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Floating against the Tide: Spanish Monetary Policy, 1870-1931

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The Gold Standard Peripheries

Monetary Policy, Adjustment and Flexibility in a Global Setting

Edited by

Anders Ögren

and

Lars Fredrik Øksendal

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in 1938 to 1.45 in 1940. Notwithstanding this decline, the total volume of money in circulation in Belgium continued to increase substantially during the years 1936–40, due to the impressive increase of base money.

Conclusion

Belgium, a country on the periphery in monetary matters, experienced turbulent years during the interwar period. From decades of monetary stability in a limping gold standard system under French leadership during the last quarter of the nineteenth century and the beginning of the twentieth, during World War I and the immediate postwar years, Belgium's monetary system became chaotic, without any leadership from another country. The situation changed when, in 1926, the Belgian government was able to stabilize the Belgian franc and to enter the system of the gold exchange standard under Anglo-American leadership. The sterling crisis of September 1931, however, disrupted the system, Belgium moving slowly into a gold bullion standard, without any clear monetary leadership. But the government took advantage of the new situation to reinforce the monetary and credit functions of the National Bank, enhancing the public character of the institution and turning it definitively into a modern central bank.

References

- Buyst, E., Maes, I., Pluym, W. and Danneel, M. (2005) *The Bank, the Franc and the Euro. A History of the National Bank of Belgium*. Tiel: Lannoo.
- De Strycker, C. (1939) *Les fonctions et les opérations de la Banque Nationale de Belgique de 1914 à 1939*. Brussels.
- Eichengreen, B. (1992) *Golden Fetters: The Gold Standard and the Great Depression (1919–1939)*. New York.
- Feinstein, C.H. (ed.) (1995) *Banking, Currency and Finance in Europe between the Wars*. Oxford.
- Henau, B. (1995) *Paul van Zeeland en het monetaire, sociaal-economische en Europese beleid van België (1920–1960)*. Brussels.
- Janssens, V. (1976) *Le franc belge: un siècle et demi d'histoire monétaire*. Brussels.
- Kurgan-van Hentenrijk, G. (2001) 'The Banque Nationale de Belgique and the Belgian Economy during the XXth Century', *Journal of European Economic History*, special issue: *Financial systems in Europe in the 20th Century*: 45–85.
- Van der Wee, H. and Tavernier, K. (1975) *La Banque Nationale de Belgique et l'histoire monétaire entre les deux guerres mondiales*. Brussels.
- Van der Wee, H. and Verbreyt, M. (1997) *La Générale de Banque, (1822–1997): un défi permanent*. Brussels.

8

Floating against the Tide: Spanish Monetary Policy, 1870–1931

*Pablo Martín-Aceña, Elena Martínez-Ruiz and
Pilar Nogues-Marco*

The gold standard is not the monolithic metallic monetary system that it was once believed to be. Country cases and detailed studies of the actual workings of the system have shown that the gold standard was not a rigid mechanism for adjustment to external disequilibria, and that it enabled core and peripheral nations to tailor it to their needs. Exchange rate stability was achieved by various means. Some countries followed the so-called 'rules of the game', while others systematically evaded the rules and resorted to a variety of methods to keep the price of their currencies fixed against gold. Moreover, gold coins were a major part of the money in circulation in some countries, while gold did not circulate at all in others. Gold convertibility was usual in the core countries but, to a certain extent, specie convertibility was the exception in peripheral nations. As has recently been stressed, a re-conceptualization of the gold standard system has brought to the fore its reputational aspects and its status as a 'contingent rule', instead of the traditional approach, which focused on adherence to strict patterns of behaviour and well-defined rules. According to the new approach, the monetary policies that were followed in the short term mattered little, provided that in the long term a country was fully committed to the regime and that the financial community believed this to be true.¹ We also know now that countries' monetary authorities' commitment to a fixed exchange rate regime (in the form of target zones) did not lead to them entirely relinquishing their monetary independence, as long as agents considered the countries' commitment to be credible. In consequence, as long as economic agents considered a country's commitment to gold as credible, the country could violate the rules of the game in the short term to further other policy goals. Moreover, evidence shows that the objectives of central banks under the gold standard regime was not

simply convertibility and the stability of the exchange rate but, rather, a combination of goals, including profit maximization, just as with any other private financial institution.²

The gold standard began to emerge as a universal monetary system in the late 1870s, and it had spread throughout the world economy by 1900.³ It was unusual for nations to be off the gold standard, and it meant that they were detached from the international financial community. World War I led to the complete breakdown of the gold standard. Exchange controls were introduced almost universally (with the sole exception of the US), international flows of capital were interrupted, and world trade collapsed. The Armistice of November 1918 did not lead to the immediate restoration of the gold standard. The war was followed by a serious and protracted economic and financial crisis, and all the European currencies experienced wild fluctuations, which were particularly acute in the nations of the central empires (Germany and its allies). Although currency stabilizations began in 1923/24 under the auspices of the League of Nations, the reintroduction of the gold standard was marked by the British pound sterling's return to gold at its prewar parity in 1925. By the end of 1929, when the New York Stock Exchange crash ushered in the Great Depression, most European currencies were once again linked to gold.⁴

Spain did not join the gold standard club in any of its versions, either before or after 1914. Unlike the vast majority of the European currencies, the peseta's exchange rate fluctuated (sometimes widely) against gold and gold currencies.⁵ Gold convertibility was suspended in 1883 and never resumed. Nevertheless, the monetary authorities were aware that the Spanish economy, off the gold standard, was an outlier in the international economy and made plans to put the peseta on gold both before and after 1914. No matter how forcefully they were pursued, all attempts ultimately failed because policy measures were not always consistent with this goal. Neither the Treasury nor the Bank of Spain was prepared to take the necessary measures to choose an appropriate par and to make the commitment to maintaining it. The Ministry of Finance was unable to balance the budget and to follow an orthodox fiscal policy along the lines required to keep the exchange rate stable. Meanwhile, the minutes of the board of directors of the Bank of Spain show that its private interests (i.e. paying high dividends to its shareholders) always prevailed over the public interest (a stable peseta). One conclusion of this chapter is precisely that: the adoption of the gold standard was a mere 'wish' but, ultimately, the actual monetary and fiscal policies were not oriented towards that goal, or at least they were not pursued with sufficient conviction.

The monetary experience of Spain, which was until very recently a poor and peripheral country, may be of interest for several reasons. First, it is the only European country in which the gold standard was never implemented, despite the fact that the monetary authorities repeatedly declared their intention to peg the peseta's exchange rate to gold. Why Spain never adopted the gold standard is a complex issue, and our chapter offers a possible answer by examining the behaviour of an issuing bank that refused to accept, or resisted, its role as a central bank. Our study also provides a basis for a comparison between the Bank of Spain, some of its features and policies, with other peripheral issuing institutions. Moreover, our chapter encompasses both the prewar and the postwar periods, which allows us to present both the similarities and the differences in the exchange and monetary policies of the Spanish authorities during the era of the classical gold standard and the years of the gold exchange standard.

We have chosen to focus our analysis on the policy and behaviour of the Bank of Spain, which enjoyed the monopoly of issue for the entire country from 1874 on.⁶ The remainder of this chapter is divided into four sections. In the first section, we provide a brief outline of the main constraints and determining factors in the Bank's policies. The second section is devoted to examining the Bank's behaviour during the classical gold standard period. A similar analysis for the interwar period is conducted in the third section. The paper concludes with a final section, which is both brief and speculative.

Capital mobility, fiscal deficits and the balance of payments

Members of the gold standard club are supposed to behave appropriately in order to maintain the stability of the exchange rate, and the convertibility of its currency into gold. They must allow capital to move freely (i.e. they cannot raise barriers to the exportation and importation of gold); and they must avoid persistent imbalances in the country's government budget and in the current account balance of payments.

Capital mobility was the rule before 1914. Foreign investment flowed unimpeded into the country. Likewise, foreign investors could repatriate interests and dividends as often as they wished and without any obstacles. Gold inflows and outflows were not controlled or subject to any type of official intervention.⁷ Railways, banks and industrial firms could borrow freely on the international markets, and the government floated bonds in the London and Paris stock exchanges, provided that

guarantees of repayment were given. One of the key features of the workings of the gold standard was thus in place. The experience with capital mobility during the interwar years was more complex. Mild and partial exchange controls were introduced as early as 1919 to contain the depreciation of the peseta. The systematic administrative intervention on the exchange market began in 1928 and intensified during the following years, and Spain was one of the first countries to introduce a formal exchange control apparatus.⁸ Capital mobility was not then a feature of the period, but was also not part of the international economy. However, this did not prevent many countries from adhering to the so-called gold exchange standard.

