October 2006

# Maastricht: New and Old Rules*

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**Abstract**

Thanks to the Maastricht Treaty and similar arrangements, central banks nowadays enjoy considerable independence. This is generally believed to be the result of relatively recent debates, which led to the conclusion that sheltering monetary authorities from the pressures of fiscal policymakers is a prerequisite for monetary stability. However, in history this point has in fact been a recurrent tenet. We start with David Ricardo's arguments in favour of central bank independence and against monetisation of public deficits. After WWI, the latter issue was at the heart of the 1920 International Financial Conference of the League of Nations, which fostered and guided the establishment of many new central banks, and shaped various policymaking arrangements of today's monetary authorities.

JEL Codes: B12, B22, E42, E58, E61.

Keywords: Monetary stability, Fiscal rules, Central bank independence.

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* We thank Filippo Cesarano for help, suggestions and encouragement. We also wish to thank participants to the Conference "Perspectives on Monetary, Financial and Economic Integration", Indiana University, Bloomington, April 2006, and in particular Elmus Wicker, Eric Rasmusen, Juergen von Hagen, Michele Fratianni, George von Furstenberg and Manfred Neumann. Sara Zanetti and Roberto Casarin provided excellent research assistance.
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## 1. Introduction

Common wisdom holds that, in the end, the ERM-EMU arrangements did deliver macroeconomic stability. These arrangements limit any preferential access of governments to borrowing, thus providing important market discipline to budget policies. Strict budget rules and greater central bank independence, as enforced by 1992 Maastricht Treaty, were the other pillars of this remarkable success. The Treaty's main aim was to shield monetary policy from the direct pressure of governments. This is an issue of enduring importance to economists. The roots of the current institutional solutions are conventionally sought in the theoretical debate on economic policy design that started with the monetarist counterrevolution, the "unpleasant monetarist arithmetic" and the studies on dynamic inconsistency of the 1960s and mid-1970s. These strands of literature contributed to the establishment of a new paradigm of monetary policy by embedding money-supply considerations, inter-temporal optimization, and rational expectations into macroeconomics. Thanks to these innovations, we have today a much clearer understanding of the effects of monetary and fiscal policy decisions on the economy and of the way in which they interact with each other. It is widely believed now that only a policy framework that makes fiscal deficits extremely costly and enables monetary authorities to resist government pressures, can support price stability. Indeed, the role and functions of central banks are at the centre of a long-standing debate.

This paper shows that central bank independence and fiscal discipline were recognized as prerequisites for price stability much earlier than commonly acknowledged. First, we recall that fiscal discipline and central bank independence were closely intertwined with monetary stability in David Ricardo's thought. Second, we sum up the diagnoses and the recommendations of the 1920 Brussels Conference, which, within an international drive as in Maastricht case, led to the establishment of several new independent central banks in Europe. Third, we show that the macroeconomic contexts of the early XIX and XX centuries shared key features with that of the 1970s and 1980s. Slow growth, high and volatile inflation and the monetization of fiscal deficits were amongst those features. We argue that some of the arrangements that

nowadays characterize monetary policy design and implementation are the recurrent by-product of such combinations of macroeconomic problems[1].

The paper proceeds as follows. Section 2 recalls some features of the Maastricht Treaty. Section 3 focuses on some of the proposals made by Ricardo in his *Plan for the Establishment of a National Bank* (1824). Section 4 documents the main recommendations of the International Financial Conference organized by the League of Nations in 1920, and the statutory rules that were adopted for the newly established independent central banks. Section 5 draws the reader's attention to the macroeconomic similarities of Ricardo's times, the 1920s, and the 1970s and 1990s. Section 6 concludes.

## 2. Maastricht Rules

Three pillars define the policy framework of the Treaty of Maastricht (1992): price stability, central bank independence, and fiscal discipline. Article 105 states:

"The primary objective of the ESCB [European System of Central Banks] shall be to maintain price stability. Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Community."

As for central bank independence, article 107 reads:

"When exercising the powers and carrying out the tasks of duties conferred upon them by this Treaty and the Statute of the ECB, neither the ECB nor a national central bank, nor any member of their decision-making bodies shall seek or take instructions from Community institutions or bodies, from any government of a Member State or from any other body. The Community institutions and bodies and the government of the Member States undertake to respect this principle and not to seek to influence the members of the decision-making bodies of the ECB or of the national central banks in the performance of their tasks."

