Monetary Policy Regime Changes–Political Economy and Distributional Effects*

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Preliminary

Abstract

I analyze the policy choice of resuming the gold standard after the French Wars (1793-1815) in the face of an exceptionally high debt burden. The choice was neither inevitable nor based on economic rationale. Rather, it hinged on the identity of public creditors and the geographical distribution of economic hardship and political representation. Resuming the pre-war parity of the pound induced large scale deflation and recession. This outcome was politically feasible because the franchise was limited and political repression was comprehensive. Means and causes of the resumption were political. The paper informs current policy choices between maintaining a fixed exchange rate and restructuring an outstanding debt overhang.

Keywords: Monetary policy regime change, distributional effects of monetary policy, political economy of monetary policy, fiscal redistribution.

JEL: N43, E42, H23, H60.

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1 Introduction

Monetary policy regime changes are rare events. Perhaps because they entail a heavy burden on the economy during the adjustment process. The Volcker disinflation–the much commented and most recent monetary policy regime change in an industrialized economy–produced a cumulative output loss of 20% while almost doubling the unemployment rate (Goodfriend and King 2005).[1] The episode treated here–Britain's resumption of the gold standard in 1821–was more spectacular. The unemployment rate rose from 5% to 17% while deflation continued well into 1830s (Feinstein 1998). In the US of the Volcker era, the debt-to-GDP ratio hovered around 30%. The UK's debt-to-GDP ratio peaked at 250% in 1822. Given these circumstances, I ask why British policy makers chose to suffer the costs of an internal revaluation by resuming the gold standard after the French Wars.

The policy choice of returning to the gold standard in the face of an exceptionally high debt burden was not based on economic rationale. I demonstrate that it primarily reflected political calculations and bargaining and that it hinged on the identity of public creditors and the geographical distribution of economic hardship and political representation. Moreover, resumption secured a sought-for return to the pre-war wealth distribution at the admitted price of a less efficient allocation of capital.[2] By augmenting the real value of outstanding debt it also meant a fiscal transfer from tax payers to public creditors.

By analyzing primary sources–such as *verbatim* transcripts of parliamentary debates–and hand-collected data, I uncover that political calculus and bargaining intervened at two distinct levels. Within the governing Tory party, the landed gentry initially opposed resumption of the gold standard for fear that deflation would increase the real debt burden on their highly mortgaged estates. The introduction of the Corn Laws placated the opposition of the landed gentry by imposing steep import duties that safeguarded the profits and political power associated with land ownership.

[1] Paul Volcker became chairperson of the Federal Reserve Board in August 1979. At this moment the civilian unemployment rate was 5.9%; it peaked at 10.8% in November 1982.

[2] Hansard HL Deb 21 May 1819 vol 40 cc 640-641.

Political calculus favored the resumption of the gold standard also along party lines. While in the opposition, the Whigs pushed and voted for the gold standard to be resumed. At the same time, Whig leaders acknowledged in private the disastrous consequences of resuming the gold standard and were determined to exploit them for party advantage (Hilton 1977, p.40).

Two sets of circumstances, economic and political alike, further facilitated the resumption of the gold standard. The right to vote in Parliamentary elections or to become a member of parliament was linked to property rights. Registered voters over the period under consideration amounted to 1.5 percent of the total population. At the same time, denominations of public debt certificates were large enough to guarantee a large intersection between creditors of public debt on the one hand, and members of parliament and registered voters on the other hand (Johnston, 2013). There was therefore a strong political consensus to return to gold in order to avoid any "fraud on the national creditor".[3]

A second set of circumstances–related to the geographical distribution of economic hardship and political representation–may have affected the decision to resume the gold standard. The transition from a war to a peace-time economy was particularly difficult in the newly industrialized North of the country, around Birmingham and Manchester. Deflation further contributed to harming the real economy (Gayer et al. 1953). Thus, opposition to resumption was particularly strong there. However, while Manchester and Birmingham were approaching 100.000 inhabitants each, they did not send MPs to London. Densely populated boroughs in London were grossly underrepresented as well, weakening the case of London merchants' opposition to resumption.

In addition, I particularly focus on the Bank of England in studying the different interest groups involved in the negotiations that led to the resumption. On the basis of hitherto unexploited data, I reconstruct how the Bank of England generated profits and find that its opposition to the modalities of resumption was *bona fide*. This adds a new layer to the debate regarding the degree of discretion in the Bank's monetary conduct and considers the institutional fabric of monetary policy more generally (Flandreau 2007).

[3]Hansard HL Deb 21 May 1819 vol. 40 c. 614.

My narrative is new in several aspects. I find that distributive rather than monetary reasoning governed the decision to resume the gold standard. It took an extensive analysis of primary sources to analyze decisions made in light of the information available to and the beliefs held by policy makers in real time (Blaug 1990). *Verbatim* transcripts of parliamentary debates, parliamentary reports containing evidence provided by contemporary experts and specifically prepared and hitherto unexploited data uncovered policy makers' incentives. The latter shaped policy proposals and it is against intended outcomes that the obtained should be measured. Against this yardstick, resuming the gold standard was a great political success: it granted the return to the pre-war wealth distribution and harmed the governing party. The exact same reasons also implied that resumption meant an economic calamity.

The issues considered in this event study are of timely relevance. My analysis reveals that choosing to return to a fixed exchange rate rather than restructuring a massive debt overhang came with high economic and political costs. In addition, the policies of fiscal retrenchment that accompanied the resumption of the gold standard were self-defeating. Between the deflationary effects of resumption and the contractionary impact of the shortfall in public spending, it took the debt-to-GDP-ratio almost two decades to return to its level after the French Wars in 1815, and that despite a primary surplus of 8% on average.

The remainder of this article is organized as follows. The next section briefly describes the fiscal tensions that led to the suspension of the gold standard and analyzes the blueprint for resumption, the Bullion Report. Section three depicts the burden left by the French Wars and studies the people, the arguments, and the actions that shaped and accompanied the return to the gold standard. The Bank of England's position regarding the resumption of the gold standard ans its underlying rationale are analyzed in section four. Section five links the gold standard to the broader fiscal constitution and explains the timing of social discontent and the reactions to it. The final section concludes.

2 Setting the Stage: the Bullion Report's Terrible Policy Advice

The French Wars, 22 years of almost uninterrupted warfare between 1793 and 1815, exerted extreme political and financial pressures. Britain went into the wars with an already high debt-to-GDP ratio–127 percent, a relic from the American War. Implementing the usual tax smoothing approach, the first four years of the wars were debt financed (Antipa and Chamley 2017). This led to a 50 percent increase in outstanding debt. Interest rates on the benchmark instrument of public debt–a three percent perpetual, the consol–increased by 200 basis points.

The Treasury borrowed short-term from the Bank of England, whenever unforeseen expenditures occurred. In these circumstances, French military actions in February 1797 triggered bank runs with depositors hoping to convert notes into gold coin. In order to continue supplying the Treasury with cash, the Bank ceased payment of its notes in gold on the 27^{th} of February 1797. Suspension of the gold standard, "indispensably necessary for the public service" created a payment system, in which the Bank and the Treasury controlled the money supply.[4]

Beginning in 1809, the paper pound's exchange rates into gold and foreign currencies–the measures contemporaries used to gauge inflationary tensions–started to experience marked declines. These evolutions prompted government to appoint an investigating committee. The Report from the Select Committee on the High Price of Gold Bullion, the Bullion Report in short, was discussed in Parliament in May 1811.[5] According to the Committee, the Bank's over-issue of notes produced the pound's devaluation. Over-issue was only possible because the suspension of the gold standard had relieved the Bank of its obligation to exchange its notes against gold on demand. The Committee thus recommended to resume the gold standard over a period of two years, regardless of the continuation of the war.

[4]"From the result of the information respecting the unusual demands for specie, that have been made upon the metropolis [..] it appears, that unless some measure is taken, there may be reason to apprehend a want of sufficient supply of cash, to answer the exigencies of public service." (Hansard's Parliamentary Debates, vol.32, p.1518).

[5]A year elapsed between the Report's completion in June 1810 and its discussion.

Evidence regarding the relationship between prices and the Bank's note issue was tenuous. This was pointed out by contemporaries and Antipa and Chamley (2017) have corroborated this view using the Bank's hitherto unexploited weekly balance sheets.

In addition, the committee's conclusions regarding the note over-issue were neither helped by the commercial distress affecting the Northern industrial parts of the country. Difficulties in (South) American export markets came at a particularly bad time as Napoleon's trade blockade had shut down European markets to British exports. The great decline in the price of manufactured products caused manufactures to reduce their workforce by 30 percent. Given the widespread calls for means of payments, a parliamentary committee proposed to remedy the liquidity crisis–as in 1793–by the issue of Exchequer bills.[6] In these circumstances, it was difficult to argue that the circulating medium was abundant and that the Bank had over-issued.