With the exception of one year, the Spanish budget closed with significant deficits between 1874 and 1898, which were particularly large at the end of the century due to the extraordinary expenditure required by the colonial wars in Cuba, Puerto Rico and the Philippines. The outstanding public debt tripled as a consequence, and part of it found its way into the portfolio of the Bank of Spain, contributing to the increase in the amount of high-powered money. The monetization of the debt thus led to an increase in the quantity of money in circulation slightly over GDP, which made Spanish prices diverge from the relentless decline in international prices. After 1900, fiscal reform and a drastic conversion of the debt turned the government accounts around, and the budget ended with surpluses for nine years in a row. Thereafter, the deficit made a return and new debt issues were necessary. The Treasury went to the Bank and to the market but eventually most of the securities were monetized. Had the Bank of Spain attempted to follow an independent monetary policy during those years, it would have come into conflict with the Treasury and its financial needs. The budget deficit persisted during the 1920s and 1930s, although the Ministry of Finance introduced reforms to increase revenues and measures to curtail spending. These were insufficient to balance the annual budgets.⁹ It can therefore be argued that public finance (i.e. the government's inability or unwillingness to eliminate the deficit) may have been one of the impediments to adopting the gold standard. Exchange rate stability was certainly an official goal, but actual fiscal policy was inconsistent with such a goal. Nevertheless, the reverse argument is also plausible and has to be explored. Adherence to the gold standard required fiscal discipline, at least in the long term. If the Spanish monetary authorities had committed to the gold standard, they would have been forced to rationalize spending and, above all, to reform and modernize the fiscal structure. Moreover, a well-behaved Treasury would

have been in a better position to impose its will (exchange rate stability) upon a Bank of Spain with a franchise as sole issuer that depended on the government. Faced with the alternative of losing its privilege or contributing to the maintenance of the gold standard and the gold convertibility of the peseta, it is probable that the Bank would have preferred the latter, and its transformation into a genuine central bank would have occurred earlier.

External imbalance is another possible reason for Spain's unusual monetary experience.¹⁰ Until the mid-1880s, the persistent current account deficits in the balance of payments were amply covered by capital inflows that were channelled into railways and banking companies, as well as into government bonds. The stream of foreign investment ended in the 1880s and the current account ran a surplus until 1898. The trade deficit returned thereafter, but so did foreign capital. The current account closed with increasingly large surpluses from 1905 onwards. As Spain was a neutral country, the war years fostered exports and limited imports, and the balance of payments ended with large surpluses as a result. However, during the interwar period the external balance was reversed. In the 1920s, the trade deficits were huge, and the balance of payments was also negative in the 1930s, despite the adoption of strict exchange controls.

The balance of payments results over these six decades do not lend themselves to an easy interpretation as regards the question of the gold standard and its long-term sustainability. Our view is that, contrary to some arguments, the balance of payments was not a constraint on the choice of monetary regime, if only because when deficits occurred they amounted to a relatively small percentage of GDP. Furthermore, a credible commitment to the gold standard would have certainly improved access to the global capital market and reduced transaction costs with other gold standard nations. Periods of balance of payments difficulties would have mattered less or not at all because the current account deficits would have been settled with capital inflows. In fact, given the historical experience during the prewar era, when funds from London, Paris and Berlin financed world trade and covered current account imbalances, there is no reason to suppose that Spain would have not received as much capital as it needed to compensate any deficit, whether external or internal. The interwar era admittedly poses more problems but the argument is still valid, since we know that peripheral countries on the gold standard in Europe and elsewhere were able to obtain capital in New York until at least 1929.

The monetary policy of the Bank of Spain during the classical gold standard, 1874–1913

Spain never adopted the gold standard. The country retained a bimetallic monetary system until 1883, at which point the peseta's gold convertibility was suspended and the exchange rate shifted to a floating regime within an international context of the gold standard.¹¹ Figure 8.1 shows the rate of the peseta against the pound sterling and the French franc, which were considered benchmark currencies at the time. The developments in this respect fall into three periods. During the first period, until the early 1890s, Spain maintained the price of the peseta within a narrow range by controlling the monetary aggregates. In the second period, from the early 1890s onwards, when the peseta depreciated considerably due to an excess of issue, there was an exchange rate crisis in 1898 due to the excessive monetization of the public deficit due to the financing of the colonial wars. In the third period, after the loss of the last colonies in 1898, the peseta appreciated because economic policymakers strove to correct the increase in the money supply caused by the excessive budget deficit.

Despite being off the gold standard system, Spain always maintained a political interest in joining the gold standard monetary system.¹² In this section, we examine the monetary policy adopted by the Bank of Spain during the era of the classical gold standard. Our objective is to analyze

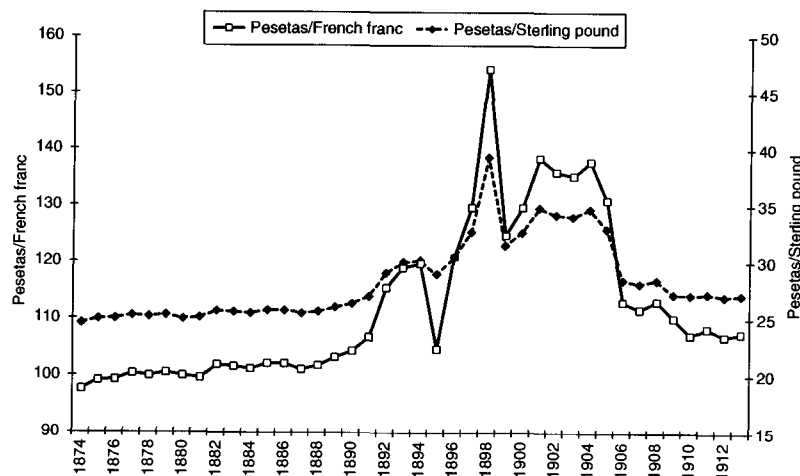


Figure 8.1 Nominal exchange rate, 1874–1913

Source: Martín-Aceña and Pons (2005): 704.

whether the Bank of Spain's monetary policy was oriented towards the objective of joining the gold standard, or if its policy was based on goals other than the gold standard.

The traditional literature defined the monetary policy that central banks had to follow to sustain the gold standard as 'the rules of the game'. These rules forced central banks to implement a restrictive monetary policy when the country was losing gold and an expansionary monetary policy when the country was accumulating gold in order to restore equilibrium in the balance of payments.¹³ Compliance with the rules of the game was measured by two indicators. The first indicator was based on the relationship between the change in reserves (non-earning international assets) and the change in domestic income-generating assets. If the country began to lose gold, the central bank had to sell bonds from its portfolio for cash, reducing the money supply and therefore restricting the outflow of gold. Both the reserves and the domestic income-generating assets were reduced as a result, and a positive correlation between the changes in two variables showed that the central bank was following the rules of the game. The second indicator was based on the relationship between the change in the interest rate and the change in the reserve ratio (reserves divided by sight liabilities, notes plus deposits). The central bank had to raise the interest rate to reduce the money supply when it was losing reserves, and lower the interest rate to increase the money supply when it was gaining reserves. A negative correlation between the rates of change in the interest rate and the reserve ratio therefore shows that the central bank was following the rules of the game.

Spain did not follow the rules of the game in the classical gold standard era of 1880–1914.¹⁴ The annual variation in the Bank of Spain's domestic income-generating assets and reserves presents a negative correlation for more than 40 per cent of this period. In addition, there was no systematic negative correlation between changes in the interest rate and the reserve ratio. The Bank of Spain's interest rate underwent a few changes throughout the entire classical gold standard period, and there was only a negative correlation between changes in the interest rate and the reserve ratio in the early 1880s (1879–84) and in the late 1890s (1896–1903), when the reserve ratio fell significantly, which threatened convertibility and in fact led the Bank of Spain to cease converting its notes into gold in 1883.

