (Source: Bordo and Hautcoeur, 2007)

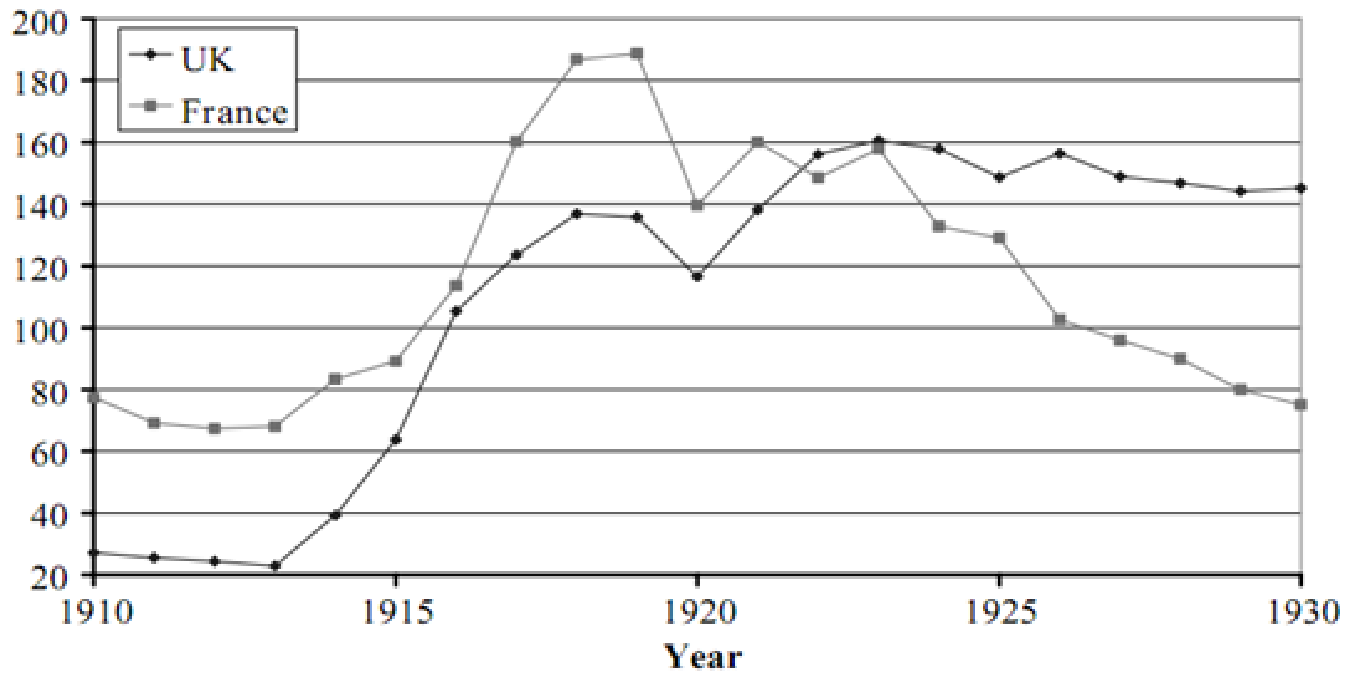


Figure 5: Budget Deficit (% of GDP)

- (Source: Bordo and Hautcoeur, 2007)

