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## Analyzing the economic consequences of world war I on major European economies: Inflation, debt, and industrial recovery

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### Abstract

World War I (1914-1918) had a profound and lasting impact on the economic landscape of Europe, reshaping the fiscal and industrial structures of the major powers involved, particularly Germany, Britain, and France. This research paper explores the economic consequences of the war, focusing on inflation, public debt, and industrial recovery in these countries. The study investigates the fiscal strategies employed during the war, such as war bonds and extensive borrowing, and examines how these strategies set the stage for long-term economic challenges. Specifically, the paper explores the hyperinflation that plagued Germany in the early 1920s, driven by excessive borrowing and the devaluation of the currency, and the subsequent reparations imposed by the Treaty of Versailles. In contrast, Britain, despite facing high levels of debt, was able to recover more swiftly due to its stable financial system and foreign borrowing. France, though initially burdened by high inflation, experienced a more gradual recovery due to its industrial base and efforts to stabilize the economy. The paper argues that the economic turmoil of the post-war period contributed significantly to the instability of the interwar period, culminating in the Great Depression. This work draws upon key economic analyses and historical accounts, including those by Hardach, Ritschl, and Broadberry, to provide a comprehensive understanding of how the financial disarray following World War I set the stage for global economic instability.

**Keywords:** World War I, inflation, public debt, industrial recovery, European economies

### Introduction

World War I is a major turning point in world history, not only with regard to the human and geopolitical death toll it took, but also in its economic implications. The war brought heavy dislocations to the world economy, including in Europe, where its infrastructure was laid to waste; industries needed to adapt or be swallowed by others; and its governments faced enormous fiscal pressures on all fronts. This economic dislocation was exacerbated by the immediate post-war years marked by inflation, astronomical national debts, and serious disruptions to industrial production.

The great European economies — Britain, France and Germany — pursued different means to fund the war, and these decisions shaped their economic structures for many decades. The character of war finance, the weight of reparations and reconstruction of industry would all shape how these countries' economies recovered. This paper not only aims to determine how the economic outcomes of inflation, public debt and industrial uptake compared between major European economies in the post-war period but also to study them in detail by making sense of these phenomena through these relevant questions. How did war finance help shape the fiscal conditions of the post-war period? And how did the response to the war lay the groundwork for economic ruptures that would come in the interwar era?

European Inflation & Crisis in Perspectives: "This paper offers a comprehensive review, based on critical literature (including Hardach 1977, 2015<sup>[1, 2]</sup>, Ritschl 2004<sup>[3]</sup> and Broadberry and Harrison 2005)<sup>[8]</sup> of economic consequences of World War I through understandings of causes and outcomes of inflation, public debt and industrial recovery"<sup>[1, 2, 3, 8]</sup>.

"The consequences of reparations imposed on Germany are further explored by Ritschl (2004)<sup>[3]</sup>, who discusses how the debt burden from reparations compounded the financial difficulties already faced by the country. Ritschl's analysis underscores how the reparations contributed to the inability of Germany to recover economically in the immediate post-war period, leading to further borrowing and inflation"<sup>[3]</sup>.

"The First World War marked the watershed between the 19th and 20th centuries. The former was characterized by a relatively well-functioning international payment system based on the gold standard. London played a pivotal and stabilizing role, and the leading central banks cooperated as necessary. There was almost perfect mobility of factors of production, and commercial treaties and rapidly falling transportation costs encouraged trade.

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All this vanished in the large war spending of the main combatants, to be replaced by uncertainty and conflict after the war. The Versailles Treaty imposed reparations on Germany. It also re-shaped the political and economic geography of the world. Both new and old countries were politically unstable as the war unleashed social conflicts. Uneasy international relations made economic cooperation difficult. (Feinstein, Charles H., 2008)<sup>[4]</sup>. Aldcroft (2001)<sup>[5]</sup> provides a broader perspective on the economic landscape of Europe in the interwar period, noting that while Germany and France struggled with heavy debt and inflation, Britain was able to recover more swiftly due to its relatively stable financial system, despite the significant inflationary pressures it faced during the war<sup>[5]</sup>.