However, these results are not surprising. Bloomfield (1959) tested the rules of the game followed by the countries belonging to the gold standard monetary system and found that central banks did not follow the rules of the game but enjoyed uninterrupted convertibility.¹⁵ The reason for this is that central banks did not implement monetary policy based on the

balance of payments as required by the rules of the game, but instead used the rule of convertibility as a *de facto* monetary target (i.e. a fixed exchange rate sustained by interventionist policies in the market).¹⁶ The classical gold standard was an exchange rate band, in which exchange rate movements were limited by the gold points.¹⁷ The central banks guaranteed convertibility by applying exchange rate policies to maintain exchange rates within the gold band. The most common policy of intervention followed by central banks was the sale of gold against their own notes in the domestic bullion market, which enabled them to stabilize the exchange rate and enjoy discretion in monetary policy at the same time. Interest rates did not react to the loss of reserves when the exchange rate was strong, only doing so when the exchange rate was weak and convertibility threatened.

Some peripheral countries, such as Portugal, which had a small domestic bullion market, applied exchange policies based on importing gold and exchange rate manipulation to maintain the changes within the gold band.¹⁸ Others, such as Sweden, adopted passive policies to defend convertibility. The central banks in the gold standard system were required, on demand, to convert their notes into metallic coins – gold coins in the gold standard system. The convertibility of notes into gold stabilized the exchange rate because, if the exchange rate went beyond the gold points, the arbitration process would readjust the exchange rate as long as the Bank had enough reserves to change its notes until the exchange rate was restored. This passive defence of convertibility required a high reserve ratio, which ranged from 50 per cent to 100 per cent in the case of Sweden. The Riksbank strangled domestic credit, keeping interest rates high to protect the specie standard.¹⁹ The monetary policy applied by the Bank of Spain after inconvertibility became a matter of fact in the early 1880s was also adopted as passive policy defence based on a high reserve ratio. The higher the reserve ratio, the greater the credibility the Bank enjoyed.²⁰

The guarantee of convertibility was legally regulated by the establishment of ceilings on the issuance of notes based on two variables – reserves and share capital. The relationship between the issue of notes and reserves acted as a guarantee of liquidity, while the relationship between the issuance of notes and capital was the guarantee of solvency. Table 8.1 summarizes the limits on issue imposed on the Bank of Spain.

The legislation set limits on the issuance of notes in the 1874 decree that granted the Bank of Spain the monopoly of issue. These limits required that the gold or silver reserves were at least one quarter of the

Table 8.1 Legal maximum for banknotes issued by the Bank of Spain, 1874–1913

	Minimum reserves	Minimum capital
Decree 19 March 1874	reserves $\geq 1/4$ notes	500 millions pts (1874–1881) 750 millions pts (1882–1890) (notes ≤ 5 paid-up capital)
Law 14 July 1891	reserves $\geq 1/3$ notes gold reserves = $1/2$ reserves	1500 millions pts (notes ≤ 10 paid-up capital)
Decree 9 August 1898	0–1500 mill notes: reserves $\geq 1/3$ notes 1500–2000 mill notes: reserves $\geq 1/2$ notes 2000–2500 mill notes: reserves $\geq 2/3$ notes and for all notes: gold reserves = $1/2$ reserves	2500 millions pts (notes $\leq 16 \frac{2}{3}$ paid-up capital)
Decree 2 August 1899	0–1500 mill notes: reserves $\geq 1/3$ notes 1500–2000 mill notes: reserves $\geq 1/2$ notes and for all notes: gold reserves = $1/2$ reserves	2000 millions pts (notes $\leq 14 \frac{2}{3}$ paid-up capital)
Law 13 May 1902	0–1200 mill notes: reserves $\geq 1/3$ notes ($1/2$ gold) 1200–1500 mill notes: reserves $\geq 60\%$ notes (40% gold and 20% silver) 1500–2000 mill notes: reserves $\geq 70\%$ notes (50% gold and 20% silver)	2000 millions pts (notes $\leq 14 \frac{2}{3}$ paid-up capital)

Source: Galvarriato (1932: 212–15, 236–7).

banknotes in circulation and that the paid-up capital amounted to at least one fifth of the banknotes in circulation. Subsequent laws set stricter issuance limits in terms of reserves, although no longer related to the paid-up capital. In the negotiations with the Treasury, the Bank of Spain strongly defended its monopoly of issue, and the Bank's directors aimed at separating the legal issuance limit from the institution's share capital.²¹ The law of 1891 changed the criteria for issuance, and required that the reserves amounted to at least one third of the value of notes, with at least half of the reserves in gold. The issuance limit was set at

1,500 million pesetas, with no direct link to the capital which, given the paid-up capital of the Bank at that time, in practice amounted to a very substantial reduction in the issuance limit equal to 10 times the capital. The 1898 decree authorized the Bank of Spain to increase the issuance of notes to 2,500 million pesetas (16.66 per cent of its capital), with reserves guaranteed in tranches: a reserve ratio of one third was maintained for up to 1,500 million pesetas; a reserve ratio of one half was set for the band between 1,500 million and 2,000 pesetas, and a reserve coefficient of two thirds was set for the band between 2,000 and 2,500 million pesetas; half the reserves had to be in gold for all the bands. The decree of 1899 reduced the maximum issuance to 2,000 million pesetas (14.66 per cent of the capital) and maintained the reserve limits that had been established in the decree of the previous year. Finally, the law of 1902 maintained the issuance limit at 2,000 million pesetas and left unchanged the reserve ratio for up to 1,200 million pesetas at one third (with half in gold), although it increased the reserve ratio to 60 per cent for the issuance band between 1,200 and 1,500 million pesetas (40 per cent in gold and 20 per cent in silver) and 70 per cent for the band between 1,500 and 2,000 million pesetas (50 per cent in gold and 20 per cent in silver).

The Bank of Spain always had a reserve ratio above the legal limit for silver, but it remained at the limit established by law for gold (see Figure 8.2). The Bank considered the surplus reserve ratio to be an indicator of credibility for conversion. This conversion of notes for cash had taken place exclusively in silver since 1883 and, as such, maintaining a surplus in the silver reserve ratio was all the Bank had to do to ensure its convertibility. The gold reserve ratio remained at the limits specified by law and, as a rule, these limits were lower than the 33 per cent used by the gold standard countries.²² In order to have been able to join the gold standard, the Bank of Spain would have had to reduce its note issuance substantially, but the Bank of Spain did not feel committed to exchange rate stability or the convertibility of banknotes into gold.²³

In part, the excess issuance of banknotes was the result of the monetization of the public deficit, which is why Spain could not join the gold standard (see Figure 8.3). The Bank of Spain was not a government institution and, as such, the Treasury did not share in the institution's profits, but the government granted the Bank the monopoly of issuance in 1874 in exchange for a loan of 150 million pesetas. The Bank of Spain advanced cash to the Treasury in exchange for government bonds that the Bank kept in its portfolio. In the first years of the monopoly of issuance, the accumulation of public debt did not result in increases in the amount

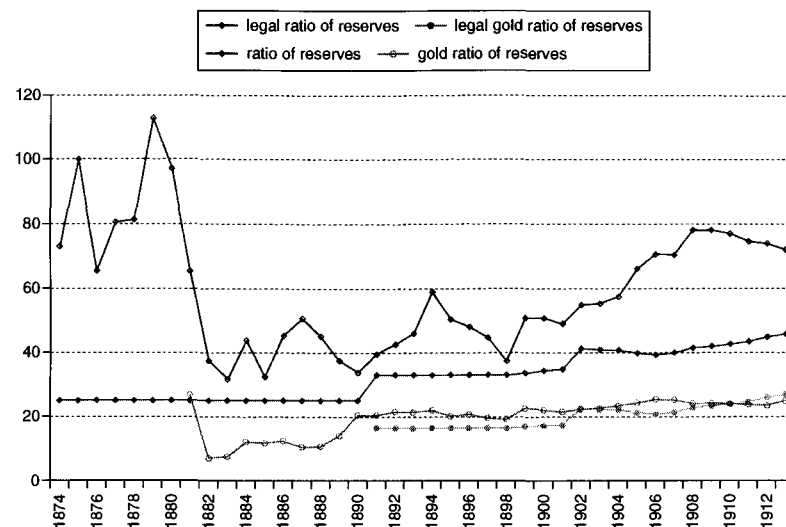


Figure 8.2 Bank of Spain reserve ratio, 1874–1913 (reserves/notes) (%)

Sources: Reserve ratio calculated from the Bank of Spain balance sheets, Anes (1974b: 143–56 and 1974c: 114). Legal reserve ratio from Galvarriato (1932: 212–15, 236–7) (see Table 3.1). The balance sheet of the Bank of Spain did not specify if its reserves were gold or silver until 1881. Spanish legislation did not oblige it to keep a percentage of its reserves in gold until 1891.