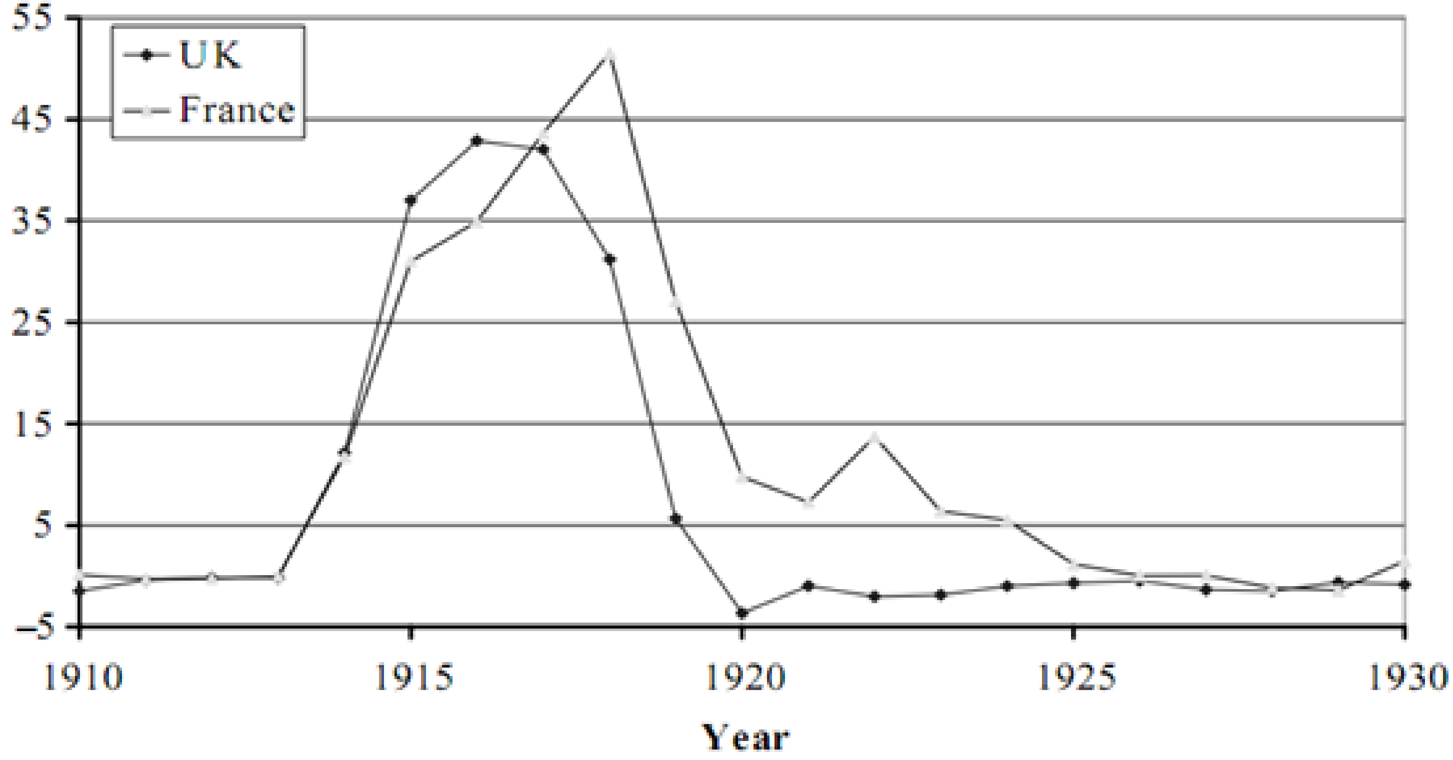
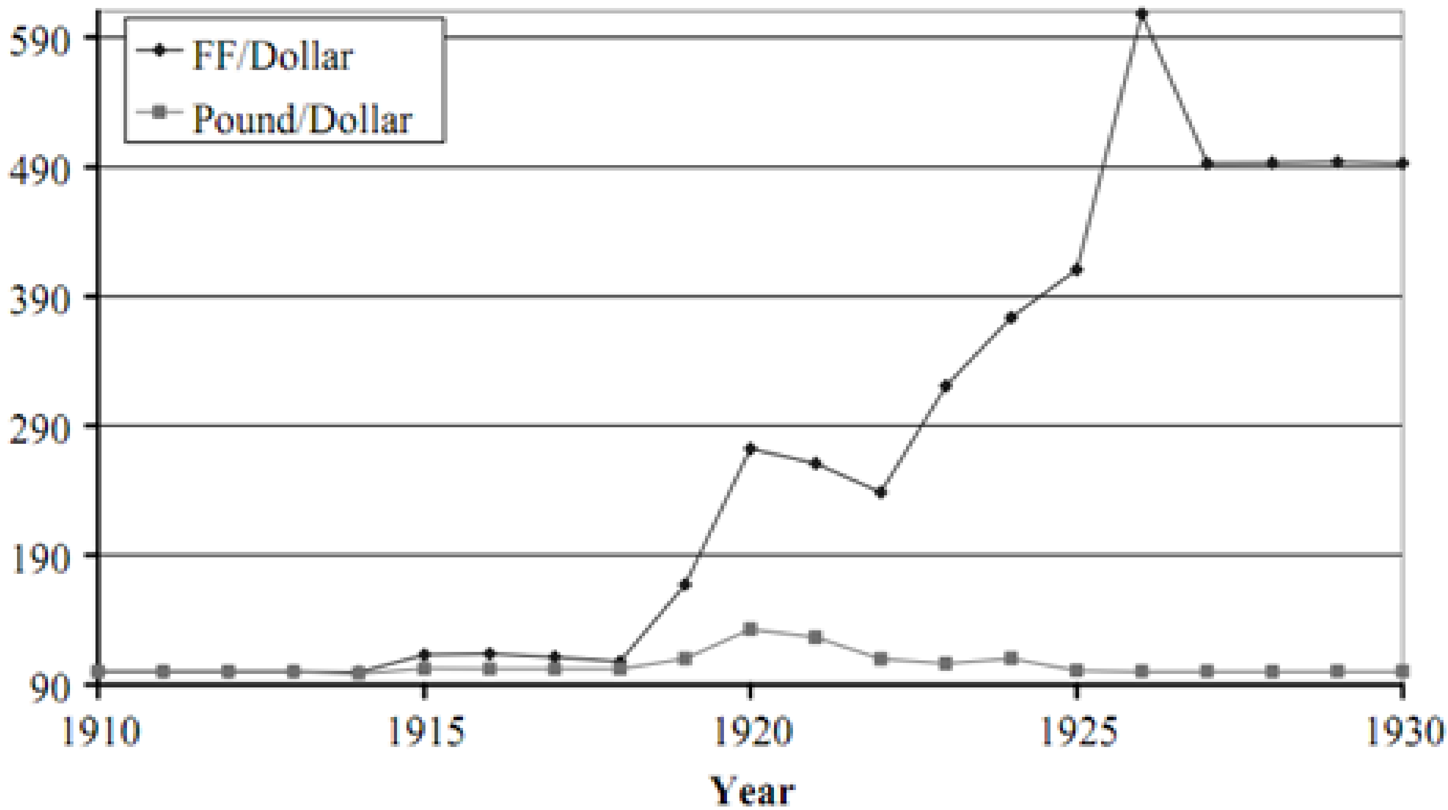