Moreover, the policy recommendation to return to the gold standard was controversial, including among Committee members. Alexander Baring, prominent banker, agreed with much of the theoretical analysis but thought evolutions in public debt rather than in the Bank's circulation were at the origin of Britain's ills.[7] He did not vote in favor of resumption (Fetter 1942).[8] Beyond the Committee, positions were similar. Francis Burdett, reformist member of Parliament, did not believe that the country could return to parity while meeting its obligations caused by the Army, the Navy, and the interest on the public debt. Regarding paper money, he resumed his opinion by quoting Dante: "You who enter here leave all hope of returning behind".[9]

A large majority–180 against 45–voted against the Committee's recommendation to resume in two years time. The resolutions regarding the Committee's theoretical findings were negated by a smaller margin (151 against 75).[10] MPs did not seem sufficiently

[6] Hansard HC Deb 7 March 1811 vol 19 cc 249-58.

[7] Another Committee member went further by pointing out that the report's conclusions were very different from the evidence presented (Hansard HC Deb, 9 May 1811, vol. 19, cc 1155-56).

[8] Hansard HC Deb, 8 May 1811, vol. 19, cc 1058-61.

[9] Hansard HC Deb, 9 May 1811, vol. 19, cc 1156-1160.

[10] Hansard HC Deb, 9 May 1811, vol. 19, cc 1169.

confident in the report's prescriptions to risk the adverse consequences of resuming the gold standard in times of war. Put differently, for most MPs the counter-factual did not consist in bringing back the exchanges to par and winning the war. It entailed resuming the gold standard and losing the war (O'Brien 2006).

Instead, parliament adopted a number of counter-resolutions, proposed by Nicolas Vansittart, MP for the infamous "rotten borough" of Old Sarum and soon-to-become Chancellor of the Exchequer. His resolutions upheld existing law, according to which the resumption of the gold standard was to happen six months after the conclusion of a definitive peace treaty.[11] Beforehand, Vansittart sought to reassure: "During the existence of a public debt, the alteration of the standard of money would be an act of bankruptcy, and a direct fraud on the public creditor as well as every private creditor." All national resources were to be mobilized to win the war. This increased the chances of wining and thus also of reimbursing the public debt at the old par.

3 The Politics of Deflation

"The transition from war to peace had indeed been attended lately with such a stagnation of internal trade, such a consequent check to circulation and credit, such an interruption to all adventures, either in buildings, or lands, in raw produce or manufactured goods that all parties (the annuitants excepted) were dissatisfied and uneasy" (Huskisson to Canning, 27 March 1815).

Napoleon's final defeat at Waterloo in June 1815 marked the end of the French Wars. The length and intensity of the conflict entailed a heavy strain on Britain's economy and public finances. The period also coincided with the beginnings of the Industrial Revolution that was to have an important impact on growth and the distribution of wealth. These factors shaped the transition from a war to a peace time economy.

[11] 44 Geo. III c. 1.

3.1 The Difficult Transition from a War- to a Peace-Time Economy

The debt-to-GDP ratio reached 190 percent by 1815, up from 127 percent in 1792. It stabilized at 252 percent in 1822. In terms of costs, this war is second only to World War One. Prices increased by more than 40 percent between their peak in 1814 and the beginning of the suspension period. When the war ended in 1815, prices were still 36 percent above their pre-suspension level.

War-time induced inflation was not accompanied by an important increase in GDP per capita. Due to the acceleration in demographic growth, GDP per capita stagnated over the period, as depicted in Figure 1. Evolutions in real wages mirrored this fact. While there is a heated debate regarding the standard of living of British working classes during the Industrial Revolution (Feinstein 1998; Lindert and Williamson 1983), the literature broadly agrees that real wages were stagnant during the French Wars (Allen 2007; Williamson 1984). In its first years, the Industrial Revolution did not make workers better of–a fact reminiscent of the Kuznets curve.

The stagnation of real wages was concomitant with a number of factors that affected workers' living standards negatively. With rising fertility, the ratio of the dependent population to the number of occupied increased between 1771 and 1821. This might have reduced the standard of living of the average family by roughly 10 percent (Feinstein 1998). Taking into account the deleterious effects of poor housing, inadequate public health, and other disamenities of urban life would decrease average real earnings by three to eight percent (Brown 1990).[12]

The 1816-1817 after war depression was accompanied and magnified by the large postwar demobilization and agricultural winter unemployment (Acworth 1925). The unemployment rate rose to 17 percent, from an average of five percent over the period from 1770 to the end of the Napoleonic Wars. Thus, not considering the disamenities of urban life and unemployment related pressures to working times implies that the stagnating

[12]Brown (1990) posits that between 10 and 25 percent of the urban wage might be regarded as the premium required to compensate city workers for the costs in terms of health. When applying such a reduction to the one-third of the population living in towns of more than 20,000 in 1851, average real earnings at that date would be cut by the above stated numbers.

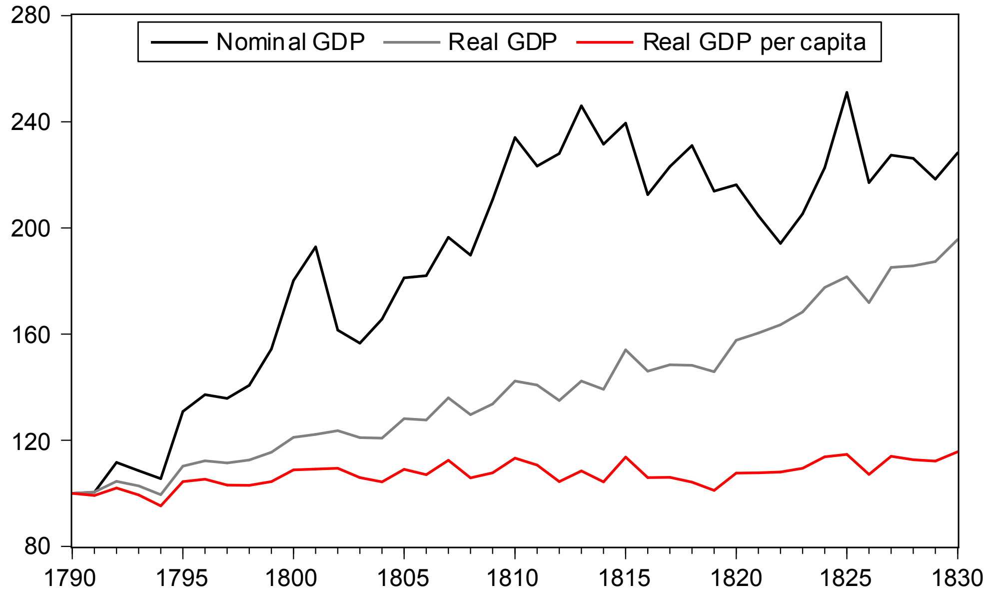

Figure 1: GDP growth, 1790=100, 1790-1830

Source: Broadberry et al. 2012.

real wages during the Napoleonic Wars and early Industrial Revolution might depict an upper bound to quantitative measures of the quality of life.

The North of the country that was hit worst. Losing the war-related ammunition demand, the metal industry's output decreased by 15 percent between 1815 and 1816, a development that affected Birmingham particularly (Broadberry et al., 2012). The slump spread further to the textile sector, concentrated in and around Manchester, as exports to the war-ridden continent declined as well. By the end of 1817, numerous country banks had gone bankrupt and deflation further contributed to harming the real economy–prices had decreased by 16 percent between their suspension peak in 1814 and 1817 (Gayer et al. 1953).

Returning to the gold standard at the pound's pre-war gold content would entail two consequences. Wartime inflation would have to be undone by deflation down to the pre-suspension price level. This would further aggravate and prolong the after-war depression. The return to the gold standard would also constrain the Bank's capacities to accommodate the country's and the Treasury's financing needs.

3.2 Politics Paving the Way for Resumption

The Corn Law of 1815 paved the way for the resumption of the gold standard inside the governing Tory party. Tory members among the landed gentry initially opposed resumption for fear that deflation would increase the real debt burden on their highly mortgaged estates. The Corn Law imposed stiff import duties on imported corn and other cereals, safeguarding the landed gentry's rents and political power.

As long as British corn prices were below 80 shillings per quarter, imports of foreign wheat were prohibited. North American wheat imports were free at or above 67 shillings per quarter. These barriers were binding. Between the end of the wars in 1815 and 1830, British wheat prices rarely exceeded 60 shillings per quarter; the disastrous harvests of 1816-17 were an exception to the rule (Hilton 1977, pp.6-7). Moreover, given pervasive deflation before and after resumption, import ceilings were never reached, freeing British producers from international competition.