In examining the economic consequences of "World War I, Ferguson (2000)<sup>[6]</sup> critiques the traditional financing methods used by Britain, emphasizing that reliance on borrowing and war bonds created unsustainable national debt levels. According to Ferguson, although these traditional financial mechanisms were initially effective in raising funds for the war effort, they failed to account for the long-term fiscal challenges that arose after the war. His work highlights that the inability to establish a sustainable post-war repayment strategy significantly contributed to Britain's economic instability in the years following the conflict"<sup>[6]</sup>.

In contrast, Gross (2009) provides a focused analysis of Germany's war finance, detailing the role of gold reserves and how misplaced financial confidence contributed to the country's eventual financial collapse. Gross argues that Germany's early reliance on its gold reserves, combined with excessive borrowing and inadequate taxation, led to inflationary pressures and the devaluation of the mark. This financial mismanagement set the stage for hyperinflation in the early 1920s, a crisis that severely undermined Germany's economic stability and contributed to the political turmoil of the Weimar Republic<sup>[7]</sup>.

In their edited volume, *The Economics of World War I*, Broadberry and Harrison (2005)<sup>[8]</sup> explore the economic consequences of the war across various European economies, providing a comparative analysis of how each country responded to the financial challenges created by the conflict. They emphasize the disparities in economic recovery between the major combatants, particularly focusing on how war finance and industrial mobilization strategies shaped the post-war landscape<sup>[8]</sup>.

Feldman (1993)<sup>[9]</sup> provides a comprehensive analysis of the economic and social impacts of inflation in Germany during the period of hyperinflation (1914-1924). He argues that the rapid devaluation of the currency in the wake of excessive wartime borrowing and the subsequent financial mismanagement played a critical role in undermining public confidence and destabilizing the Weimar Republic. Feldman's work is crucial for understanding the broader political and economic consequences of inflation in post-war Germany<sup>[9]</sup>.

Lopez and Mitchener (2005)<sup>[10]</sup> examine the broader inflationary dynamics across Europe after World War I. Their study, published in *The Economic Journal*, provides a detailed analysis of the fiscal uncertainties that led to inflationary pressures in several European countries. They identify key factors, such as war finance strategies and the post-war transition to peacetime economies, that contributed to the inflationary instability seen in the early 1920s. Their work adds to the understanding of how inflationary dynamics

spread beyond Germany, affecting other European economies.  
[10]

### Pre-war Planning for Financial Mobilization

The financial mobilization which was implemented in August 1914 had been prepared much earlier than is often assumed.<sup>[5]</sup> In the German Empire, which was founded in 1871, the early plans for financial mobilization in the eventuality of a war provided for a combination of a cash and credit. After the Franco-Prussian War of 1870-1871 the German government exacted from France reparations of 4 billion Marks. Of this sum, 120 million Marks were set aside as an imperial war chest (*Reichskriegsschatz*). The money would be used in the initial phase of a military mobilization for the maintenance of soldiers, for arms and ammunition, for transport and other costs. Further costs of a war would be financed by a combination of short-term credit and one or more long-term loans.<sup>[11]</sup> The imperial war chest, 1,200 sturdy wooden boxes filled to the brim with German gold coins, had been stored since 1874 in the old citadel in the town of Spandau, now part of Berlin.<sup>[12]</sup>

The Prussian finance minister had pressed the imperial government to revise its plan for financial mobilization since the 1880s. The costs that could be anticipated in a future war had risen much higher, because of the increased strength and the new costly armaments<sup>[13]</sup>. In April 1891, the Imperial secretary of the treasury, the Prussian finance minister, the president of the Reichsbank and a number of other officials debated a new plan for fiscal and monetary policies in case of war. All wars were now understood to be financed by credit. The budget rule was that the day-to-day operations of the imperial government were on a regular budget, which had to be passed as balanced. Exceptional public investment was on an extraordinary budget which would be financed through credit. The rationale was that an investment would benefit future generations and so they ought to be involved in the project's benefits and support repayment of the loan that funded it. In addition, war expenditure was included in the extraordinary budget on the premise that a successful war would also benefit future generations, similar to an investment<sup>[14]</sup>.