Furthermore, the Treaty forbids the monetization of public deficits and states severe limits on budget policies. To this effect, article 104 states:

"Overdraft facilities or any other type of credit facility with the ECB or with the central banks of the Member States in favour of Community institutions or bodies,

[1] Notice that we do not address here the issue of the direction of causation between central bank independence and monetary stability; nor do we deal with the ex-post effectiveness of the recurrent proposals and reforms. We only document the coming back of those concepts with particular macroeconomic contexts.

central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of member States shall be prohibited, as shall the purchase directly from them by the ECB or national central banks of debt instruments."

Article 104 supplements all this with the very same well-known severe limits on national deficits and debt/GDP ratios, which explicitly acknowledge fiscal discipline as a prerequisite for monetary stability[2].

## 3. David Ricardo

In various writings, David Ricardo maintains that monetary instability follows from the absence of fiscal discipline. Here we focus on his proposals of reform of the Bank of England, whose lack of independence he blamed for the monetary instability of his times.

The outbreak of the war between Britain and France in 1793 put mounting pressures on the specie reserves of both the Bank of England and the commercial banks. In early 1797, this prompted a run on the banking system. The Parliament, therefore, decided to suspend the specie convertibility of the Bank's notes. This move was reverted only in 1821, and the subsequent management by the Bank of England of an inconvertible currency sparked the lively debate about monetary theory and policy that is conventionally known as the "Bullionist Controversy".

Ricardo strongly favoured an independent National Bank. His articulate position was made explicit in the *Bullion Report* of 1810. There, Ricardo openly criticised the Bank of England for the support it had given to the financing of the war against France. The Bank had awarded sizeable loans to private citizens as well as to the government. This had caused a vast increase in bank notes circulation, which in turn had triggered a marked domestic and international depreciation of the pound. In Ricardo's view,

[2] More than a decade later (21 march 2005), the Governing Council of the ECB issued a statement that stands out for its assertiveness. The ECOFIN Council had made less binding the constraints on national fiscal policies embedded in the Treaty; the ECB's official reaction was the following: "(…) Sound fiscal policies and a monetary policy geared to price stability are fundamental for the success of Economic and Monetary Union. They are prerequisites for macroeconomic stability, growth and cohesion in the euro area. It is imperative that Member States, the European Commission and the Council of the European Union implement the revised framework in a rigorous and consistent manner conducive to prudent fiscal policies. More than ever, in the present circumstances, it is essential that all parties concerned fulfil their respective responsibilities. The public and the markets can trust that the Governing Council remains firmly committed to deliver on its mandate of maintaining price stability."

government's actions put monetary and financial stability in jeopardy via the central bank's lack of independence.

Indeed, Ricardo became convinced of the need to entrust money creation to independent officers in 1815, while working on his *Economical and Secure Currency*. In 1817, in his *Principles*, he laid out the basic ideas of a reform plan. In 1822, when the House of Commons discussed the renewal of the Bank of England Charter, Ricardo went back to the topic; two years later, and six months after David Ricardo's death, his brother Moses committed the manuscript of the *Plan for the Establishment of a National Bank* to the press.

The key proposal of Ricardo's *Plan* was to deprive the Bank of England of the power to issue paper currency, to have the government appoint five commissioners - within a newly established National Bank- and entrust them with the full and exclusive right to issue the country's paper money. His arguments for such an *ante litteram* policy-setting committee were particularly forceful in dispelling the potential doubts of the readers. In his words (pp. 282-84 of the reprint):

"It is said that Government could not be safely entrusted with the power of issuing paper money; that it would most certainly abuse it; and that, on any occasion when it was pressed for money to carry on a war, it would cease to pay coin, on demand, for its issues; and from that moment the currency would become a forced government paper. There would, I confess, be great danger of this, if Government --that is to say, the ministers- were themselves to be entrusted with the power of issuing paper money. But I propose to place this trust in the hands of Commissioners, not removable from their official situation but by a vote of one or both the Houses of parliament. I propose also to prevent all intercourse between these Commissioners and ministers, by forbidding every species of money transaction between them. The Commissioners should never, on any pretence, lend money to Government, nor be in the slightest degree under its control or influence. Over Commissioners so entirely independent of them, the ministers would have much less power than they now possess over the Bank of England. Experience shows how little this later body has been able to withstand the cajolings of ministers, and how frequently they have been induced to increase their advances on Exchequer bills and Treasury bills. … From a perusal of the correspondence between Government and the Bank, previous to the stoppage of bank

payments, in 1797, it will be seen that the Bank attributes the necessity of the measure … to the frequent and urgent demands for an increase of advances on the part of the Government. [On the basis of my plan], if the Government wanted money, it should be obliged to raise it in the legitimate way; by taxing people; by the issue and sale of exchequer bills, by funded loans, or by borrowing from any of the numerous banks which might exist in the country; but in no case should it be allowed to borrow from those, who have the power of creating money."