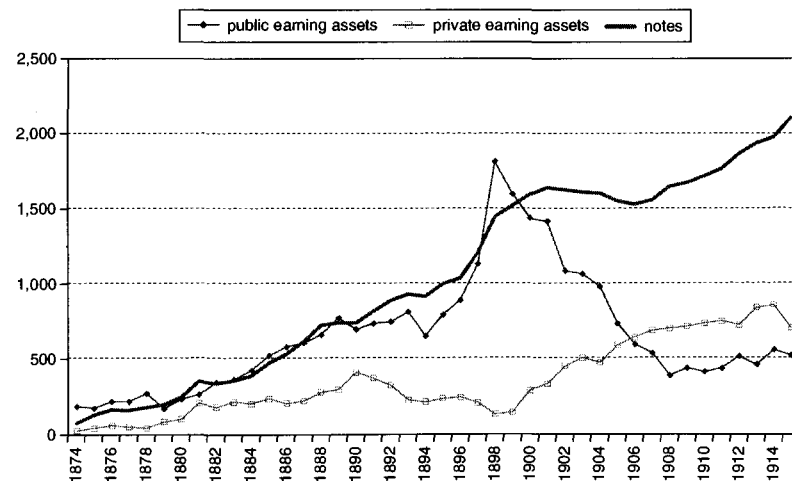


Figure 8.3 Bank of Spain portfolio and notes, 1874–1915 (pesetas, million)

Source: Data from the Bank of Spain balance sheets, Anes (1974b: 143–56).

of money.²⁴ However, the monetization of the deficit became widespread in the mid-1890s and increased sharply with the conflict between Spain and the US in 1898, which led to a precipitous fall in the peseta's exchange rate. The Bank of Spain increased the circulation of notes by an average of 10 per cent per year throughout the period in exchange for assuming the Treasury's debt. After the independence of the last Spanish colonies in the early twentieth century, the government decided to end fiscal indiscipline and prohibited borrowing from the Bank without prior legal authorization. It also undertook to reimburse the Bank within 10 years (1902–1911) for the bonds that the Bank retained in its assets.²⁵ However, the Bank did not reduce the notes in circulation proportionally to the reduction of public earning assets, which would have provided a gold reserve ratio sufficient to enter the gold standard. Instead, the Bank maintained the volume of notes in circulation and increased short-term silver reserves because of the lack of turnover to replace the public earning assets portfolio with private earning assets.²⁶

The excess silver reserve ratio, which reached almost 80 per cent, was not compensated by high interest rates to maintain profitability. On the contrary, the Bank of Spain's level of interest rates was at the international level, albeit with a different fluctuation pattern (see Figure 8.4). As noted, the Bank of Spain's interest rate changed little during the era of the classical gold standard. There were two periods of rising rates linked to the loss of reserves, in the early 1880s and in the late 1890s. During the remainder of the period, interest rates remained stable at levels of between 4 per cent and 4.5 per cent, set at levels to minimize the service cost of the public debt.²⁷ On the other hand, the policy of the Bank of Spain was to offer loans guaranteed with government bonds at an interest rate lower than the rate earned by the public bonds themselves, thereby encouraging speculators to borrow at much as possible by pledging public bonds, use the loan to buy more public bonds and use them once again as a guarantee for another loan to buy more public bonds, and so on.²⁸

The Bank maintained the surplus reserves as a measure of credibility, but it was aware of the loss of profits that holding a percentage of reserves above the minimum required by law entailed.²⁹ This loss of potential profits was compensated by larger note issuance with regard to the paid-up capital (see Table 8.1), which enabled the Bank to have an average annual shareholder return of over 20 per cent throughout the period of the classical gold standard (see Figure 8.5). The return on assets (ROA) decreased steadily throughout the period due to the increase in reserves, but the return on equity (ROE) remained high and stable thanks to the surplus issuance on capital, which enabled the Bank to

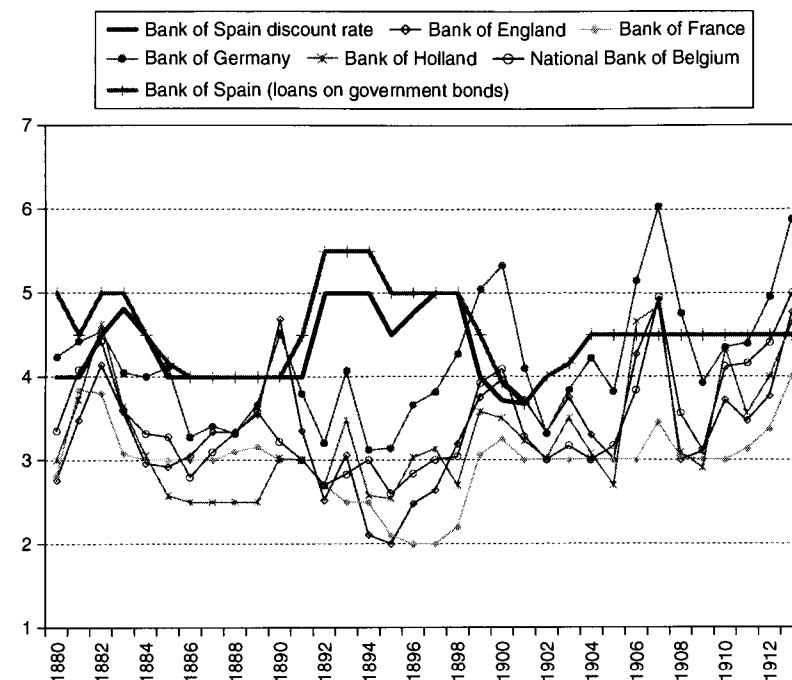


Figure 8.4 Comparison of annual average discount rates: Spain, England, France, Germany, Holland and Belgium, 1880–1913 (average of weekly figures)

Source: White (1933: 331). The data for the Bank of Spain comes from the Minutes of the Shareholders' General Meetings, 1880–1913.

maintain the high shareholder return (see Figures 8.5 and 8.6). The risk posed in order to sustain a very high ROE was offset by the excess silver reserve ratio. The drawback of this policy was the need to keep the country off the gold standard, because joining the gold standard would have meant reducing the note issuance, and therefore the shareholder return. The Bank of Spain, as a private bank, privileged its own interest (i.e. profitability) over the 'public good' of exchange rate stability. We can therefore conclude that the Spanish issuance financial institution was uninterested in joining the gold standard (the maintenance of a stable exchange rate for the peseta). As private bank, it focused on profitability, disregarding entirely its duty as keeper of both the internal and the external value of the national currency. The Bank of Spain had been granted the monopoly of issuance but its private constitution was in conflict with the public duties of a genuine central bank.³⁰

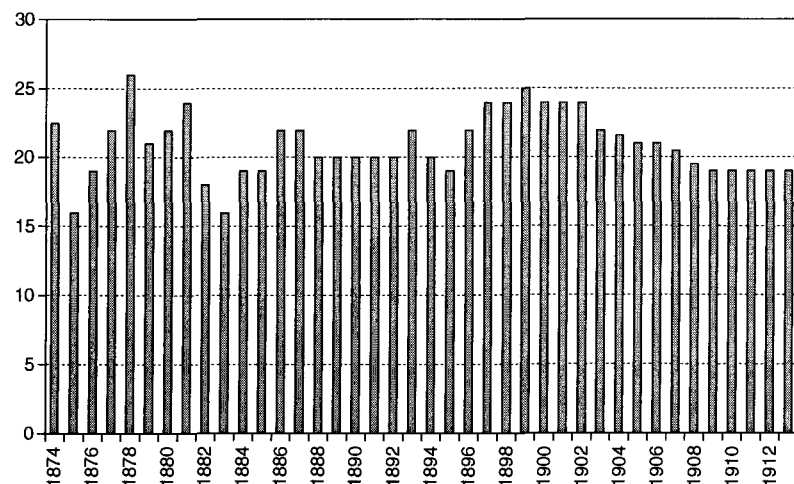


Figure 8.5 Bank of Spain annual shareholder return, 1874–1913 (%)

Note: We have calculated profits for the period before 1900 following Martínez Méndez's methodology.