Figure 6: Nominal Exchange Rate

(Source: Bordo and Hautcoeur, 2007)



France in the 1920s

- The British pulled off a successful fiscal stabilization and returned to gold at the original parity in April 1925.
- France stabilized much later and returned to gold at a greatly devalued parity in December 1926.
- France had six years of rapidly rising prices and as in thefiscal theory of the price level model, the rise in the price level reduced the real value of national debt.

France in the 1920s

- Fiscal balance was restored in 1926 by a political compromise between the left and the right.
- This involved both raising taxes and reducing government expenditure.
- The French problems are well known (Eichengreen 1992)
- First , France ran larger deficits in WWI. The central bank absorbed short –term T-bills and pegged short-term rates, i.e. ran a passive monetary policy.

France in the 1920s

- Second. France lacked the political commitment to stabilization and resumption that the British had.
- This reflected:
- a) reparations– the belief that the Germans would pay;
- b) a struggle between left and right over who would cover the deficit once it became apparent that the German’s wouldn’t pay. The left wanted a capital levy, the right wanted to raise taxes.

France in the 1920s

- c) the Banque de France absorbed more of the short-term debt than the Bank of England and had a larger monetary overhang, and the government would have to repay its short-term debt to the Banque which would raise the deficit and the debt.
- The political tug of war continued for 7 years.
- Instead of cutting expenditures and raising taxes the government issued short-term bills which were largely absorbed by the Banque de France leading to inflation and a depreciating exchange rate.

France in the 1920s

- Fiscal equilibrium was reached in 1926 when Raymond Poincare was able to raise taxes, cut spending and borrow from JP Morgan.
- The Funds were used to stabilize the franc.
- The Franc was pegged to gold at an 80% devalued rate in December 1926.
- Bordo and Hautcoeur (2007) simulate a model of the French economy in the 1920s.
- We show that it was impossible for France to engineer a British style stabilization and resumption.