In essence, Ricardo's recommendations amounted to i) preventing the government from borrowing from bank note issuers, ii) severing any financial linkage between Commissioners and the executive, and iii) requiring a vote of the Parliament to unseat the Commissioners. Each of the above recommendations features prominently in today's policymaking discussions and designs[3].

An explicit consideration of the link between central bank independence and financial stability re-emerged with two events a century later. First, in 1920, the League of Nations organized an International Financial Conference to discuss remedies of post-WWI. Second, throughout that decade, various central banks of issue in Europe were set up or reformed and their statutes embodied the call for independence that had emerged from the International Conference[4].

## 4. The League of Nations

### 4.1. The Brussels Conference (1920)

The end of World War I was marked, notably in Europe, by economic and social turmoil. Its causes, along with therapies for its cure, sparked a lively debate also at institutional levels.

In February 1920, the Council of the League of Nations passed a Resolution calling for an "International Conference with a view of studying the financial crisis and looking for the means of remedying and mitigating the dangerous consequences arising

[3] This proposal, however, seemed motivated more by the need to preserve independence from the government than as an anticipation of modern accountability and communication requirements of central banks. In fact, only in more recent times will the latter truly emerge as a distinct issue in policymaking design, as all the remaining features of Ricardo's proposal.

[4] The Federal Reserve Act (1913) anticipated both events. However, the Fed enjoyed a limited amount of formal independence from the Treasury. WWI and its aftermath saw the dominance of wartime arrangements that obliged it to adopt an accommodative stance. Throughout the 1920s the Fed gained some leeway, which became permanent independence only after WWII (see Meltzer, 2003, for a detailed account).

from it." The Conference was held the following September and October in Brussels and saw the attendance of officials as well as the most prominent economists of the time[5]. We can find a detailed account of the debate in the proceedings of the Conference, which were published in the form of recommendations to the League's member states. Several of them concerned revenues and taxation, inflation, central banks, and international finance.

As a starting point, it was stated that fiscal adjustment was a pre-condition for the establishment of orderly economic and social conditions. We read:

"The first step is to bring public opinion in every country to realize the essential facts of the situation and particularly the need for re-establishing public finances on a sound basis as a preliminary to the execution of those social reforms which the world demands. …The country that accepts the policy of budget deficits is treading the slippery path which leads to general ruin; to escape from that path no sacrifice is too great."

Countries were to avoid large and persistent budget deficits, as they threatened economic stability; government budgets should be "as close to balance as possible". Furthermore,

"Where it is impossible to keep expenditure within the limits of existing revenue, fresh taxation must be imposed to meet the deficit, and this process must be ruthlessly continued until the revenue is at least sufficient to meet the full amount of the recurrent ordinary expenditure." In turn, this required that taxation fully covered spending.

As a second best, governments ought to make sure that taxation fully matched current spending, leaving only investment expenditures to be financed through borrowing, a striking anticipation of more recently devised "golden rules" of public finance, e.g. in the UK in 1998. Further, governments had to go for bonds rather than bank credit:

[5] The 86 participants to the Conference, while appointed by the 39 governments involved (they represented 75% of the world population), attended as experts and not as representatives of the official policy. The debates were organised around four sections: public finance, currency and exchange, international trade, and international credits.

"In future the loans which are required for urgent capital purposes must be met out of real savings of the people. But … the first step to raising money must be to fund the undigested floating obligations with which the markets are burdened."

The Recommendations defined inflation as i) an "artificial and unrestricted expansion of the currency [that] does not and cannot add to the total real purchasing power in existence, so that its effect must be to reduce the purchasing power of each unit of the currency", and ii) as "an unscientific and ill-adjusted method of taxation" that threatened economic and social stability. The causes of and remedies to the problem were starkly intertwined. The return to the gold standard would be a good step forward, but not the ultimate recipe for price stability. The participants in the Conference considered this option neither sufficient nor necessary, and were very concerned about the deflation that would have followed the resumption of convertibility. Thus, they recommended tackling the structural causes of the inflationary processes; and because the monetisation of budget deficits was to blame for the observed inflationary process, they forcefully stressed that the establishment or overhaul of central banks was a vital step. Governments facing huge deficits were tempted to resort to direct money creation or to borrowing from the central bank, which also meant loss of control on the money stock and an inflation spiral. Therefore, fiscal equilibrium and central bank independence came to be widely regarded as key steps in the pursuit of monetary stability and the stability of foreign exchange markets.