Source: Shareholder return = dividend/paid-up capital. Figures from the Minutes of the Shareholders' General Meetings, 1874–1913.

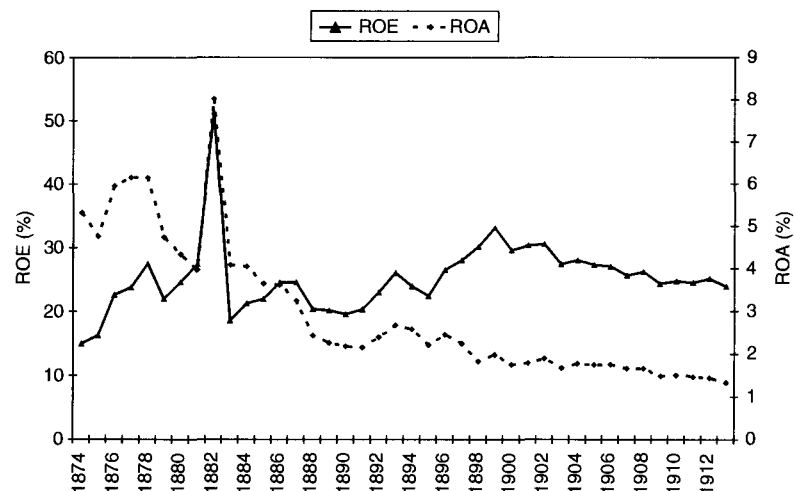


Figure 8.6 Bank of Spain ROE–ROA (%), 1874–1913

Source: ROE (%) = profits/owner's equity. ROA (%) = profits/total assets. Owner's equity and assets have been taken from the Bank of Spain balance sheets, Anes (1974b, pp. 143–56). Profits from the Minutes of the Shareholders' General Meetings, 1874–1913 (appendix D: 1874–1891, and appendix C: 1892–1913), Archive Bank of Spain.

The Bank of Spain and the gold exchange standard, 1914–31

Spain also failed to adopt the gold exchange standard. The peseta continued to float freely on the international markets until 1931 – although, given the many interventions that took place, the situation might be better characterized as a 'dirty' float. World War I created a very favourable situation for the economy of a neutral country such as Spain, which posted substantial trade surpluses between 1914 and 1918. Due to the conviction that only gold could provide adequate safeguards in that uncertain environment, currencies obtained were quickly converted into gold, coins and bullion. Between 1914 and 1918, the Bank of Spain acquired approximately 463 tons of gold, which was worth 1,595 million pesetas at the parity established in the currency reform of 1868, which was theoretically still in force. This all led to a significant appreciation of the peseta in the international markets (Figure 8.7). The increase in gold reserves and the increase in the value of the currency revived the discussion on adopting the gold standard. Indeed, the preconditions had never before been as favourable, as the two factors mentioned above were joined by a rising silver price that made its demonetization less costly.³¹ However, after the exceptional circumstances of war, the Spanish economy once again posted high trade deficits, as well as a persistent imbalance in the country's government accounts. In 1919, the belligerent

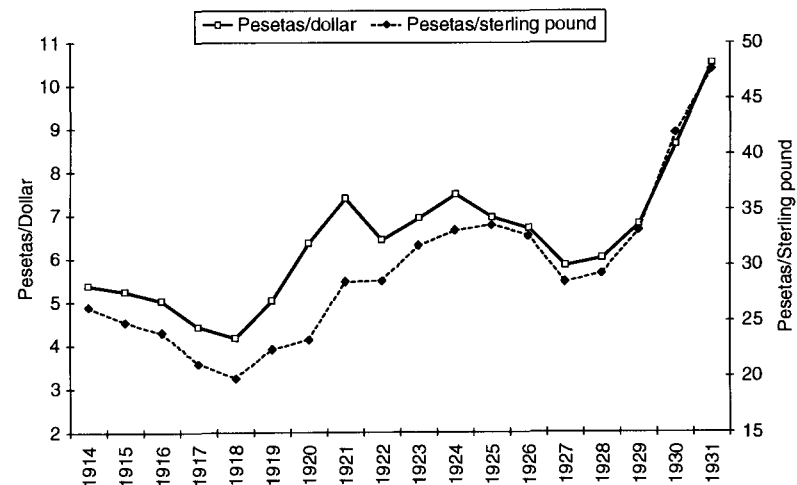


Figure 8.7 Nominal exchange rate, 1914–31

Source: Martínez Méndez (2005, table A26.1)

countries gradually abandoned the extraordinary measures taken during the war and their respective currencies began to realign themselves according to the new situation.³² The peseta began to fall in the international markets from 1919 onwards, as did most European currencies. Thereafter, it remained relatively stable between 1922 and 1925. A gradual appreciation of the peseta exchange rate in 1926 and 1927 gave new hope to advocates of Spain's membership to the so-called gold exchange standard. However, from 1928 onwards, the external value of the peseta began a continuous drop and all official attempts made to stabilize it met with complete failure. As had happened before 1914, the Spanish currency remained outside the dominant monetary standard of the period.

There were two options available to economies wanting to return to the gold standard in the 1920s: to devalue or to deflate. As is well-known, the cases of France and Britain are the classic examples of both choices.³³ In Spain, the need to stabilize the peseta exchange rate and the possible adoption of the gold standard were hotly debated, as is evident in the numerous publications and reports published during the interwar years.³⁴ However, the attempts of successive governments throughout the period to take definite steps in that direction were offset by the obstructive attitude of the Bank of Spain, which was strongly opposed to devaluing the peseta below its legal parity of 1868, which would have led to a strong appreciation of the Bank's external assets.³⁵ The appreciation of the reserves would have entailed the appearance of substantial extraordinary profits, leading to a political problem over its attribution to the government or to the shareholders.³⁶ Moreover, the Bank flatly refused to support any measure that would involve committing its metallic reserves to ensure (gold) convertibility or to the maintenance of a stable exchange rate.³⁷

Spain's economic policy at no time aimed at deflation. The Bank of Spain's monetary policy did not follow the classic rules of the game that forced players to react to losses of reserves by limiting the system's liquidity.³⁸ The income-generating domestic assets therefore evolved independently from the reserves. The changes were in the opposite direction in almost 40 per cent of cases. On the other hand, the discount rate was rarely used to counteract movements of reserves, as evidenced by a correlation index of 0.021, but with a positive sign.³⁹ In fact, this instrument was barely used, as the discount rate changed only nine times between 1914 and 1931. During this period, as in the previous one, the issuing bank preferred to use 'gold devices' whenever it had to deal with situations requiring an increase in the price of money. On several occasions,

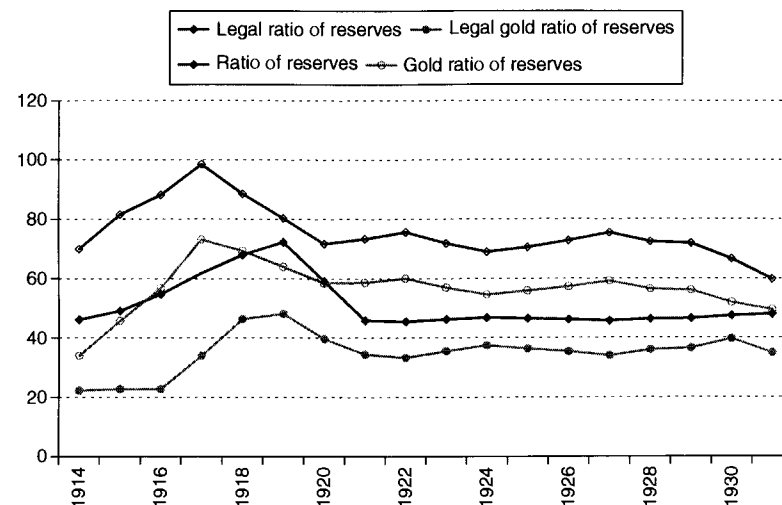


Figure 8.8 Bank of Spain reserves ratio, 1914–1931 (reserves/notes or gold/notes) (%)