For the government the Corn Law meant a means of transition from war to peace. With the loss of military demand, the economy would enter stagnation if ever the decline in prices further reduced faltering demand. Parliament was to emulate the effects of Napoleon's blockade in order to slow down the inevitable process of deflation. In addition, by protecting farmers politicians were attempting to render the country independent of foreign corn supplies (Hilton 1977, pp.15-16).

Radicals, manufacturers, and the urban poor resented the law as a *pacte de famine* between the landed aristocracy and the administration. The opposition from the mercantile and industrial circles argued that the law would raise wages and thus reduce exports. When popular discontent took to the streets, ministerial support for protection strengthened.

Political calculus favored the resumption of the gold standard also along party lines.

Whig leader Earl Grey admitted privately in December 1818 that it would be impossible "to resume cash payments, without encountering a degree of distress, which no Administration can encounter". Grey anticipated the government's overthrow because of the currency issue and was sanguine that Whigs would come to power once the depression was over.[13] In the opposition, the Whigs pushed and voted for the gold standard to be resumed at the pre-war parity. While acknowledging in private the disastrous consequences of resuming the gold standard they were determined to exploit the economic calamity for party advantage (Hilton 1977, p.40).

3.3 Arguments and People

The most pervasively used argument in favor of resumption claimed that an alteration in the monetary standard would be a fraud on the national creditor.[14] Reimbursement of war-related debts had two dimensions. A nominal one which meant that bond holders were paid back the amount of pounds initially agreed upon. And a real one entailing that the amount of pounds still bought the same amount of commodities.

Opponents to the resumption rightly pointed out that since 1797, the currency had been often depreciated. In 1819, 60 percent of outstanding debt had been contracted after the suspension of the gold standard. During the period of suspension, the depreciation of the paper pound averaged ten percent, peaking at 46 percent in 1813. Returning to the gold standard at the pre-war parity would imply a substantial redistribution from taxpayers to public creditors. Equity would rather imply to maintain the devalued exchange rate of the pound.[15]

It was therefore also proposed that resumption should be accompanied by tax reform. Taxes on the property of the affluent should be increased to release the laboring and industrious classes that were most affected by the after-war depression.[16] This would also render the public debt more sustainable. The repeal of the income tax in 1816 signaled opposite policy intentions.

[13] Holland House Papers, 51545, pp.215-216.

[14] Hansard HL Deb 21 May 1819 vol. 40 c. 614; HC Deb 24 May 1819 vol. 40 c. 699.

[15] Hansard HC Deb 25 May 1819 vol. 40 cc 764-771.

[16] Hansard HC Deb 02 February 1819 vol. 39 cc 250-251.

Another option to put the debt overhang on a stable footing was of course devaluation. Contemporaries put forward that devaluation would overall render the public debt safer. After all, deflation would increase the real value of debt. Interest rates–i.e. risk premia–had increased since the discussions regarding resumption at par had commenced.[17]

Contemporaries were perfectly aware of the resumption's redistributive implications. Lord King–who at the time of the Bullion Report had refused to accept paper money at face value–stated that the restriction had changed the distribution of wealth and the employment of capital. It afforded advantages to merchants at the expense of fixed annuitants and creditors on money contracts. "The wealth was taken in part from those who did not actively employ it, and given to those who did; but whatever increase to the general riches was thus effected, was at the expense of injustice to those classes whom it was the duty of the legislature to protect."[18] Reestablishing the pre-war *status quo* seemed the overriding policy objective, be it at the price of a less efficient allocation of capital and higher real debt burdens for tax payers.

Besides the political imperative, the resumption's economic rationale was based on rather sanguine projections and Say's law. In the first months of 1819, the pound's market exchange rate into gold was five percent below its official mint equivalent.[19] Some contemporaries, among which David Ricardo, thought that resumption-induced deflation would be limited to these five percent. When the Bank resumed cash payments in 1821, prices had declined by 12 percent and continued to do so well into the 1830's, punctuated only by the 1825/26 boom-bust episode.

When called to witness before the committee preparing resumption, the prominent bankers of the period, Baring and Rothschild, had clearly rebuked the sanguine projections and argued against the proposed modalities of resumption. Baring stated that the difference between the mint and the market price was not a reliable measure of deflation to come. He argued that a return to cash payments fundamentally changed the

[17]Hansard HC Deb 25 May 1819 vol. 40 cc 761-763.

[18]Hansard HL Deb 21 May 1819 vol 40 cc 640-641.

[19]At the height of the war in 1813, the pound's devaluation had exceeded 40 percent.

demand for money by constraining the Bank's possibilities of accommodation in times of financial distress.[20] Rothschild warned of the lasting effects deflation would exert on demand through foregone consumption and investment.[21]

The common view of Say's Law–aggregate supply creates matching demand and full employment is the natural state of economies–was contested by prominent political economists. Malthus argued that insufficient domestic demand caused falling prices and profits and depleted the capital stock. This situation could only by aggravated by contracting the currency (Malthus 1820, pp. 415-418). An equilibrium with unemployment existed and demand was low because people accumulated precautionary savings (Chamley 2013).

There was ample evidence that contemporaries anticipated adverse developments if resumption was adopted and that this caused precautionary savings and faltering demand.[22] The Birmingham School of currency reformers, among which Thomas Atwood, therefore called for public intervention to counter under-consumption (Checkland 1948). Atwood advocated an inconvertible paper money and suggested the Bank buy government stock and debt using its notes, a policy similar to quantitative easing (Atwood 1816).

Overall, the opposition to resumption included prominent politicians, bankers, merchants, manufacturers and political economists (Hilton 1977, pp. 56-58). Aggravating the already difficult economic situation, resumption was neither popular with the people. In its most organized fashion, opposition manifested in the numerous petitions against the resumption of the gold standard that were presented in parliament.[23] While the arguments opponents would advance were primarily economic in nature, the reasoning behind the decision to resume the gold standard appears to have been political.

[20]Report from the Secret Committee on the Expediency of the Bank Resuming Cash Payments, 1819; testimony of Alexander Baring pp.180-204.

[21]Report from the Secret Committee on the Expediency of the Bank Resuming Cash Payments, 1819; testimony of Nathan Myers Rothschild pp.157-163.

[22]Hansard HC Deb 25 May 1819 vol. 40 cc 754.

[23]Hansard HC Deb 03 February 1819 vol. 39 cc 0-280 and HL Deb 21 May 1819 vol. 40 cc 597-600.

4 The Uses of Monetary Discretion

The Bank Restriction Act had initially determined that specie payments would be resumed six months after the end of the war. After the end of the Napoleonic Wars in June 1815, the legal limit was extended twice, carrying the restriction to the 5th of July 1819.[24] The Bank had financed the last and decisive years of the war. It became an even more important provider of funds after the war, when the repeal of the income and malt taxes in 1816 diminished public revenues. The Bank's short-term financing of public expenditures had acted as a constraint on previous resumption attempts (Antipa 2016).

As can be seen in Figure 2, the Bank's holdings of Exchequer bills accounted for almost 70 percent of its assets when resumption was decided in 1819.[25] On the liability side of its balance sheet, the Bank's note circulation was the counterpart to its holdings of public securities. The Bank was ready to resume cash payments, but only by "turning a deaf ear to the wants of the public".[26] As this was not an option, Bank directors emphasized that a large portion of their issues was placed beyond their control.[27]

The Bank objected to the proposed plan for resumption. Currency had been issued to meet the needs of both the nation and the government. In doing so, issues had been kept within reasonable bounds, as was conceded in the report itself. The return to cash payments was frustrated by events that could neither be foreseen nor controlled by the Bank. Taking away the Bank's discretion by imposing gradual resumption over a lapse of four years was imprudent, given the impossibility of predicting the necessities and distresses of the commercial world.

Instead, the Bank proposed to pay its notes at the market price of the day, after hav-

[24]Between the Treaty of Paris that ushered in what was to be the preliminary end of the French Wars in May 1814, and Waterloo, the definite end of the wars in June 1815, the resumption was postponed twice. Once in time of peace, in July 1814, and once during Napoleon's 100 days of reign in March 1815.

[25]The Bank's financing of Exchequer bills also kept interest rates low in the London money market. As Exchequer yields acted as a floor in the money market, favorable financing conditions also benefited London banks and merchants and, due to London's centrality in the financial system, commerce more generally (O'Brien 2006 and Hansard HC Deb 8 February 1819 vol. 39 cc 381).

[26]Hansard HC Deb, 2 February 1819 vol. 39 cc 241.

[27]Report from the Secret Committee on the Expediency of the Bank Resuming Cash Payments, 1819.