Germany's central bank, the Reichsbank, was established in 1875. It was owned by a private person, though it had been subordinated to the imperial government. The bank law required the central bank to hold one third of total note circulation in gold and a little treasury notes (*Reichskassenscheine*). Commercial bills were to cover the issue of remaining notes. If the amount of notes in circulation exceeded a legal limit, the bank was required to pay a special tax<sup>[15]</sup>. Under the new program for financial mobilization, the Reichsbank would extend short-term credit to the government. Later one or more of the war loans would consolidate the government's short-term debt. The tiny regional note-issuing banks that existed in Germany at the time were not consulted about participation within the plan for a financial mobilization because they weren't under the control of the imperial government. The gold standard would have to be abandoned if the central bank took on the role of government's fiscal agent. The short-term government paper, an equivalent of commercial bills, may be accepted by central bank as second reserve. This would eliminate the note tax that the central bank had to pay, whenever its volume of notes in circulation exceeded the amount defined by its gold reserves and allow mutual verification with respect to how much

money each of these authorities implemented.

Some new loan banks (Darlehnskassen) were to be founded, in order to limit demand for central bank credit. The introduction of these loan banks is not without precedent. They were founded by the Prussian government in response to credit crises, caused by revolution (1848) and civil war (1866), and loan banks had been established by the North German Federation at the crisis of early Franco-Prussian War (1870-71) <sup>[16]</sup>.

The loan banks would be state owned, but operated by the Reichsbank. Their role was to extend credit to business, state government and local authorities, secured by securities or commodities as collateral. They issued their own loan bank notes (Darlehnskassenscheine) which were to circulate at par with the Reichsbank notes, the money of the regional note-issuing banks and treasury notes. The loan bank notes could be counted among the central bank's high-powered money reserve. Indeed, the loan banks were very much a flexible shadow central bank. When they issued notes, it was not subject to any reserve requirements and its note issue did not appear on the balance sheet of the Reichsbank. Reichsbank president criticized the planned loan banks; they issued unfunded paper money which may have inflationary consequences. But his objection was overruled <sup>[17]</sup>. The scenario for which the financial mobilization was prepared, in 1891, was of a short war concluding with a German victory. It was therefore assumed that drastic measures taken to depart from the gold standard would be temporary. The currency would be backed by gold after the war. The loan banks would then be eliminated, and the inflationary danger of which the Reichsbank president had warned could thus be disregarded. The Reichsbank always maintained that the changes of the bank law had to be minimal, in order for confidence in the German currency to remain <sup>[18]</sup>.

In the case of a military mobilization, it would be the central bank that was to deliver the money — therefore, the meaning of Spandau's war chest for empire changed. It would not be used for cash payment, but that it was actually transferred to the central bank in exchange with Mark equivalent, added to its gold reserve. As part of the same armament programme of 1913 it was resolved to increase the imperial war chest in Spandau, now a potential central bank reserve, by an additional 120 million Marks in gold. The government was also to build up a balance of 120 million Marks in silver coins as a cash reserve <sup>[19]</sup>.

In June 1891, there appeared a set of draft laws formulated by the Imperial treasury (Reichsschatzamt) which were to be enacted in case of a war following the conference of April 1891 <sup>[20]</sup>. Additional details were subsequently provided in the action plan for mobilizing financing. As part of the plan, details were worked out about where in relation to regional Reichsbank branches the loan banks should be located <sup>[21]</sup>. For the days of financial mobilization, millions of central bank notes and loan bank notes and treasury notes were printed up in advance <sup>[22]</sup>.