As far as fiscal policies were concerned, the approved guidelines were the following: i) cut current consumption expenditure and debt-servicing costs to a level compatible with current revenue; ii) severely reduce expenditure on armaments; iii) restrict all extraordinary "unproductive" expenditure; iv) "reduce even productive extraordinary expenditure to the lowest possible amount".

Then, the Report addressed the crucial institutional issue of the relationship between governments (fiscal authorities) and banks of issue. As banks were normally deemed unwilling or unable to resist political pressures for the monetisation of deficits, the Conference suggested setting up new banks of issue capable of resisting political pressures and refusing to monetize government debt, the stock of which should have started to decline soon.

The Conference's main recommendations were implemented in several countries, and surfaced in all major monetary and central bank reforms of the 1920s. In particular, the statutes of a number of newly created central banks, among them, the new Reichsbank, distinctly echoed some of the key normative guidelines of the Conference.

4.2. The new central banks

Money creation financed a large fraction of the public deficits generated by World War I. Several governments could even rely on multiple issuers of bank notes. This led to widespread and unprecedented devaluations, which triggered a re-thinking of the relationship between government spending, money creation, and price stability. This process inspired wide-ranging reforms, the most important of which was the overhaul or creation of national central banks. Under the auspices of the League of Nations, the Recommendations of the Brussels Conference became the blueprint for the establishment of new central banks of issue in Germany, Austria, Hungary, Greece, Spain, and other countries. In each case, the creation of the new central banks embodied the following guidelines that the participants in the Conference deemed as key to economic stability and efficiency:

1. Monetary stability became the primary goal of the central bank of issue: This translated into the adoption of rigid rules concerning money creation.
2. Price stability also required the central banks to be independent from the spending authorities: Formal arrangements regarding, for instance, the appointment of central bank chairmen and officers were to guarantee that independence.
3. To further strengthen the institutional independence, the new statutes banned any financial linkage between the bank and the government, such as direct lending to the state and state firms.

In what follows, we analyse the rules governing the new central banks of Germany, Austria, Hungary, Greece, and Spain. The adherence to the Brussels' recommendations and the similarities among different central banks turn out to be striking.

### 4.2.1. Germany’s Reichsbank

The country's military defeat was a fatal blow for Germany's currency. The hyperinflation of 1922-24 and the consequent disruption of real activity made the monetisation of government deficits and the independence of the central bank a hot issue. Amid the economic chaos, the Allied Reparations Committee asked Charles Dawes to study how to fix Germany's economy. As high and volatile inflation endangered investment and production, only the re-establishment of orderly monetary conditions, through a sweeping reform of monetary policy, could achieve such goal; and because the Reich had free access to Reichsbank credit, prominent figures called for severing that link and sheltering the central bank from government pressures. Thus, not surprisingly, the Dawes Plan called for the creation of a new central bank that might regain control over money creation and put an end to the recent mistakes[6].

In line with Brussels Recommendations, the new central bank was awarded full independence from the Reich. The old Reichsbank had been established as the Reich's largest bank of issue in 1875, soon after Germany's unification. The Reich's Chancellor was its chairman, while the government appointed the managers and controlled the distribution of the bank's profits. The Dawes Plan argued for the establishment of a new and independent central bank and led to the new law on central banking of 1924 [7].

Article 1 of the new law stated that the Reichsbank was independent from the government and that it had a mandate to manage money creation and stimulate economic recovery through money stability. This is a recurrent element in all the statutes of the newly created central banks[8]. The new law also required the Bank's Board to report regularly on monetary matters to the government. As to the appointment of the president of the bank, the Reich's President could only veto the first two proposals put forward by the General Council of the Bank, which was thus in charge of the appointment process.

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[6] The experts faced a complex situation. In Germany there were, apart from four private ones, three public banks of issue: the Reichsbank, which managed the issue of bank notes; the Rentenbank; the Golddiskontobank, which also held the power to issue bank notes in sterling. The experts' recommendations involved revoking Rentenbank's and Golddiskontobank's right to issue, and withdrawing within 10 years all the money they had issued. A special Committee of experts suggested the elimination of Golddiskontobank and the transformation of Rentenbank into a new department charged with the issue of bank notes within the Reichsbank, which in turn conducted monetary policy.

[7] What follows builds upon Wilmersdoerffer (1925).

[8] It is useful to remind that, according to article 12 of the 1875 law, the old Reichsbank was under the government's control and management. This was abolished in 1922, and the new law formally removed Reich's control on Reichsbank's Board.