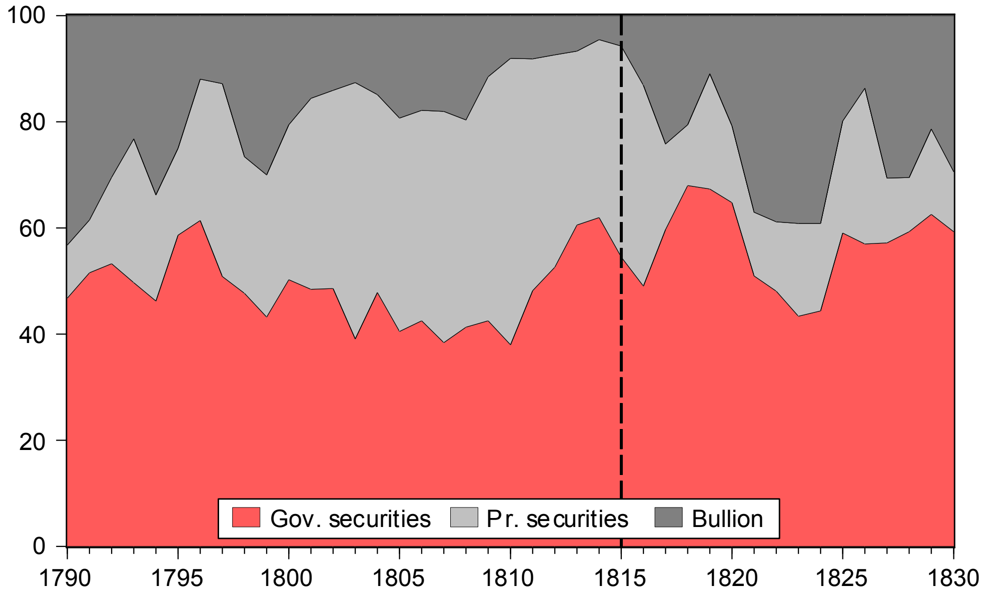

Figure 2: The Bank's Assets, percent of total, 1790-1830

The dashed line marks the definitive end of French Wars in 1815. Source: Mitchell 1988.

ing been reimbursed an important part of the sums advanced against Exchequer bills. The necessity of reimbursement before resumption was acknowledged in the Resumption Report.[28] This strategy would also allow to assess whether the changes induced by the war–increases in public debt, taxes, and prices and alterations in capital flows and commercial relations with the continent–were temporary or permanent.[29]

The suspension had been mostly profitable for the Bank. For the first years of the Restriction Period, the Bank's stock price moved in unison with the other prime securities of the period, the stock price of the East India Company and the price of public long-term debt (consols), shown in Figure 3.[30] Both companies had advanced money against

[28]Report from the Secret Committee on the Expediency of the Bank Resuming Cash Payments of 1819.

[29]Hansard HL Deb 21 May 1819 vol. 40 cc 600-604.

[30]Consols were a perpetual bond, for which holders received a 3 percent coupon. They formed the largest part of Britain's funded debt before WWI and were the benchmark instrument of British debt management over the period.

monopoly privileges and public bonds, which also formed the companies' capital. Public credit thus affected the companies' cash flows, but other business lines mattered as well for dividend payments (Philippovich 1911, pp. 80-96).

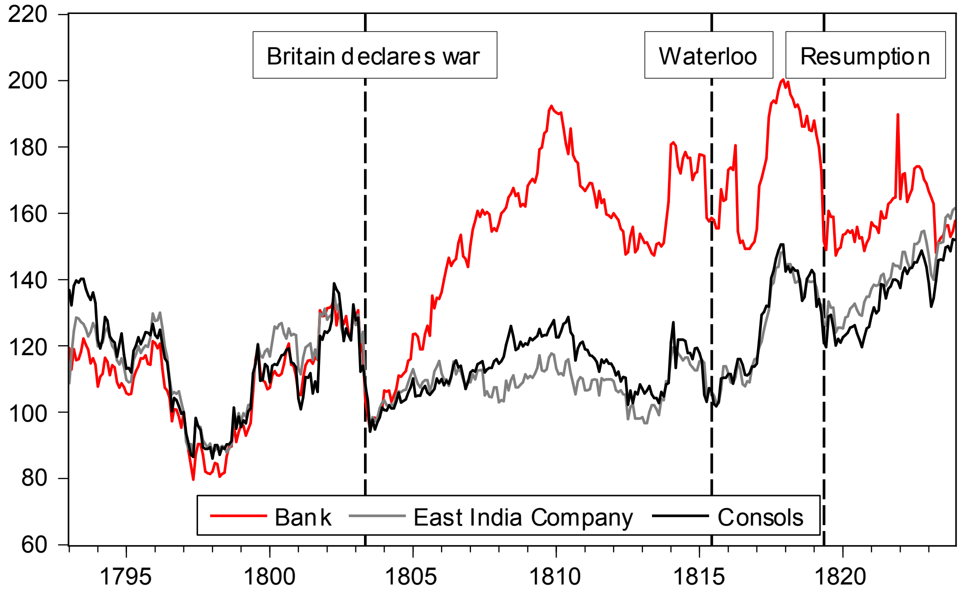

Figure 3: Bank and East India Company Stock and Consol Prices, 1793-1823, January 1797=100

Source: Neal 1990.

When hostilities resumed after the Peace of Amiens (March 1802 to May 1803), the Bank's stock price decoupled from the other two prices.[31] The Bank's business with the government seemed even less risky than the government's financial affairs. This partly had to do with the fact that the amount of Bank stock was fixed by its most recent charter, while the supply of consols changed with war-related spending shocks (Neal 1998). Dividends on Bank stock were increased in 1805 and 1806; in 1807, they reached ten percent, a level at which they remained until 1822 (Clapham 1944, vol. 1, p. 428). The price of Bank stock declined after the decision to resume cash payments in May 1819,

[31] The correlation coefficient between Bank and EIC stock fell from 0.96 to 0.53. The correlation between the Bank and consols declined by less–from 0.96 to 0.77–a finding echoed in Neal (1998).

but stayed roughly 40 percent higher than before the restriction.

The 1807 Finance Committee saw the increase in public deposits as the reason for the Bank's growing profits. "The extension either of loans to government, or of discounts to the merchants, or of both, is the necessary effect of the augmentation of the government deposits, and it is to the largeness of these deposits that the increased profits ought to be inferred."[32] The Bank had repeatedly and successfully insisted to manage public tax revenues and pay rolls (Knight 2013). Both had increased substantially during the war years, as can be seen in Figure 4. After the war, public deposits declined with the downsizing of the Army and Navy and the repeal of war taxes. The liabilities arising from deposits were considered safer as to sudden calls. The reshuffling of liabilities towards notes meant that the Bank's position had become riskier.[33]

The asset side of the Bank's balance sheet reflected its primary business lines only partly.[34] The Bank derived income from discounting assets of London banks and merchants. The Treasury remunerated the Bank for circulating public short-term debt and for managing public long-term debt. The circulation of bills entailed that the Bank advanced funds on the security of the malt and land taxes.[35] Thus, investors effectively purchased a share of what the government owed the Bank when acquiring Exchequer bills. In the long-term debt market, the Bank acted as the Treasury's registrar, managing the subscriptions to debt issues, transferring stocks between old and new holders, and paying due dividends.[36]

[32]Second Report of the Committee of Finance—The Bank of England, 1807.

[33]Report from the Committee of Secrecy on the Bank of England Charter, 1832; testimony of John Horsley Palmer.

[34]In the following, I exclude the Bank's income from its holdings in public long-term debt, i.e. its capital. The last capital increase intervened in 1816. Afterward, interest revenues from capital were stable and accounted for a one fourth of gross profits.

[35]Initially, circulating bills also meant that the Bank fixed the interest rate on them and that it guaranteed their convertibility into gold.

[36]The Bank was not an important holder of national debt. At the beginning of the French Wars in 1793, it held a little over five percent of outstanding debt. The rapid increase in debt during the wars meant that by 1815 the Bank's holdings represented less than two percent of the public debt overhang. This does, however, not imply that public debt holdings were not an important sources of income to the Bank.