In order to facilitate the government's access to the capital market, the central bank proposed in 1906 issuing a new kind of short-term state paper in case war occurred, perhaps something it called the Treasury Bill (Reichsschatzwechsel); the title tying it closer to prevailing notions about commercial bills. The existing short-term treasury certificates (Reichsschatzanweisungen) weren't that well known and could be more difficult to sell in large quantities <sup>[23]</sup>.

But when international tensions increased in the early 20th century, a heated public debate ensued over financial mobilization in Germany. In books and articles, experts and journalists have articulated different models of financial mobilization. The debate produced no clear winner. Some experts urged credit to finance war expenditure, others recommended reliance on taxes. Neither government officials nor Reichsbank experts joined the debate, and some observers lamented that Germany wasn't ready to fund a great war <sup>[24]</sup>. A few historical studies, however, have taken contemporary complaints about poor financial preparation at face value <sup>[25]</sup>.

## War Finance and Its Consequences

### 1. The Financing of World War I

One solution to maintaining the war effort was financing strategies — and they carried severe consequences for the post-war economic order. European states utilized standard war finance approaches, like higher taxation and borrowing, to varying degrees. In Britain, for instance, borrowing from the United States was the main way to finance the war effort; taxes were a secondary source. The war also involved mass sales of war bonds, which enabled states to quickly raise cash but had a profound effect on national debts. Germany, on the other hand, depended heavily on bonds and loans and printing of money. Hardach's (2015) <sup>[2]</sup> analysis details the country's approach to war finance, which was initially successful as a strategy but resulted in catastrophic inflation during the post-war period. The matter of the devalued currency, the hyperinflation spiral that followed its release is at the heart of Germany's economic history after WWI <sup>[2]</sup>.

Although Britain and France did not escape the problem of soaring debt levels, their economies had structures that better weathered these self-inflicted damages: stable currencies and a mature manufacturing base. Flooding the American banking system with new bills as well increased money supply only set the stage for major problems.

### 2. The Inflationary Impact of War Finance

The issue of inflation, especially associated with the huge efforts of transforming national economy from peaceful production into warring economy, is probably one of the biggest economic issues influence by World War I. Yes, the money supply was expanded, either through a literal printing of currency or an increase in debt and this in turn makes prices go up throughout Europe and diminishes what workers can afford in markets leading to widespread inflation of local economies.

Within Germany, the war finance strategy — specifically, reliance on borrowing and physical money creation — created the conditions for one of modern history's most infamous hyperinflations. (1993) describes: the money supply increased dramatically in war times and transformed into price crisis; at last, all the currencies were worthless, and many normal transactions were desperately complicated because there was no mark at all. This inflation was worsened by reparations due as per the Treaty of Versailles, straining the German economy and throwing it into chaotic economic circumstances at the outset of 1920's. In France, inflationary pressures were slightly less acute but still high. The French government's massive borrowing and its expansion of the money supply to finance the war led to price increases and a depreciation in the value of the franc. But the French economy had a much quicker recovery than Germany's one as it was relatively well

off, with its strong industrial base and lower debt burden. Britain experienced inflation as well, though it was mitigated by the ability of the country to control the money supply and its dependence on foreign borrowing instead of domestic printing. But by the end of the war, Britain's national debt was already reaching unsustainable levels, and inflation loomed as one of the central problems for years to come.

## **The Burden of Debt and Reparations**

### **1. Germany's Debt and Reparations**

The Treaty of Versailles (1919), placed a heavy economic burden on Germany by requiring them to pay crushing reparations for all war damage that had been inflicted on the Allies. The reparations, originally fixed at 132 billion gold marks (varying over time), were intended to recompense the Allied powers for payment of the costs of war and subject Germany economically. This burden of debt was a key factor in the economic woes the Weimar Republic experienced in subsequent years.