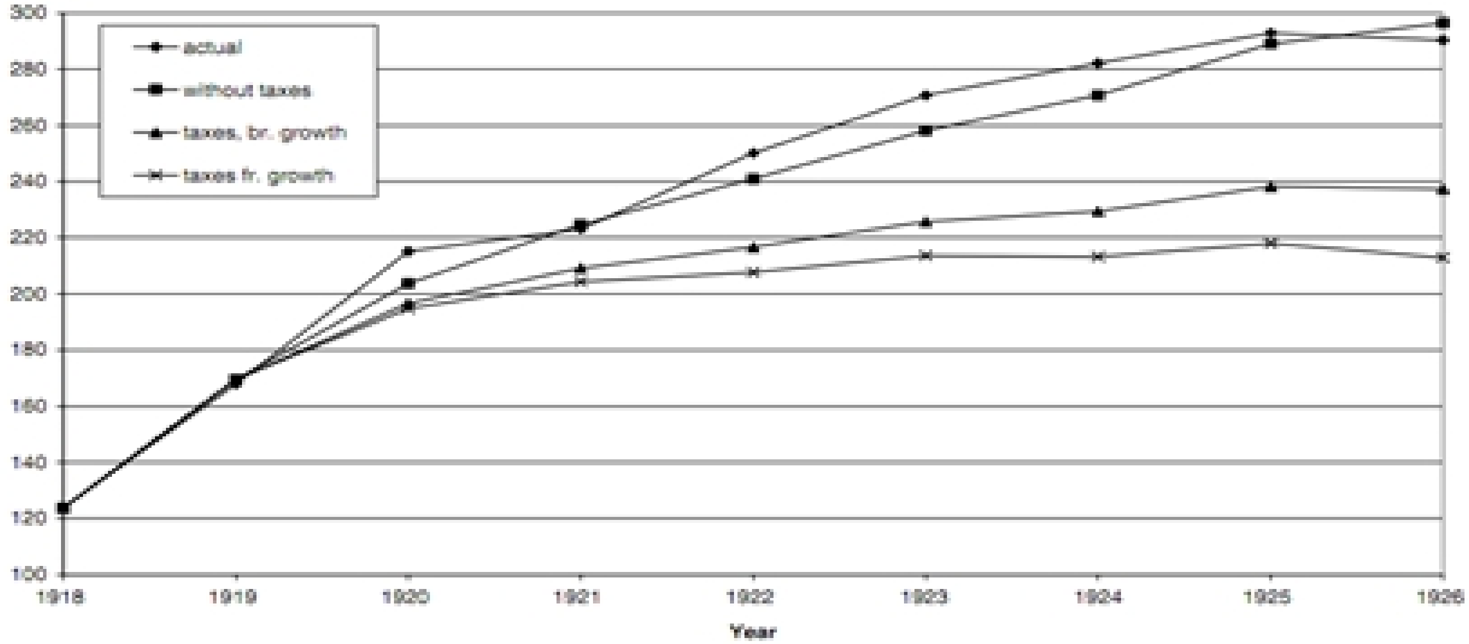
France in the 1920s

- British style debt consolidation would have increased French nominal debt to unsustainable levels. (see figure 7)

- France would have had a huge increase in the price level and a major devaluation to achieve fiscal equilibrium.

Figure 7: Nominal Public Debt

- (Source: Bordo and Hautcoeur, 2007)



The Great Inflation 1965 to 1979

- The run up in inflation from 1965 to 1979 in the U.S. was closely connected with fiscal dominance.
- In the U.S. in the early 1960s Keynesian ideas began to overtake fiscal orthodoxy.
- Walter Heller, James Tobin and Arthur Okun encouraged the use of activist fiscal and monetary policy to tame the business cycle
- They also believed in the Phillips curve tradeoff.

The Great Inflation: US

- In that environment the Federal Reserve began active policy coordination with the fiscal authorites.
- They also followed an “ even keel “ policy in which the central bank would suspend monetary tightening while the Treasury was funding government debt
- Once the Vietnam war and Johnson’s Great Society programs were underway the Fed often deferred to the Treasury and held off from monetary tightening (Meltzer 20100.

The Great Inflation: UK

- In the UK the Bank of England was not independent from the Treasury until the late 1990s.
- In the 1960s and 1970s the stance of monetary policy was largely dictated by the state of the government budget.
- In the 60s and 70s the growth of sterling M3 was driven by the public sector borrowing requirement.
- Fiscal and monetary policy was dedicated to maintaining full employment.