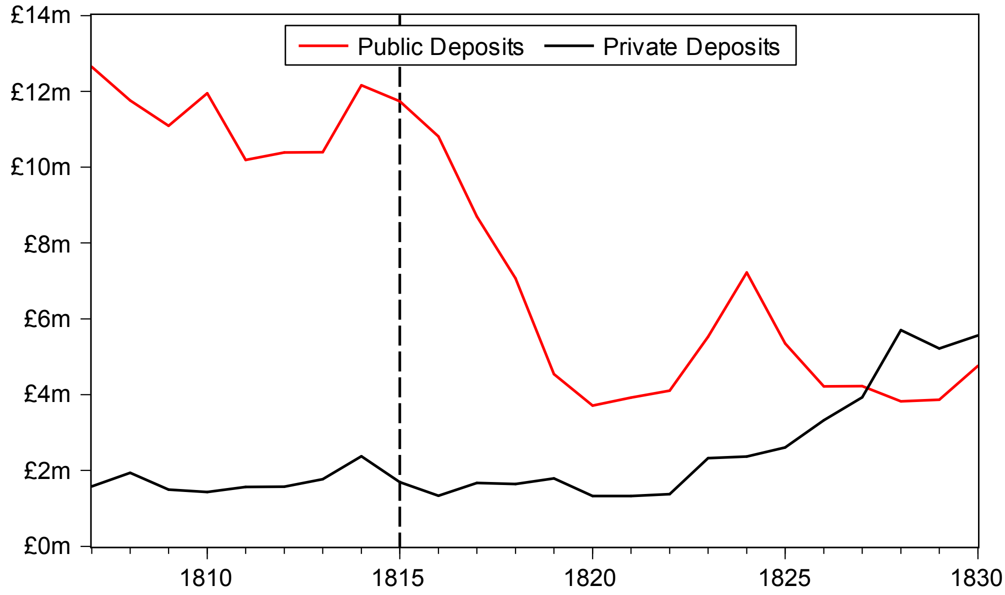

Figure 4: Evolution of Bank Deposits, 1807-1830

The dashed line marks the definitive end of French Wars in 1815. Sources: Report from the Committee of Secrecy on the Bank of England Charter, 1832

Figure 5 displays the Bank's gross income from discounts, debt management, and dealings in Exchequer bills. Private discounts peaked in 1810 when the Bank sustained the domestic payment system amid the bursting of the South American bubble (Clapham 1944, Flinn 1961). Record revenues in times of crisis were a natural corollary of lending of last resort interventions,[37] but induced political tensions (Flandreau 2007). At the time, the latter manifested in the Bullion Committee's intention to reduce the Bank's discretion.

Discounts and the income derived from them declined afterward. The Bank intervened massively in the market for Exchequer bills to keep yields low (Antipa and Chamley 2017). As the latter acted as a floor in the London money market, this created favorable financing conditions under which companies were able to easily discount with private

[37] Report from the Committee of Secrecy on the Bank of England Charter 1832; testimony of Horsley Palmer.

banks.[38] At the same time, the Bank kept its discount rate at the legal maximum of five percent between 1797 and 1822. The Bank did not compete with London banks for the business of discounting private assets (Clapham 1944).

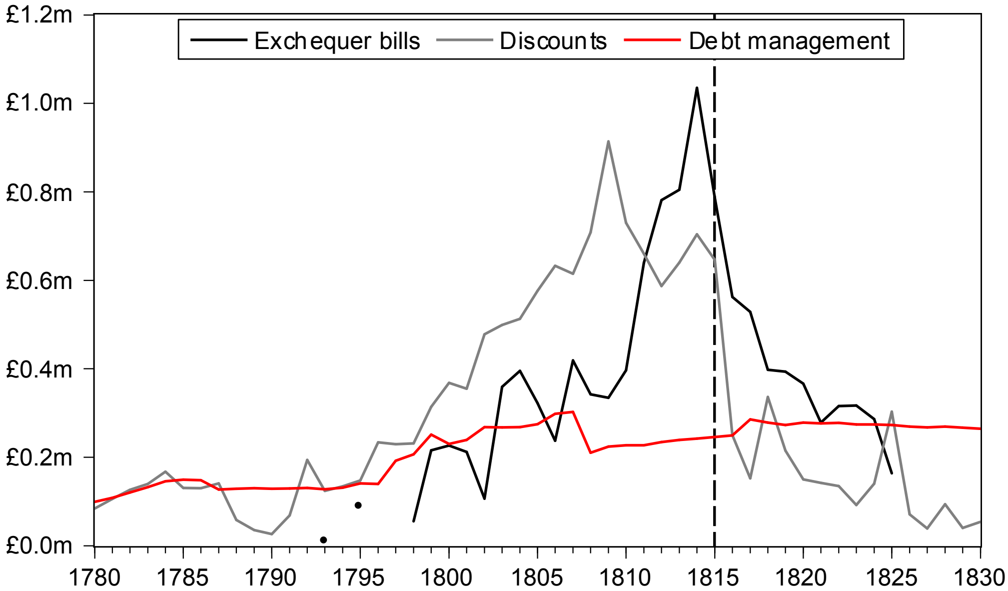

Figure 5: Bank Revenues from Discounts, Dealings in exchequer Bills and Debt Management, 1780-1830

The dashed line marks the definitive end of French Wars in 1815. Sources: Clapham 1944, Report of Public Income and Expenditure 1869.

When resumption was under discussion in 1819, income from debt management had already become a more important source of revenues. In the face of a public debt that stayed well above 100 percent of GDP into the 1850s, debt management remained a reliable source of income. Excluding the income from public long-term debt holdings, debt management was also the single most important source of revenue.[39]

[38]Report from the Secret Committee on the Expediency of the Bank Resuming Cash Payments, 1819; testimony of George Dorrien.

[39]Report from the Committee of Secrecy on the Bank of England Charter 1832.

Systematic evidence on what the Bank earned by dealing in Exchequer bills is harder to come by. The gains derived from this business line were netted out of balance sheet data.[40] Calculations based on hand-collected data and presented in Figure 5 have to be understood as an approximate lower bound (see appendix). The Bank's profits soared after 1810 with increasing purchases of Exchequer bills that served to finance the last and decisive phase of the wars. The Bank continued to purchase substantial amounts of bills until 1819. Its gains however declined as the Treasury gradually decreased the yearly interest rate it paid on bills from 5.3 percent in 1815 to 3 percent in 1818.

Table 1 presents the Bank's gross profits in 1831. Juxtaposing the above information and Table 1, it emerges that by 1819, the Bank's profits had already reached the level and partition that would prevail for the years to come. In the absence of a new war or a commercial crisis, the Bank had no reason to anticipate higher profits by maintaining the suspension of the gold standard.[41] On the contrary, maintaining the suspension would probably have meant absorbing large amounts of short-term debt, on which the Treasury paid ever declining interest rates.

The Bank used its discretion under the suspended gold standard primarily to finance Exchequer bills, i.e. public expenditures. At the same time, public deposits at the Bank dwindled, rendering the Bank's position riskier. The Bank's proposal would have alleviated this tension. With Exchequer bills being the counterpart to much of the Bank's note issue, reimbursement would have implied that the Bank regained control over its issue. This would increase the chances of resuming cash payments successfully. It also would have meant balancing public security holdings on the one hand and public deposits and outstanding notes on the other hand. This would have delivered a safer balance sheet.

If the Bank rendered so valuable a service to the public, why did the government turn on the Bank ? The relations between the Bank and the Treasury had deteriorated lately. In particular, for the first time since the beginning of the French Wars, the Bank had

[40] Bank of England Archive, item 10A28.

[41] The Bank's profits increased after the resumption, when it was forced to finance the so-called Deadweight Annuity (Clapham 1944, vol.2, p.88). The annuity funded military and naval pension liabilities and would ran for 45 years from 1823 on. It accounted for a fourth of the Bank's gross profits afterwards. In Table 1, it is included under the head of "long debt".

Table 1: Bank Profits, 1831

	Discounts	Debt management	Exchequer bills	Long debt	Other*	Total
£	130695	251896	204109	897917	204559	1689176
% Total	7.7	14.9	12.1	53.2	12.1	100
% Total excl. debt	16.5	31.8	25.8	-	25.9	100

** Other includes interest 1) on mortgaged loans, 2) on stock in the public funds, 3) on private loans, and profit on bullion and sundry items. Sources: Report from the Committee of Secrecy on the Bank of England Charter 1832.*

refused to cash Exchequer bills for the payment of dividends on long-term debt.[42] 1819 was also the first in 25 years during which public revenues covered expenditures, including debt service. Perhaps, this rendered a recalcitrant Bank less indispensable.

The government had been keen to postpone resumption in 1816 and 1818. In 1819, the Chancellor of the Exchequer (Nicolas Vansittart) and the Foreign Secretary and Leader of the House of Commons (Lord Castlereagh) were members of the resumption committee. Both voted in favor of the committee's proposal for resumption. For the rest, the government handpicked committee members and witnesses (Hilton 1977, pp.41-44).

Several MPs drew attention to the government's change of mind; many found the Treasury ungrateful.[43] On the upside, the division between the Bank and the Treasury tipped the balance of power in parliament's favor. "What confidence can be placed in the Bank Directors? I think that we have now the best possible security for their good conduct. Formerly, they acted in concert with his majesty's ministers and a majority of this House, now the ministry and the whole House are against the Bank Directors, and therefore we may confidently rely upon their compliance with our injunctions; [..] if they are refractory they may expect an abrogation of their charter, which no doubt will quicken their obedience."[44]

[42] Report from the Secret Committee on the Expediency of the Bank Resuming Cash Payments of 1819.