The new law extended the Reichsbank's right to issue notes from a 10- to a 50-year period. Reichsbank notes were declared the only legal means of payment in Germany along with the Reich's gold coins and small change. Moreover, the law forbade the establishment of new private banks of issue, and set severe limits on the circulation of existing banks. The Bank was still obliged to provide the Reich with three-month loans of up to 100 million marks, but such loans had to be repaid by the year's end. The same applied to loans granted to the Railway and the Postal Service.

Thus, the new Reichsbank differed from the old one in several, fundamental aspects. In particular, the Board was no longer appointed by German politicians, but by the Bank's General Council, the members of which were appointed in part by stockholders and in part by foreign countries entitled to war reparations. This preserved the independence of the General Council from the German government. Finally, the law banned Reich's employees from taking part in the government.

Article 6 of the Bank law gave the Board full command over monetary and credit policies. One of the foreign members of the General Council was in charge of the full control of money creation. Many disliked such an arrangement, but in the end it was perceived as a precondition for the independence and credibility of the central bank.

The law stated that the Bank could choose between gold or foreign currencies when converting bank notes, and raised the gold coverage[9]. The rules that governed the loans to the Reich and other branches of government were also tightened. The Bank could not be creditor of the Reich, and the purchases of Reich's bonds on the secondary market should have been kept low.

Finally, as the Bank law was part of the overall agreements between the Reich and the Allied countries, it would have been impossible to change it unilaterally, especially with the aim of shifting the powers towards the government.

Overall, the new law fully abided by the Recommendations of the Brussels Conference. In particular, the independence of the Bank from Reich's government and the severe constraints on money creation made it impossible to monetise public deficits.

[9] Whereas most other European banks had to cover one third of their monetary base with gold, the Reichsbank law set a 40% floor -as in the Dutch and Italian cases- while permitting that up to a quarter of this amount comprised foreign currencies. In case of a sudden decrease of the coverage, the Reichsbank must have paid a fee between 3 and 8% per year, and during that period, the discount rate could not fall below 5%.

### 4.2.2. The National Banks of Austria and Hungary

In many respects, the Statutes of the National Banks of Austria and Hungary were the carbon copy of those of the Reichsbank. For instance, the Austrian law[10] stated that the Bank had the mandate to manage money creation and stimulate recovery through price stability. Furthermore, the Bank had to guarantee full convertibility of bank notes and was committed (Article 1) to the gold standard.

The General Assembly of the Bank comprised the Bank's shareholders; each of them could have up to 100 votes (or 2500 shares). The Council appointed a Chairman and two vice-Chairmen; the Federal Government could only approve or reject such appointments. Members of the National Federal Council or regional governments could not be appointed as members. The Government had to guarantee that the Bank abided by its Statutes. A special Commissioner was responsible for this; he could attend the meetings of the Bank's bodies, but only on a consultative basis and with no voting powers.

As to the critical issue of government funding, article 50 of the Statute, amended in 1927, asserted that the federal and local governments had no access to Bank's credit, unless in the form of back-up loans and up to a fixed nominal amount. The Bank could discount government bonds -again up to the same fixed ceiling.

The government had to safeguard the exclusive power of money creation of the Bank; this would turn to the Constitutional Court in case of violation. The Bank could refuse, with no formal motivation, to discount the federal government's securities[11].

Finally, as in the case of Reichsbank, a special commissioner was in charge of the Bank's overall supervision. His appointment was to be agreed with the general commissioner of the League; this put an additional layer of control on monetary policy.

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[10] A 1924 law that abolished the National Office of Emission of the Kingdom of Hungary and declared the privileges of the new central bank established the National Bank of Hungary. In essence, the law attributed to the Bank the exclusive right of bank notes creation. The process was severely scrutinized by the League of Nations and the Government was obliged to transmit to the League the new Bank law and Statute. As to the Statute, its formulation often literally coincides with that of the National Bank of Austria, confirming the impressive power of the League in shaping the new monetary arrangements in the 1920s.

[11] As to the limits to money creation, the National Bank had to build up reserves in precious metals big enough to allow the restart of gold payments. This had to take place as soon as a law will have fixed the gold value of the currency, and the debt of the Federation would have declined to a certain amount. The Statute next defined the ratio of metal reserves to fiduciary circulation plus sight liabilities: the law specified strict percentages (20%, 24%, and 28%) for the three 5-year periods following the establishment of the bank, adding that after such periods the ratio should have stood at 33%. If the circulation of bank notes violated any of these limits, this would have triggered a fine on the Bank, proportional to the discount rate plus a certain percentage, but never below 5%. Foreign currency could be part of the reserves.

### 4.2.3. The Banks of Greece and Spain

In September-December 1927, the National Bank of Greece ceased to operate and a new Bank of Greece was started. Similar to all the other banks we have examined so far, the Statute granted the Bank of Greece monopoly power over money and credit policies. The capital of the Bank was widely scattered among shareholders. Neither the State nor State firms could hold directly or indirectly more than 10% of the capital[12].