The Great Inflation: UK

- The UK Treasury did not believe that inflation was caused by monetary expansion. They attributed it to union power and supply shocks. Its policy prescription to fight inflation was incomes policy.
- In both countries inflation soared until 1979-80 when deliberate actions were taken to drastically tighten monetary policy and keep it tight at the expense of a serious recession until the back of inflationary expectations was broken in the early 1980s.

Some Policy Lessons for today

- The German and French cases are cautionary tales about how bad things could get if the high debt ratios that the U.S. and other countries presently have are not resolved.
- There is some similarity to the expansionary credit and fiscal policies that the Fed and other central banks have taken since the Financial Crisis of 2007-2008 and the Great recession.

Some Policy Lessons for Today

- There is a temptation to inflate away the debt as was done in the U.S. and other countries after WWII .
- But unlike the 1950s and 60s the rate of growth is much lower today, the term structure of debt is much shorter and the extent of financial repression much less .
- Thus the amount of inflation required to reduce the debt ratio would be much higher than in the postwar period.
- This would raise the risk of elevated inflation expectations and persistent inflation as in the 1970s.

Some Policy Lessons for Today

- Even if central banks don't deliberately engage in expansionary policies to reduce the debt overhang, the fiscal theory predicts that prices will rise to ensure present value fiscal balance.
- Thus there is a strong case for cutting government expenditure and raising taxes to restore sustainable fiscal balance in the near future.

Some Lessons for Today

- These historical examples suggest that if the debt ratio gets high enough then a rise in the price level is pretty likely
- History also suggests that a political deal is a good possibility before such an outcome was reached.
- Other advanced countries in the recent past have worked out such deals without having inflation e.g. Canada in the 1990s.

Some Lessons for Today; Canada in the 1990s

- Trudeau's Liberal government ran increasingly higher fiscal deficits and debt ratios from the 1960s to the 1980s to finance a massive expansion of the social safety net..
- The succeeding conservative government of Brian Mulroney tried unsuccessfully to restore fiscal balance in the late 80s and early 90s.
- After a down grading of its debt ratings by Moodys , the succeeding Liberal government under the guidance of the Finance Minister, Paul Martin successfully restored fiscal balance.

Some Lessons for Today: Canada

- Martin's budget drastically cut government expenditures across the board combined with minimal tax increases.
- The Provinces followed suit.
- Fiscal stringency was in place for 3 years.
- The deficit declined from over 7% in 1995 to a surplus by 1999 and the debt ratio fell by half.

Some Lessons for Today: U.S in the 1990s

- The George H. Bush and the Clinton administrations in two Acts in 1990 and 1993 reduced fiscal deficits from close to 5% to a surplus by the end of the twentieth century with a combination of cuts in government spending and a rise in tax rates.
- The successful outcome was likely aided by the Peace Dividend and rapid productivity advance.

Some Lessons for Today: U.S.

- Although the political climate is much more polarized in the U.S. than it was in the 1990s and the real economy is in worse shape a deal may be worked out sooner rather than later because of the threat to the dollar's international position.
- The exchange rate is a forward looking variable which could quickly telescope a future fiscal impasse to the present.

Some Lessons for today: U.S.

- A dollar crisis in 1978 triggered President Carter's appointment of Paul Volcker in 1979 to engineer his famous shock which ended the Great Inflation.
- A similar fiscal event could happen in the not too distant future.
- In the UK which is much smaller and more open than the U.S. and where sterling lost its reserve currency status decades ago, the financial markets forced it to consolidate before substantial recovery from the Great Recession occurred.

Some Lessons for Today: UK

- Debate continues over whether the UK consolidated too soon
- Time will tell which strategy is best.

Postscript on the Euro area

- The Greek debt crisis is a different story than is the case for the advanced countries after the recent crisis and recession.
- Its story is closer to the 1920s examples discussed.
- Absent the ability to inflate away its debt, default is the only option unless it continues to be bailed out by the rest of the euro area.
- The other peripheral countries are closer to the Great Depression story.

Postscript on the Euro area

- But EMU prevents them from using expansionary monetary policy or devaluing .
- And the absence of a fiscal union prevents fiscal transfers from aiding their adjustment.
- A fiscal union with a Eurobond serviced by taxes collected by a central European fiscal authority to facilitate inter member states transfers .
- And a credible no bail out clause would have prevented much of the present malaise