[43] Hansard HL Deb 21 May 1819 vol. 40 cc 628-629; Hansard HC Deb 25 May 1819 vol. 40 cc 764-766; Hansard HC Deb 25 May 1819 vol. 40 cc 774-777.

[44] Hansard HC Deb 25 May 1819 vol. 40 cc 787.

Resumption of the gold standard at the pound's pre-war parity was approved in both the Commons and the Lords without formal vote. "Peel's Act" was enacted 2 July 1819. A separate act imposed the repayment of £ 10 million of government short-term debt and forbade the Bank to lend to government for more than three months without express parliamentary approval.[45] The Bank was to be constrained in the discretion it had primarily used to meet the wants of the Treasury.

5 No Taxation without Representation

Severe social tensions erupted whenever Britain's fiscal system came under pressure. Under attack came a fiscal system that extracted higher taxes from working-class consumers than from landowners and that used the revenue to finance the military establishment, sinecurists, and rentiers living on income from government loans (Daunton 2001, p.18). People were discontented with the political process of tax collection and the purpose of public action. As consent with the fiscal constitution waned under the latter's weight, people called for a reform of the franchise–the ultimate lever over taxation.

The fiscal pressure caused by the American War of Independence had caused the calls for parliamentary reform in 1783.[46] The debate regarding the Bullion Report also fell into a period of intense political turmoil. The report had been completed by June 1810 but was only discussed a year later. In the meantime, parliament was preoccupied with handling numerous petitions regarding parliamentary reform and the scandals that had caused them.[47] The Chancellor of the Exchequer Perceval and other high profile members of the government had only recently been found to instigate the sale of parliamentary seats.[48] Even under public scrutiny, Perceval had amended a reform bill that sought to exclude the government from the market of seats in Parliament, safeguarding the influence of the crown.[49] These scandals aggravated the already widespread perception of

[45] 59 Geo. III, c. 76.

[46] Hansard 1814, p.826.

[47] George III was discharged of his royal functions due to mental illness beginning 1811. George, Prince of Wales, ruled as Prince Regent until he became King in 1820.

[48] Hansard HC Deb, 20 April 1809 vol. 14 cc 113-117 and HC Deb, 5 May 1809 vol. 14 cc 380-392.

[49] Hansard HC Deb, 7 June 1809 vol. 14 cc 924-928.

fiscal injustice.[50]

The months from January 1810 to July 1811 saw 17 petitions for parliamentary reform, compared to one or two petitions contesting the outcome of elections for preceding years. The leitmotiv of protest was "no taxation without representation". Petitioners emphasized the unequal distribution of the franchise. Inequity had a strong demographic and geographic dimension, since the formerly wealthy and populated South sent a disproportional number of MPs to the House of Commons. Old Sarum's 352 inhabitants and 10 odd voters were represented by Nicolas Vansittart between 1802 and 1812. Densely populated boroughs in London and the newly industrialized North were grossly underrepresented. According to the 1811 census, Manchester and Birmingham were approaching 100.000 inhabitants each but did not send MPs to London.

Moreover, the right to vote in Parliamentary elections or to become a member of parliament was linked to property rights. This meant only the affluent qualified. Registered voters over the period under consideration amounted to 1.5 percent of the total population. At the same time, denominations of public debt certificates were large enough to guarantee a large intersection between creditors of public debt on the one hand, and members of parliament and registered voters on the other hand (Johnston, 2013).

The House of Commons therefore took ruinous decisions. It engaged in unnecessary and unsuccessful warfare and taxation had reached the maximum the country could bear, a perception even politicians concurred with.[51] The rates for existing taxes had been increased and new taxes had been levied. Overall, 60 percent of the extra revenue needed to finance the wars was raised in taxes. This made the British one of the most heavily taxed people in Europe (O'Brien 1988).

Figure 6 presents the evolution in public incomes, differentiated by the source of revenue. Excises and stamp duties were imposed on domestically produced goods and services,

[50]Earlier in 1810, riots had broken out when Francis Burdett–MP for Westminster and proponent of parliamentary reform–was sent to the Tower for breach of privilege. The object of several petitions, he was released in July 1810.

[51]See for example Earl Grey's "State of the Nation" speech on 13 June 1810.

custom duties fell on imports, and property taxes were directly levied on manifestations of wealth and income. These sources of income mapped tolerably well into social categories. The affluent likely paid the bigger share of custom duties and exclusively discharged direct property taxes. Revenues from that last category of taxes increased after 1799 with the introduction of Britain's first income tax. The "repugnant" tax was repealed right after the war in 1816. The consumption patterns of the less wealthy were reflected in the evolutions of excise revenues. Given a very concentrated wealth distribution–the top five percent of adults held 85 percent of net worth in 1810–this made British taxation regressive (Lindert 1986).

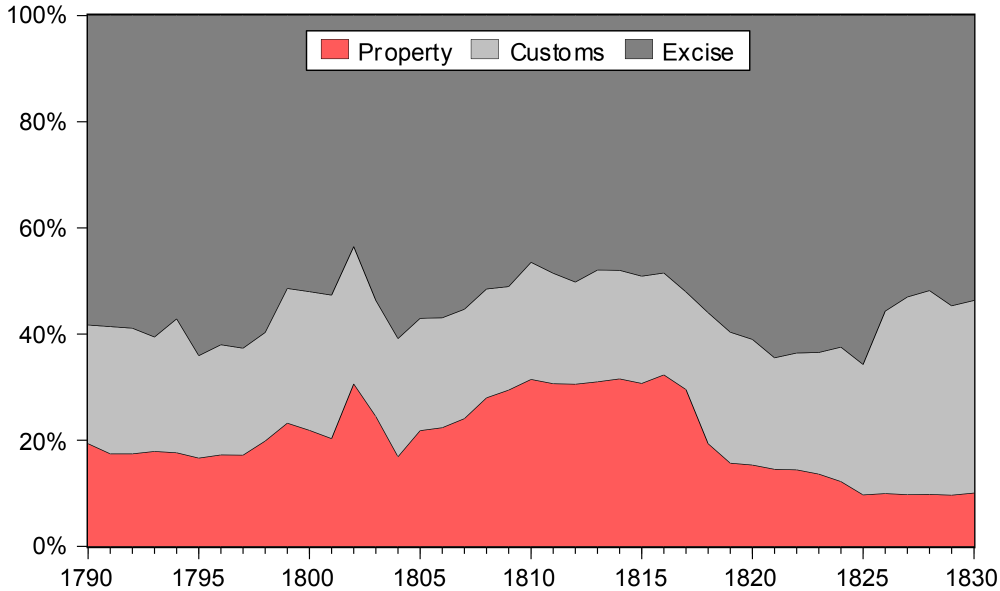

Figure 6: Public Revenues by Form of Taxation, in Percent, 1790-1830

Source: Mitchell 1988.

As shown in Figure 7, public expenditures consisted almost exclusively in military and debt charges. For the war years, military outlays accounted for the majority of expenditures. After the war, debt charges and related interest payments became preponderant. A debt-to-GDP ratio peaking at 260 percent in 1819 implied that this would remain the case into the 1850s. At no point in time during this period did civil charges exceed

10 percent. This system of public finance therefore implied a redistribution from not enfranchised taxpayers to wealthy public creditors and voters.

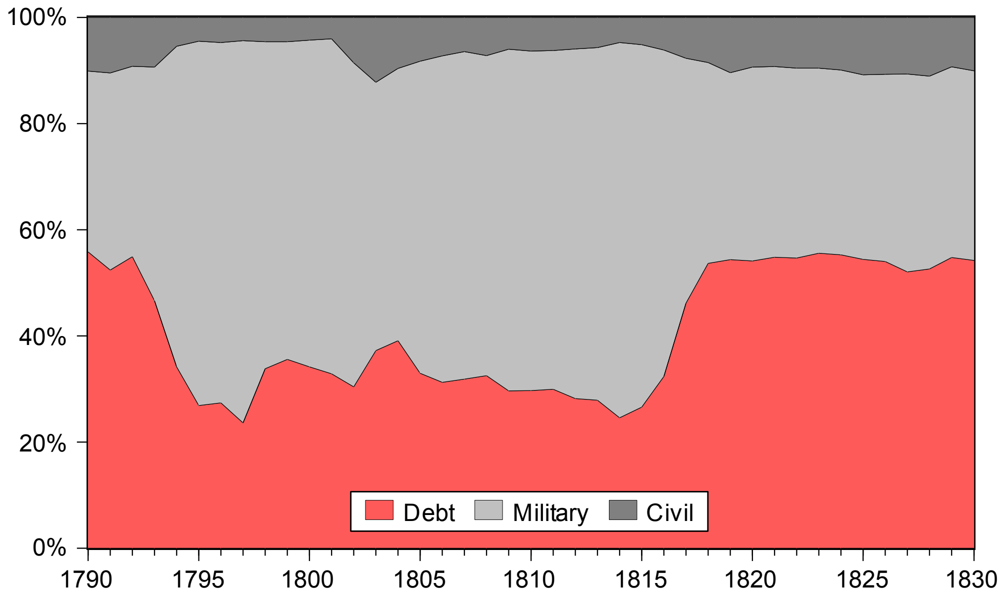

Figure 7: Public Expenditures by Head, in Percent, 1790-1830

Source: Mitchell 1988.