Any private shareholder could become manager of the Bank; on the other hand, members of the Government, State firms, as well Parliament, could not. The Chairman and vice-Chairman of the Bank were appointed by its General Assembly for a period of five years. The Bank's managers, aside from the directors, were appointed and removed by the Chairman based on proposals of the Management Board. As for the other central banks, the finance minister appointed a Government commissioner with the mandate to participate (with no voting rights) in the meetings of the General Assembly and the Management Board[13].

The Bank could not be held responsible or accountable by any special regulation of the Government or the State. It could not provide any funds to the State or State-owned firms; nor could it make advances on Treasury or any other State bonds. As in the other cases, the Bank could make special and temporary loans to the State in domestic currency, but only up to 10% of the total provision of the budget[14]. The Bank had to keep reserves equal to at least 40% of outstanding bank notes and sight liabilities.

The Statute of the Banco de España, attached to the "Ley de Ordenacion Bancaria" of 1921 stated that the Bank had the exclusive right to bank note creation. For several other key aspects of central bank activity, such as the circulation of bank notes,

[12] As in the other Statutes, in the case of Greece too the law specified the maximum number of votes to be held by a single shareholder.

[13] The Commissioner could not divulgate any information concerning the administration of the Bank, and State representatives could not examine the official books of the Bank. The minutes of the meetings of the Discount Committee were confidential.

[14] The Bank could reject the request of opening a current account or a deposit account, or force the closure of a previously opened account, without providing any motivation. Further conditions were attached: the anticipation would have never risen above a certain nominal amount --to discourage surprise depreciation- and the amounts due had to be repaid within the quarter following the fiscal year in which the anticipation was awarded.

reserve ratios, Treasury's accounts, the governance of the Bank, the rules were very much in line with those of the banks already examined.

## 5. Similarity of Macroeconomic Contexts

### 5.1. Ricardo

We turn to Mitchell (2003) to understand the macroeconomic background to Ricardo's reasoning. Ricardo's call for freeing monetary policy from government's commitments originated from his appraisal of the inflationary consequences of the monetization of public deficits. Figure 1 gives total government expenditure and wholesale prices for the United Kingdom[15] from 1790 to 1830. Not surprisingly, the two variables share a common trend, but in 1813-14, an apparent structural break occurred[16].

Although Ricardo could not avail himself of such data, this evidence confirms that the monetization of government deficits was a real and serious issue. One thing to note is that with the end of Napoleonic wars government spending first dropped considerably and then flattened out. Inflation depicted a similar path thanks to what we can now interpret as a sharp drop in money creation.

### 5.2. The 1920s

The generalized real and monetary malaise that followed World War I forced several governments to suspend convertibility and exit from the international gold standard. The worsening of the overall situation was so widespread and severe that it soon triggered political unrest. Calls for a reversion to real growth and monetary stability grew stronger. Many of them questioned the vicious relationship between the inconvertibility of bank notes, government deficits, and money creation.

Figures 2 and 3 plot government spending and tax revenue as ratios of GDP, nominal money supply, and the price level, for the United Kingdom and Italy, spanning 1900-1935[17]. The graphs convey the impression that the war generated sizeable deficits. The bottom charts show that the war years also mark a break in the medium-term

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[15] Great Britain up to 1800.

[16] The index of industrial production contained in Mitchell (2003) shows no fall around the same years.

[17] See the Data Appendix for definitions and sources of all data employed. Data available for France, Switzerland and Germany display similar trends.

behaviour of money supply and prices, with the latter displaying some mild reversion towards pre-war levels only after the 1921-22 stabilisation.

5.3. Maastricht

Figure 4 plots annual inflation (bottom panel) and the growth rates of broad money and Italian Treasury component of the monetary base[18] (top panel) for Italy over the pre-euro period 1961-1998. We notice that inflation in Italy essentially replicates the behaviour of the Treasury component of the money stock.

Only in the early 1990s did the Bank of Italy gain independence. Until then the Treasury had automatic access to Bank of Italy's credit for up to 14% of yearly deficits. The Treaty of Maastricht resulted from this kind of problems, which were also the problems that Ricardo and the League of Nations confronted.