Sources: Reserve ratio (notes/reserves) and gold reserve ratio (notes/gold) calculated from the Bank of Spain balance sheets, Martín-Aceña (1985, table IV-1 and IV-2). Legal reserve ratio and legal ratio of gold reserves from Martínez Méndez (2005, table 15.2.)

internal instructions were given to ration credit and, on some occasions, silver coins were put in circulation instead of issuing banknotes.⁴⁰

The passive strategy of maintaining a high reserve ratio continued, in the belief that only the existence of a large volume of metal (gold and silver coins and bullion) in the vault of the Bank ensured confidence in the notes in circulation. Besides, the gold newly acquired during the war enabled the issuing institution to increase its reserve ratio to the point that the metallic cover exceeded 70 per cent in most years, as shown in Figure 8.8 above. Hence, a basic difference between this period and the previous one is that Spain was easily able to comply with the Palmer rule. In fact, the Bank of Spain's gold coverage remained at around 60 per cent throughout the interwar period, well above the international level.⁴¹

Between 1914 and 1920 the issuance limit was extended six times, reaching 5,000 million pesetas (see Table 8.2). However, despite this strong monetary expansion, the Bank of Spain had enough gold to back the banknotes in circulation for the first time since gold convertibility was interrupted. In fact, the large purchases of gold during the war enabled the Bank to maintain an amount of excess reserves far above

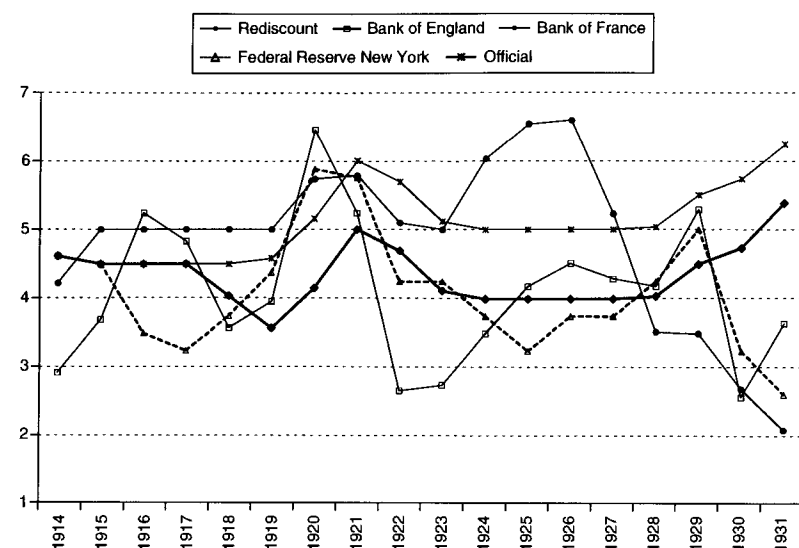


Figure 8.9 Annual average discount rates: Bank of England, Bank of France, New York Federal Reserve Bank and Bank of Spain

Sources: For Bank of Spain (official and rediscount), Minutes of the Shareholders' General Meetings, 1914–1931; for Bank of England and the Reserve Bank of New York, Martínez Méndez (2005: table A30.11); for Bank of France, NBER Macrobistory Database, <http://www.nber.org/databases/macrobistory/rectdata/13/m13014.dat>.

the legal ratios, as shown in Figure 8.8. Until 1919, the previously stipulated coverage obligations were maintained after each increase in the issuance limit, and coverage of 100 per cent in gold was stipulated for the total new issuance.⁴² When the war ended, the purchases of gold were reduced and hence the rules for reserve ratios were changed.

Despite the fact that the Bank of Spain had enough reserves to sustain the stability of the peseta exchange rate, monetary policy was not conducted in way that would have led to the adoption of the gold standard. As shown in Figure 8.9, the official discount rates were changed only occasionally and, for many years, the Spanish interest rates remained similar to – or even, at times, below – those of the major countries, although the balance of payments on the current account was persistently closed with deficits. Figure 8.9 portrays both the official discount rate (for commercial transactions) and the rediscount rate (set at one point below the official rate which was applied only to financial institutions).⁴³ As was the case in the previous period, the profitability of the issuing bank was not maintained as a result of high interest rates.

Table 8.2 Legal maximum for banknotes issued by the Bank of Spain, 1914–31

		Minimum reserves	Min. Gold – Max. Silver	Maximum issuing/Min. Capital
Decree 5.8.1914	up to 2000	according to earlier regulations		2500 (notes < 16 2/3 paid up-capital)
	beyond 2000	100%		
Decree 10.3.1917	up to 2500	according to earlier regulations		3000 (notes < 20 paid up-capital)
	beyond 2500	100%	100% gold	
Decree 6.8.1918	up to 3000	according to earlier regulations		3500 (notes < 23 1/3 paid up-capital)
	beyond 3000	100%	100% gold	
Decree 2.1.1919	up to 3500	according to earlier regulations		4000 (notes < 26 2/3 paid up-capital)
	beyond 3500	100%	100% gold	
Decree 27.12.1919	up to 4000	according to earlier regulations		4500 (notes < 30 paid up-capital)
	beyond 4000	100%	100% gold	
Decree 7.10.1920	up to 2000	46.5%	28.5%–18%	5000 (notes < 33 1/3 paid up-capital)
	beyond 2000	70%	60%–10%	
Law 29.12.21	up to 4000	45.5%	40%–5%	5000 (notes < 28 1/4 paid up-capital)
	beyond 4000	60%	50%–10%	
Decree 6.5.1931	up to 4000	45.5%	40%–5%	5200 (notes < 29 2/5 paid up-capital)
	beyond 4000	60%	50%–10%	
Decree 27.5.1931	up to 4000	45.5%	40%–5%	6000 (notes < 33 9/10 paid up-capital)
	beyond 4000	60%	50%–10%	

Source: Data from Martínez Méndez (2005: table 15.2). There was no legal limit on issue with regard to the bank's social capital in this period, and as such the above figures are an estimate.

The official money rates were changed twice, first in 1920–21 and second in 1928–31. In both instances, the increases came as a response to the depreciation of the peseta exchange rate. The initiative was taken by the Treasury, which saw the fall of the currency as an economic and political failure, and a setback to its desire formally to join the gold standard club of nations. The government knew that the rates had to rise in order to defend the peseta and to keep it stable thereafter. However, this policy met with the hostility of the Bank's board of directors, reluctant

to approve any rise because they thought it would reduce its commercial businesses and, hence, the level of its annual profits. Unconcerned with the stability of the exchange rate, and even less so with the government's aim to return to gold convertibility, the Bank tried to block or to minimize the increase in the discount rates. The Treasury had the upper hand in 1920 and, despite its resistance, the Bank had to give up and agree to a 1 percentage point rise. On the contrary, in the changes introduced in 1928–30 the board of the Bank was able to halve any of the government's proposed rates increases.⁴⁴ Nevertheless, it is also true that the poor fiscal situation of the Treasury constrained its ability to implement a restricted monetary policy. Unable to balance the budget, high interest rates meant an increase in the cost of borrowing. Hence, the desire to stabilize the currency and adopt the gold standard at the 1868 parity, which required some degree of price deflation by raising the cost of money, was in conflict with the always pressing need to finance the budget deficit. In fact, the adoption of the gold standard would have first required a drastic reduction in public expenditures and/or a radical tax reform in order to increase public revenues. Some minor fiscal changes were made but they were not sufficiently substantial to solve the intractable budget deficits.⁴⁵

The attempt to stabilize the peseta exchange rate thus was found less in the implementation of a firm and orthodox fiscal and monetary policy, and more in the introduction of administrative devices. In October 1919, forward transactions were banned and some foreign financial transactions were subjected to a system of previous authorization.⁴⁶ Administrative intervention was extended in 1924, as the foreign exchange operations that could be freely performed became more limited. There then followed a short period during which the peseta appreciated and a wave of optimism led officials to believe that it was possible to adopt the gold standard at the historical parity. However, no monetary and fiscal policies were put in place in order to prepare the economy for formal stabilization. The reversal began in mid-1928, when the peseta started to depreciate again. The Ministry of Finance reacted by establishing a new body, the *Comité Inteventor del Cambio* (CIC), to support the external value of the peseta. It was also the first step toward a more complete system of exchange control that came into place in 1930.