Another study, also on Germany, focused on the long-term effects that reparations imposed in that country resulted from its generally poor compliance with the payment (Ritschl 2004) [3]. Germany's failure to fulfil its reparations obligations in the early 1920s resulted in more borrowing, which in time stoked inflation and brought economic stagnation. The Dawes Plan (1924) temporarily alleviated the situation thanks to a reorganization of payments and foreign loans that were designed to stabilize the German economy, but reparations never ceased to be contentious well past the onset of Great Depression. The reparations also played a significant role in enabling political instability in Germany as many Germans saw the payments as a type of national humiliation. This resentment contributed to the rise of extremist political movements, including the Nazi Party, which seized on public grievances over the Versailles settlement and its economic impact.

### **2. The Impact of Debt on Britain and France**

Germany's reparations were perhaps the most well-known part of post-war debt, but other European countries faced large fiscal challenges as well. The United States war debt was a big issue in Britain and France. Britain's national debt, already high before the war, swelled because of wartime spending. Britain, however, was able to service its debt with loans from the U.S. and other allies while recovering economically much more quickly than Germany.

France also carried heavy war debt, most of it owed to the United States. The French government that had taken on great debts when borrowing to pay for military and reconstruction efforts could not meet its financial obligations in the early 1920s. The economic strain was also worsened by the devastation of much of France's industrial base — particularly in the northern and eastern parts of the country. Through the mid-1920s, revived attempts to stabilize the economy via devaluation and foreign loans by the French government be stabilized it, yet debt servicing continued to present difficulties.

## **Industrial Recovery in Post-War Europe**

### **1. Germany's Industrial Recovery**

The industrial recovery in Germany during the years following World War I was slow and uneven: the war had decimated Germany's overall level of industrial

infrastructure, especially with respect to coal mining/coal production/heavy industry. By the mid-1920s Germany was entering a period of economic recovery, supported by foreign loans under the Dawes Plan and currency stabilization through the Rentenmark. Technological innovation in key sectors such as chemicals, automotive manufacturing, and electrical engineering also facilitated industrial recovery. While these strides were beneficial, Germany's industrial recovery was held up by continued reparations payments and national debt burdening the government to reinvest in infrastructure and development.

### **2. France's Industrial Reconstruction**

In sharp contrast with Germany, the reconstruction of France's industrial base proved to be very difficult. The war had obliterated swaths of France's industrial infrastructure, especially in the northeastern region, which had been at the center of the fighting. Though the French government made significant efforts to rebuild damaged areas and factory output, it would be long, arduous and expensive work.

As in Germany, the French economy depended on foreign loans to help it recover. Yet, the economic strain was aggravated by sky high rates of inflation and by a somewhat volatile currency. Although France did sort out her industrial recovery eventually, it was so staggeringly tardier than Britain's that she had three times the worst of any industry you could name — including coal and steel — compared to Britain where it wasn't much affected by the war at its base.

Aldcroft (2001) [5] discusses France's post-war industrial recovery, mentioning that this nation's industrial output gradually matched pre-war production ratios by the end of the 1920s. But this recovery was delicate and vulnerable to global economic shocks, as demonstrated by the economic troubles of the early 1930s [5].

## **Conclusion**

The economic impact of World War I on the major European economies was deep and lasting. Post-war economics was characterized by inflation, public debt and the necessity for a recovery of industry. But Germany in particular, burdened as it was with both reparations and war debts, saw its currency devalued to such a point that hyperinflation set in, ruining millions of German citizens at the behest of their occupying Allies. For France and Britain, which had relatively stable currencies and relatively less devastating damage from the war, the fiscal situation was bad enough as they prepared to rebuild their economies.

The economic legacy of the war also helped establish a foundation for the political and economic instability that shaped an interwar period. Though industrial recovery did eventually take place, it was uneven throughout Europe and the fiscal legacies of war weighed heavy on many nations. The conditions for the global economic downturn of the Great Depression had already formed through underdevelopment of European economies in 1920s and 1930s. In the end, World War I bequeathed Europe a legacy of fiscal instability, inflation and industrial dislocation. This is a lengthy text, but long story short: the way to true economic stability would be one full of roller coaster rides and all kind of tipping points that would hit European politics and economics during the interwar time - The end of your 19th century marked itself for its beautiful economical scene with no inclination to the hellish scenario things were going to in World War I

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