## 6. Concluding Remarks

It is widely believed that the present high degrees of central bank independence are the product of relatively recent debates on monetary policy design. In fact, a central tenet of the modern theoretical literature on central banking is that sheltering monetary authorities from the pressures of fiscal policymakers is a prerequisite for monetary stability. This paper has shown that this tenet has deep historical roots. They go back to David Ricardo's quest for the independence of the central bank and criticism of the monetisation of public deficits; they resurfaced forcefully in the works of the 1920 International Financial Conference of the League of Nations, which shaped several newly established central banks; they simply returned with the modern Maastricht Treaty. This "coming back" is correlated with the return of heavy fiscal deficits, which trigger money growth, inflation and slow growth[19].

[18] This series was compiled by Fratianni and Spinelli (2001).

[19] Notice that the literature linking asset prices and credit/liquidity booms to financial imbalances (Borio and Lowe, 2004; Detken and Smets, 2004) builds upon concerns similar to those which we proved to be recurrent in history.

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**Data Appendix**

The budget deficit is the primary deficit as a proportion of GDP. The money stock is a broad money (M2-equivalent) series. The pre-1950 data were obtained from Flora (1983, 1987), Mitchell (1993, 2003) and Fratianni and Spinelli (2001).

## Charts

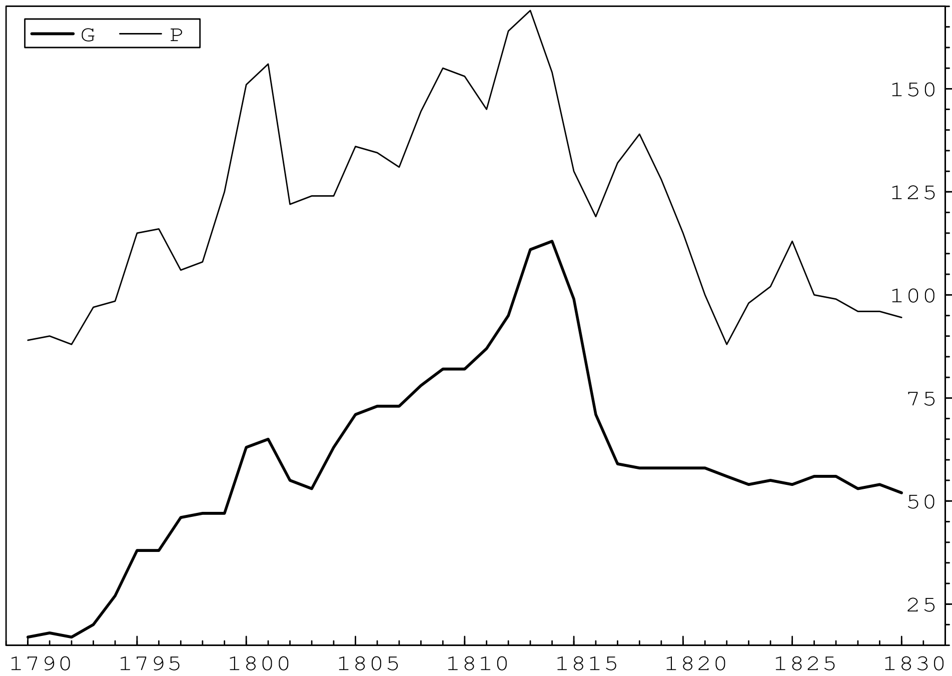


Figure 1, UK, 1790-1830. Total Government Expenditure and Wholesale Prices.

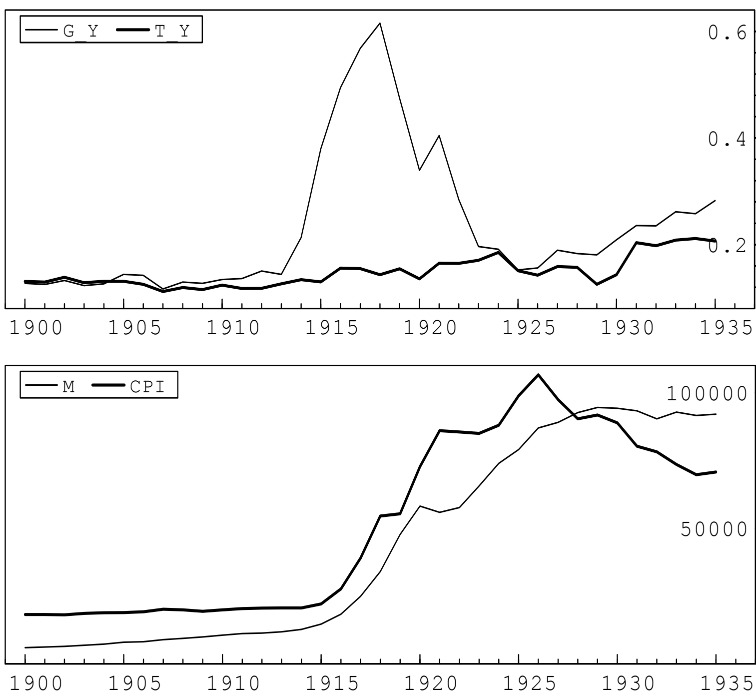


Figure 2, Italy, 1900-1935. Government spending and tax revenues as ratios of GDP (G_Y and T_Y, respectively), money supply (M), consumer prices (CPI).