According to the Banking Act of 1921, which had empowered the government to intervene in the exchange market and mandated the Bank of Spain to assist in any attempt to defend the peseta rate and to share the expenses in doing so, the CIC was endowed with funds provided by both the Treasury and the Bank in equal proportion. However, instead

of committing part of its huge gold reserves (which would have been the most reasonable attitude), the board of the Bank invoked legal and statutory restrictions and forced the CIC to obtain a foreign loan in London to be used to intervene to shore up the peseta. When the CIC consumed the loan and no more funds were forthcoming, the value of the peseta plummeted. The intervention was costly and the loan was not repaid until the mid-1930s.

This later episode highlights once again the peculiar character of the Spanish issuance institution. Despite enjoying a government franchise and the monopoly of issuance, the directors and the shareholders of the Bank considered the 'institution' a purely private concern. Therefore, the Bank had to be run as any other financial company. Gold, as did any other assets in the balance sheet, belonged to the shareholders, not the Treasury, and should not be committed to any monetary policy adventure. For the Bank, its gold reserves were not a policy instrument that the Treasury could unrestrictedly employ. Gold was not there in the vaults of the institution even to assure the convertibility of its banknotes, but simply to maintain the confidence of the public in the Bank's liquidity and solvency. The evidence seems to leave no doubt: by the early 1930s, the Bank of Spain was still far from assuming the responsibilities of a central bank insofar as monetary policy is concerned. It also highlights that, without the cooperation of the bank of issuance, it would have been extremely difficult to introduce the gold standard and to sustain the stability of the peseta exchange rate.

The evidence of the interwar years also shows the contradictions between the policies followed by the government. Monetary policy (because of the opposition of the Bank of Spain) and fiscal policy (because the Treasury's lack of will to undertake radical tax reform) were inconsistent with the declared goal of adopting the gold standard at the ideal 1868 parity. Such a goal would have required a substantial degree of deflation, at which serious attempts were never made. The alternative to deflation would have been to opt for a more realistic parity. However, devaluation was never considered. Instead, a sort of escape route was attempted to sustain the value of the peseta: the introduction of exchange controls, although this policy was in contradiction to the adoption of the gold standard, based on the free movement of capital.⁴⁷

The enormous reserves of gold accumulated during World War I were of no use at all in backing the government intention to join the gold standard. The Bank of Spain resisted any attempt made by the Treasury to use them to defend the exchange rate of the peseta. The Bank of Spain preferred to immobilize its gold in its vaults, and to hold reserves

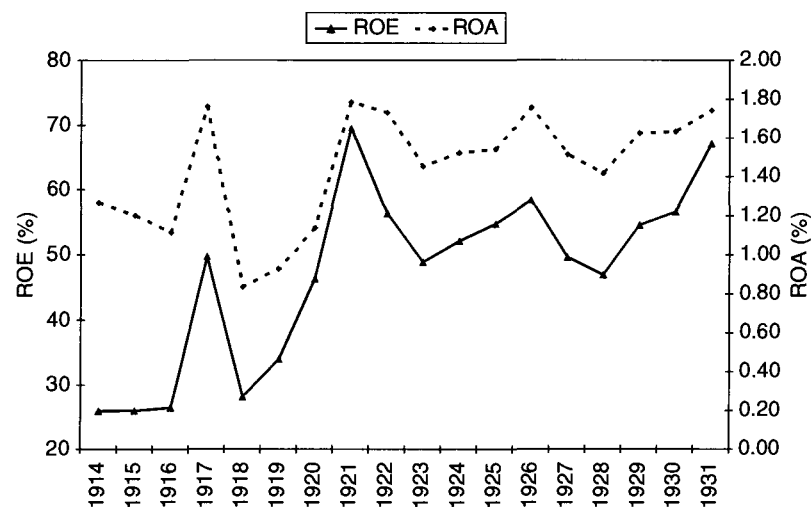


Figure 8.10 Bank of Spain, ROE–ROA (%), 1914–31

Source: ROE (%) = profits/owner's equity. ROA (%) = profits/total assets. Owner's equity from: Bank of Spain balance sheets, Minutes of the Shareholders' General Meetings, 1914–1931, Archive Bank of Spain. Total assets in Martínez Méndez (2005, Table 16.3). Profits from: Minutes of the Shareholders' General Meetings, 1914–1931 (appendix C), Archive Bank of Spain.

in excess of the already high level of reserve requirements set by the government. This way of ensuring credibility was very costly in terms of profits. However, the Bank's shareholders were not affected, as a strategy begun in the late nineteenth century to dissociate the issuance of notes from the Bank's level of capital was continued during this period.

The behaviour of the two ratios that show the financial returns of the Bank's operations and activities between 1914 and 1931 is shown in Figure 8.10. The ROA fluctuated substantially during the war years and thereafter remained relatively stable at around 1.7 per cent. On the other hand, the ROE increased to over 50 per cent after 1920 and, from 1923 onwards, its average value was at about a remarkable level of 60 per cent. The Bank of Spain was, indeed, profitable to its shareholders who, on average, received a 25 per cent return between 1914 and 1931, as can be seen in Figure 8.11. This percentage was well above that obtained by the owners of the other Spanish financial institutions.⁴⁸ Even in the 1920s, the Bank of Spain did not assume its role as a central bank. The attitude of the government to monetary matters was also inconsistent, because its inability to address the problem of insufficient public revenues was

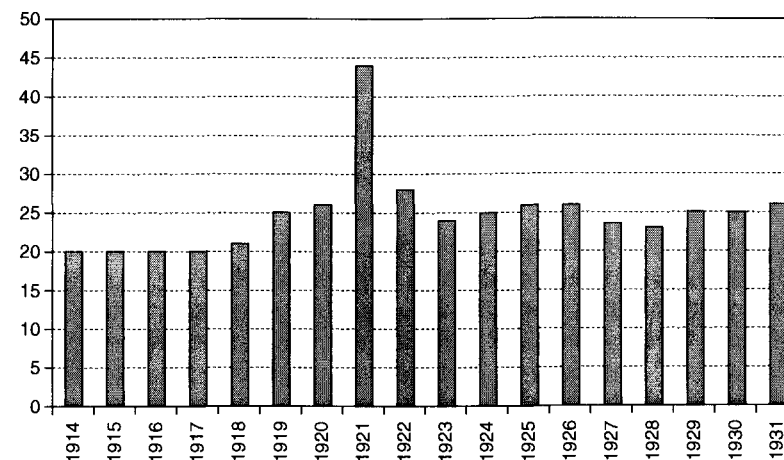


Figure 8.11 Bank of Spain annual shareholder return (%), 1914–31

Source: Shareholder return = dividend/paid-up capital. Bank of Spain balance sheets, Minutes of the Shareholders' General Meetings, 1914–1931, Bank of Spain Archive.

not compatible with its public concern over the exchange rate. In any event, the institutional structure made it impossible to overcome the agency problems that the government had with its banker, despite the Bank's gradual loss of independence. The beneficiaries were the Bank's shareholders.

Conclusion

There is no trace of a formal decision to interrupt the convertibility of the Bank of Spain's banknotes into gold in the minutes of the board of directors. However, the Bank no longer redeemed its notes in gold after the summer of 1883. The Bank's gold reserves reached a maximum of 125 million pesetas in 1881, and then fell sharply to 50 million pesetas in 1882. The drop was caused by a combination of factors, including the European financial crisis of the early 1880s (which reduced the levels of foreign investment) and a deterioration of the balance of payments on the current account. An ill-advised operation by the Treasury to reduce and to alter the maturity of the outstanding debt also contributed to the loss of gold.⁴⁹ What the minutes of the board for the years 1882 and 1883 reveal is the concern of the directors of the Bank for the lack of bullion (both gold and silver) on its balance sheet, as well as the concern

that the public might refuse to accept the Bank's notes as they saw that that the institution was losing its gold.⁵⁰

No references were made to ending gold convertibility at the meetings of the Junta Consultiva de la Moneda, an official consulting body on monetary matters. The Junta had recommended the adoption of the gold standard as early as 1876, but no government decision had been taken by 1883. When gold convertibility was de facto suspended, the members of the Junta maintained absolute silence. In the few meetings of the Junta after 1880, the question of the lack of gold and silver coins in circulation was discussed, as well as the outflows of (gold) bullion due to the imbalance between the metallic ratio at the Madrid Mint and the market metallic ratio, which encouraged the exportation of gold. However, the Junta made no policy recommendation and remained silent about the fact that the Bank of Spain was losing its reserves, which led it, first, to restrict and then end the convertibility of its notes into gold.⁵¹

Although it is a well-known historical fact that many countries' currencies which were on the gold standard did not introduce money convertibility, the fact of the matter is that they were somehow able to maintain the stability of their respective exchange rates. Unlike most European currencies, the exchange rate of the inconvertible peseta against gold, and hence against the major currencies, fluctuated widely. This is apparent in Figure 8.1. The nominal exchange rate of the peseta varied a great deal, from 25.6 to the pound sterling in 1883 to a peak of 39.2 in 1898, and then back to 27.1 in 1913. During the 1920s, the Spanish authorities made various attempts to stabilize the peseta's exchange rate and to peg it to gold. Figure 8.1 shows that they failed and that, against the broader international trend, the Spanish currency remained off gold. The peseta experienced phases of appreciation, followed by phases of depreciation, which became particularly acute after 1928.