Carrot and Stick

The resumption of the gold standard again fell into a period of profound and widespread political turmoil. The consequences of deflation aggravated the already tense situation. Petitions against resumption and repressive legislation and in favor of parliamentary reform soared. Other–more riotous–manifestations of social discontent became widespread too.[52] Social tensions manifested dangerously after the French Wars. Violence and disorder were widespread and soldiers and sailors, "men with military experience and social grievance" posed a serious threat to the public order (Gash 1978). The pressure culminated in the Peterloo Massacre. In August 1819, protesters gathered in Manchester to

[52]Since 1811, the Luddite movement protested against working conditions in the textile industry by breaking labor-saving machinery. The harsh penal treatment of luddites halted the movement in 1817.

demand the right to elect MPs. Cavalry charged into a crowd of 60,000 to 80,000 people, killing eleven and leaving several hundreds injured.

In line with the geography of economic distress, calls for parliamentary reform and against the resumption of the gold standard were not confined to Manchester. They extended to Birmingham, Bristol, and Liverpool. Calls were pressing where economic hardship was particularly prevalent and the franchise was limited. When resumption was nonetheless decided, Atwood and the Birmingham School of Currency reformers came to support parliamentary reform as a means to further their overriding goal of currency reform.[53]

The government reacted with a mix of further repressive actions and poor relief.[54] A series of legislative measures, the so-called Six Acts, accelerated trials by reducing the opportunities for bail, increased penalties for seditious and blasphemous libel, imposed a stamp duty on periodicals containing news, forbade training of persons in the use of arms, empowered magistrates to search for and seize weapons, and hardened administrative requirements for meetings concerned with church or state. Figure 8 illustrates contemporaries' perception of the Six Acts.

Amid after-war depression and deflation, expenditures for parish poor relief escalated. These outlays now exceeded the central government's civil expenditures, causing concern among contemporaries. In order to alleviate the burdens on the public budget and to "enable the lower classes to provide for themselves", savings banks were institutionalized.[55]

The government guaranteed interest payments at 4.5 percent to the banks, when market

[53]The Birmingham Currency Reformers would contribute importantly to enacting parliamentary reform in 1832. Atwood was to represent the newly enfranchised Birmingham in the reformed Parliament (Briggs 1948, Miller 2012).

[54]Since 1817, the right of public meeting was restricted and petitions were banned. *Habeas corpus*–the principle ensuring that prisoners were released from unlawful detention–had been suspended again. In his introductory remarks, Home Secretary Lord Sidmouth had stated the addressees and purpose of the latter measure: "A very large proportion of them indeed had parliamentary reform in their mouths, but rebellion and revolution in their hearts" (Hansard HL Deb 24 February 1817 vol. 35 cc 554).

[55]Hansard HC Deb 5 February 1817 vol. 35 cc 225 and HC Deb 23 May 1817 vol. 36 cc 833-5.

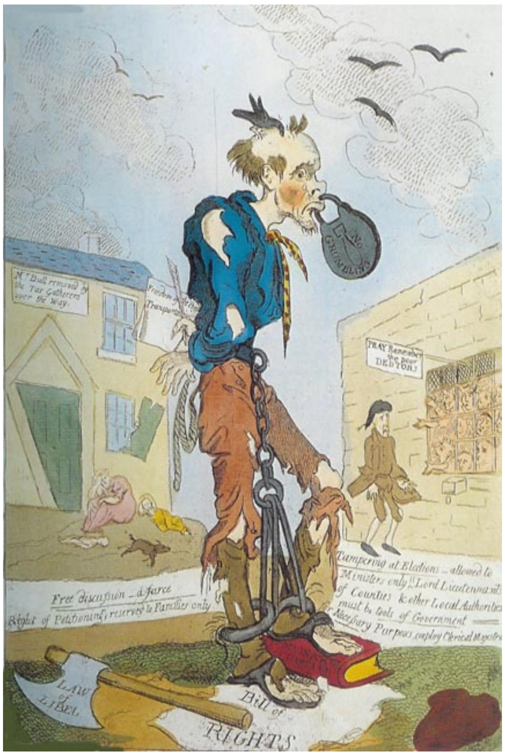

Figure 8: Contemporary Cartoon regarding the Six Acts, 1819

rates were declining with the end of the French Wars. Savings banks were thus popular: about 150 institutions were formed in the twelve months following their regularization in July 1817 (Horne 1947, p.78). The banks' success also manifested in the evolution of their deposits, shown in Figure 9. However, given the size of the war's debt overhang, the banks' holdings of public debt did in the first twenty years of their existence not represent a significant concern for public finances.[56]

While the provident poor were probably the most numerous of the early depositors, the savings of the middle classes constituted the major part of deposits (Fishlow 1961). Repeated legislative interventions aimed at confining the generous interest return to the working classes: yearly limits for the size of deposits were lowered in 1824 and 1828. Along with the deposit ceiling, the 1828 act also lowered the interest rate savers

[56]The above market return granted to savings banks was estimated to have cost the government £3/4 million (Scratchley 1860, p.128). This was equivalent to around five percent of deposits accumulated between 1817 and 1828, when the guaranteed return was lowered to 3.75 percent.

perceived.[57] Although none of the law's provisions were retroactive, they caused withdrawals.[58] For the first years of savings banks, it is a safe conjecture that deposits were large enough to not be held by the working classes. For the years after 1829, existing data corroborate that conjecture.[59]

As critics pointed out, for those on poor relief or hardly better off, there was no surplus beyond subsistence from which to save (Cobbett 1816, pp.291-2). But this was not a social measure. It created an outlet for small savings, where there had been none before.[60] As savers' deposits had to be invested in public debt certificates, the measure aligned the incentives of the middle classes with those of the traditional public creditors. "Ordinary people" gained for the first time an interest in the reimbursement of the public debt (Horne 1947, p.71).

The same impetus that sought to render citizens autonomous also manifested in the policies of fiscal retrenchment. Scaling down the "great tax eater" became a priority after the war. Slashing public expenditures however aggravated and prolonged the after-war depression, as Atwood and Malthus had predicted. The repeal of the income tax had rendered the tax system even more regressive, while interest on the war debt continued to be paid to those who contemporaries perceived as rentiers. The poverty and hardship still plaguing Britain stemmed from the bias in the tax system against the poor (Daunton 2001, pp. 47-57).

Substantial debt cancellations and interest rate reductions were undertaken in 1815, 1820, 1822, 1824, and 1830.[61] These operations did, however, not alleviate the burden

[57] 9 Geo. IV, c.92.

[58] Report by the Secretary and Comptroller General of the Proceedings of the Commissioners for the Reduction of the National Debt.

[59] In 1830, 2/3 of deposits exceeded annual earnings of a farm laborer (Lindert and Williamson 1983; Report by the Secretary and Comptroller General of the Proceedings of the Commissioners for the Reduction of the National Debt.)

[60] In 1819, yearly average salaries ranged from £39 for farm laborers to £219 for highly paid government officials (Lindert and Williamson 1983). Denominations of (public) debt certificates were usually multiples of £100. For the vast majority of contemporaries, they were therefore too large to be held individually.