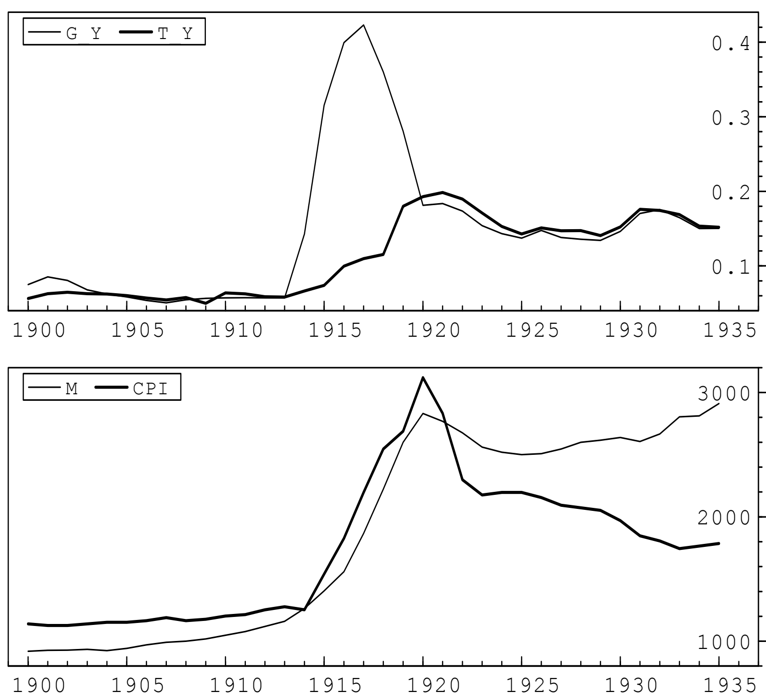


Figure 3, United Kingdom, 1900-1935. Government spending and tax revenues as ratios of GDP (G_Y and T_Y, respectively), money supply (M), consumer prices (CPI).

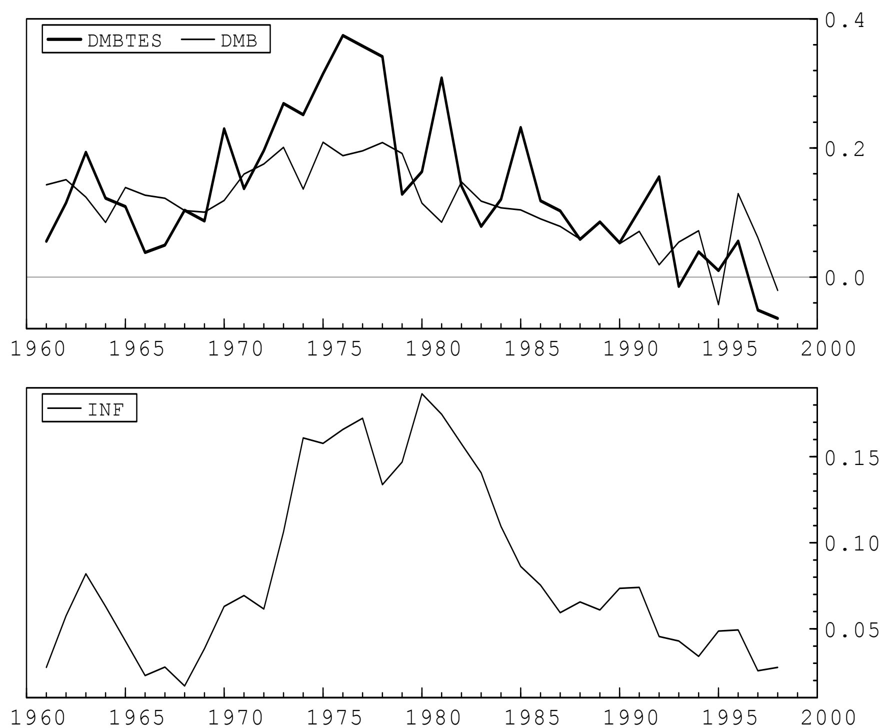


Figure 4, Italy, 1961-1998. Inflation (bottom) and growth rates of broad money and Treasury component of the monetary base (top).