[61] The interest rate on roughly 20 percent of outstanding debt was reduced from five to four percent

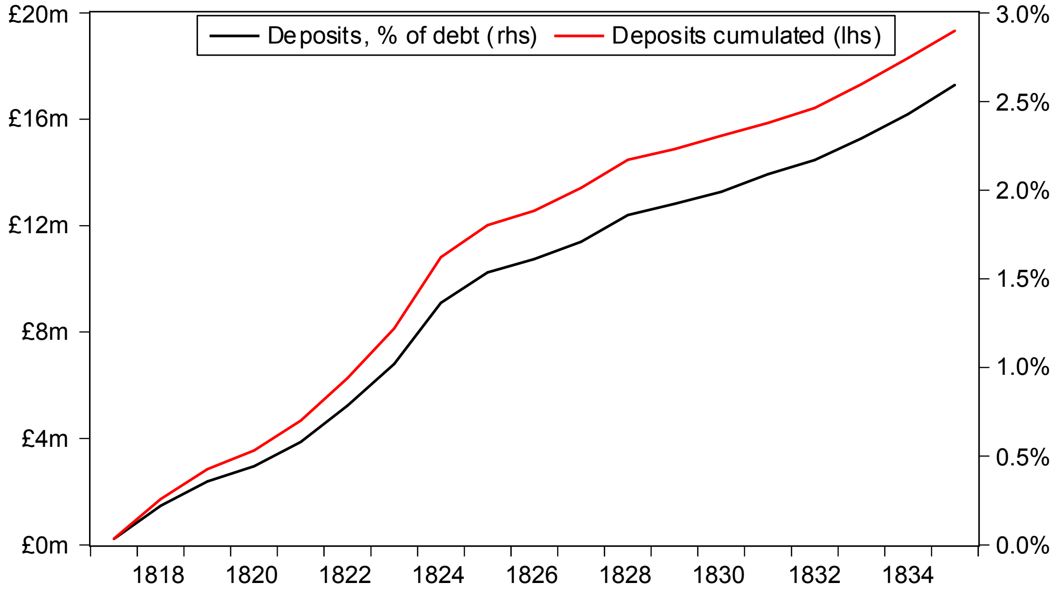

Figure 9: Savings Banks Deposits, 1817-1835

Sources: Report of Secretary and Comptroller-General of Proceedings of the Commissioners for the Reduction of the National Debt, 1890-91; author's calculations.

on taxpayers. As can be seen in Figure 10, the debt-to-GDP ratio increased by 5.6 percent between 1815 and 1832. Over the same period, the primary surplus accounted on average for 7.7 percent of GDP. Debt charges simply remained too substantial: as depicted in Figure 7, debt charges accounted for a good half of public expenditures over the next decade (and would stay that high for another decade). Moreover, the deflationary effects of cutting public expenditures and of returning to the gold standard thwarted growth and augmented the real value of debt.

Prices declined until the mid-1830s. They finally stabilized at the level they had hovered around during the decade before the war level, roughly 20% below their pre-suspension

in 1822. In 1824 and 1830, the interest rate was reduced from four to three and a half percent on ten and twenty percent of outstanding debt, respectively. Redeemed stock, equivalent to six and thirteen percent, was canceled in 1820 and 1822, respectively (Report of Secretary and Comptroller-General of Proceedings of the Commissioners for the Reduction of the National Debt, 1890-91).

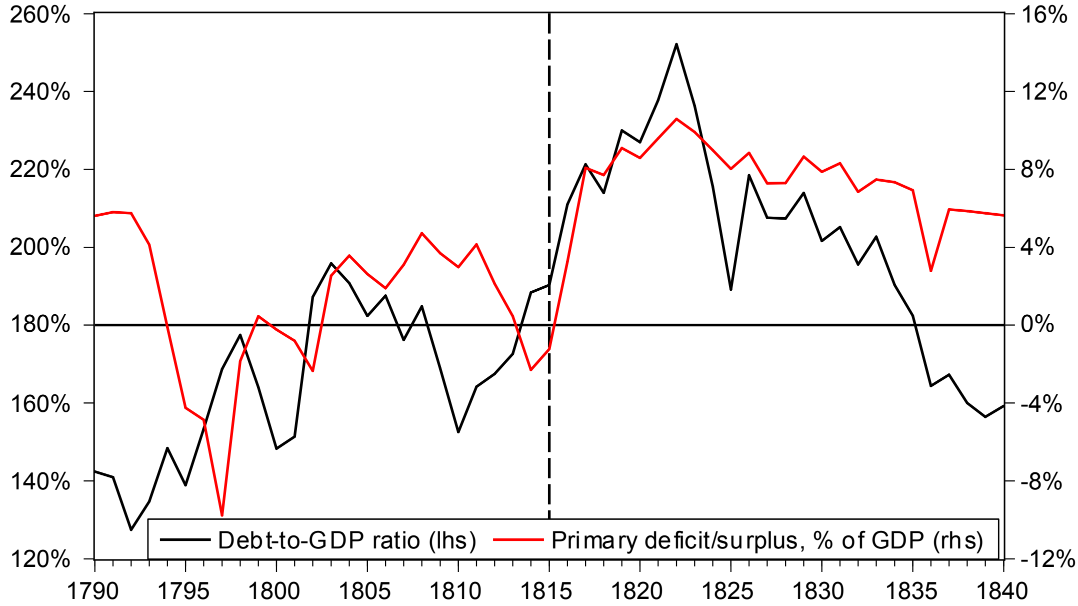

Figure 10: Evolutions in Britain's Debt and Primary Surplus, 1790-1840

The dashed line marks the definitive end of French Wars in 1815. Source: Mitchell 1988.

reading. Contemporaries anticipated adverse developments if resumption was adopted and this caused precautionary savings and faltering demand.[62] The internal revaluation the British economy suffered through thus resembled a textbook negative demand shock left unattended. Eventually, the economy returned to its potential output, but at a lower price level.

In the turmoil caused by the after-war depression and aggravated by the resumption of the gold standard, the government's strategy consisted in a broad array of repressive measures. The economic measures implemented were not aimed at alleviating the economic hardship caused by the transition from a war to a peace economy. Rather, fiscal retrenchment exacerbated the issues pertaining to lacking demand and became self-defeating to the extent that it slowed down the adjustment in outstanding debt.

[62]Hansard HC Deb 25 May 1819 vol. 40 cc 754.

6 Conclusion

I analyzed the policy choice of resuming the gold standard after the French Wars (1793-1815) in the face of an exceptionally high debt burden. Based on an extensive analysis of primary sources, such as *Verbatim* transcripts of parliamentary debates, parliamentary reports and hitherto unexploited data, I demonstrated that the choice was neither inevitable nor based on economic rationale.

The decision to resume the gold standard at the pre-war parity hinged on the identity of public creditors and the geographical distribution of economic hardship and political representation. Resuming the pre-war parity of the pound induced large scale deflation and recession. This outcome was politically feasible because the franchise was limited and political repression was comprehensive. Means and causes of the resumption were political.

The measure entailed adverse economic consequences. In a scenario that resembled a negative demand shock left left unattended, prices declined until the mid-1830s and stabilized roughly 20% below their pre-suspension reading. Resumption came also with a less efficient allocation of capital and higher real debt burdens for tax payers. Parts of the government acknowledged that resumption had been "a gross robbery on the public" and "the most extraordinary instance of rash, precipitate, and mischievous legislation, which the history of Parliament contained".[63]

My analysis informs the current policy choices between maintaining a fixed exchange rate and restructuring an outstanding debt overhang. The choice eventually boils down to who bears the costs of adjustment. And, fiscal retrenchment during an economic downturn is potentially self-defeating.

[63] For Thomas and Matthias Atwood's motions, see Hansard HC Deb 21 March 1833 vol 16 cc938 and Hansard HC Deb 22 April 1833 vol 17 cc384-462, respectively. Lord Althorp, leader of the House of Commons, professed the "gross robbery" to the then governor of the Bank, Richard Raikes (Raikes 1856, pp.171). "The worst piece of legislation ever" was coined by Robert Torrens, Whig MP for Bolton (Hansard HC Deb 24 April 1833 vol 17 cc542).

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A Appendix

A.1 Computation of Profits from Dealing in Exchequer Bills

Systematic evidence on what the Bank earned by dealing in Exchequer bills is not readily available, since these gains were netted out of balance sheet data. In order to obtain an approximation for these gross profits, I rely on hand-collected Bank balance sheet data regarding the Exchequer bills purchased and issued. These data are contained in the Report from the Secret Committee on the Expediency of the Bank Resuming Cash Payments of 1819 and item 3A12 in the Bank of England Archives and refer to stocks of bills held on the Bank's balance sheet. Without information on maturities and the amount of bills rolled over, the interest charge only the bills calculated is a rough estimate.

The Bank purchased bills when they could not be sold in the market at a premium. These bills were never resold to the market and the Bank earned the interest that the Treasury was willing to pay on them. In particular, during the war, holders of bills received 3.5 pence per day, which implied an approximate yearly interest rate of 5.3 percent. The Treasury lowered the interest rate to 4.6 percent in 1816, 3.8 percent in 1817, and 3 percent in 1818. These rates are applied to the amounts of Exchequer bills purchased by the Bank.

Bills were issued against future tax incomes and would eventually be sold to the market. Interest payments were passed on to the ultimate holders of bills. It is not clear how much the Bank billed for the involved administrative services. According to Phillipovich (1911, page 103) the Bank received 4.5 percent on bills issued. However, charges for the circulation of Exchequer bills are not mentioned in income and expenditure accounts after 1800. Given this uncertainty and because the amount of bills issued is broadly stable over the period, this business line is excluded from the computation of profits. Gross profits derived from dealings in Exchequer bills have therefore to be understood as a lower bound.