The minutes of the board of directors of the Bank of Spain suggest that the institution refused fully to accept its obligations as a central bank. First, it only acted as a lender of last resort under government pressure when successive banking crises jeopardized the stability of the financial system.⁵² Second, the Bank's directors never considered the defence of the exchange rate to be one of their duties. Both before and after 1914, their main concern was maximizing profits and the amount of dividends to be paid out to shareholders. Private interests prevailed over the public interest. Moreover, when the stabilization of the peseta was discussed in official circles, the Bank strongly argued that the gold parity to be adopted should be that set in 1868, regardless of the circumstances and the economic changes that had taken

place since that date. Any lower parity, which was also unpalatable to the Ministry of Finance, was opposed by the Bank despite the fact that it might have eased the adoption of the gold standard and stimulated foreign trade.

Spain's monetary experience is exceptional. All European countries were members of the gold standard club at one time or another. The gold standard was also adopted in America and in many Asian nations. The Bank of Spain was always willing to guarantee the silver convertibility of its paper notes. However, the stability of the exchange rate of the peseta was not among its concerns. All Spanish governments wanted the introduction of the gold standard, and deplored the instability of the peseta. Time and again, plans were made to join the international monetary system. However, the Treasury's fiscal policy was systematically inconsistent with such a goal. As stated by the renowned Comisión del Patrón Oro in its famous 1929 report, monetary stability was sacrificed at the altar of the public budget deficit. Spain's historic detachment from the world monetary system cost the country dearly in terms of both its debt burden and GDP growth: two questions that warrant further research.

References

- Anes Alvarez, R. (1974a) 'El Banco de España (1874–1914): Un banco nacional', *La Banca Española en la Restauración, Volume I*. Madrid: Banco de España: 107–215.
- Anes Alvarez, R. (1974b) 'Balances sectorizados del Banco de España', *La Banca Española en la Restauración, Volume II*. Madrid: Banco de España: 141–98.
- Anes Alvarez, R. (1974c) 'Estimación de la moneda de plata existente en España entre 1874–1915', *La Banca Española en la Restauración, Volume II*. Madrid: Banco de España: 99–116.
- Anes Alvarez, R. and P. Tedde de Lorca (1976) 'La deuda pública y el Banco de España, 1874–1900', *Hacienda Pública Española*, 38: 35–50.
- Aixalá Pastó, J. (1999) *La peseta y los precios*. Zaragoza: Prensas Universitarias de Zaragoza.
- Belda, F. (1928) *El Patrón Oro fantasma*. Madrid.
- Bernácer, G. (1930) 'La depreciación de la moneda española', in *Revista Nacional de Economía*, vol. 93/94: 401–23.
- Bloomfield, A. (1959) *Monetary Policy under the International Gold Standard, 1880–1914*. New York: Federal Reserve Bank of New York.
- Bordo, M. and Kidland, F. (1995) 'The Gold Standard as a Rule: An Essay in Exploration', *Explorations in Economic History*, 32: 423–64.
- Bordo, M. and Rockoff, H. (1996) 'The Gold Standard as "Good Housekeeping Seal of Approval"', *Journal of Economic History*, 56: 389–428.
- Bordo, M. and MacDonald, R. (1997) 'Violations of the "Rules of the Game" and the Credibility of the Classical Gold Standard, 1880–1914', *NBER Working Paper Series*, WP 6115.

- Bordo, M. and MacDonald, R. (2003) 'The Inter-War Gold Exchange Standard: Credibility and Monetary Independence', *Journal of International Money and Finance*, 22(1): 1–32.
- Bordo, M. and MacDonald, R. (2005) 'Interest Rate Interactions in the Classical Gold Standard, 1880–1914. Was there any Monetary Independence?', *Journal of Monetary Economics*, 52(2): 307–27.
- Broder, A. (1976) 'Les investissements étrangers en Espagne au XXe siècle: méthodologie et quantification', *Revue d'Histoire Economique et Sociale*, 54(1): 29–63.
- Ceballos Teresí, J. (1932) *Historia económica, financiera y política de España en el siglo XX. Volume IV (1918–22), Volume V (1922–26), Volume VI (1926–29), Volume VII (1929–30) and Volume VIII (1931)*. Madrid: El Financiero.
- Comín, F. (1996) *Historia de la Hacienda Pública, II. España (1808–1995)*. Barcelona: Crítica.
- Comision del Patron Oro (1929) *Dictamen de la Comisión nombrada por RO de 9 de enero de 1929, para el estudio de la implantación del patrón oro*. Madrid: Consejo Superior Bancario. Imprenta de Samarán y Cia.
- Conant, C.A. (1915) *A History of Modern Banks of Issue*, 5th edn. New York and London: G.P. Putnam & Sons.
- Contamin, R. (2003) 'Interdépendence financières et dilemme de politique monétaire. La Banque de France entre 1880 et 1913', *Revue économique*, 54: 157–79.
- Cubel, A. (2001) 'Estabilidad e inestabilidad macroeconómica en España, 1880–1913: el coste del abandono de la convertibilidad', in Sudrià, C. and Tirado, D.A. (eds), *Comercio exterior, moneda y crecimiento económico en la España de la Restauración*. Barcelona, Edicions Universitat de Barcelona: 177–93.
- Dutton, J. (1984) 'The Bank of England and the Rules of the Game under the International Gold Standard: New Evidence', in Bordo, M.D. and Schwartz, A.J. (eds), *A Retrospective on the Classical Gold Standard, 1821–1931*. Chicago: University of Chicago Press: 173–202.
- Drummond, I. (1976) 'The Russian Gold Standard, 1897–1914', *Journal of Economic History*, 36(3): 663–88.
- Drummond, I. (1987) *The Gold Standard and the International Monetary System, 1900–1939*, Studies in Economic and Social History. London: Macmillan.
- Eguidazu, F. (1978) *Intervención monetaria y control de cambios en España, 1900–1977*. Madrid: ICE Libros-Ministerio de Comercio y Turismo.
- Eichengreen, B. (1992) *Golden Fetters. The Gold Standard and the Great Depression, 1919–1939*. New York-Oxford: Oxford University Press.
- Eichengreen, B. (1996) *Globalizing Capital. A history of the International Monetary System*. Princeton: Princeton University Press.
- Eichengreen, B. and Flandreau, M. (1996) 'The Geography of the Gold Standard', Braga de Macedo, J., Eichengreen, B. and Reis, J. (eds), *Currency Convertibility. The Gold Standard and Beyond*. London and New York: Routledge: 113–43.
- Eichengreen, B.J. and Flandreau, M. (1997) *The Gold Standard in Theory and History*. London: Routledge.
- Fernández Baños, O. (1930) 'Cambio y estabilización de la peseta', *Revista Nacional de Economía*, 93/94: 363–85.
- Flanders, M.J. (1993) 'A Model of Discretion: The Gold Standard in Fact and Fiction', *World Economy*, 16: 213–35.
- Flandreau, M. (2008) 'Pillars of Globalization: A History of Monetary Policy Targets 1797–1997', in Beyer, A. and Reichlin, L. (eds), *The Role of Money: Money and Monetary Policy in the 21st Century*. Frankfurt: ECB: 208–43.
- Flandreau, M. and Komlos, J. (2006) 'Target Zones in History and Theory: Efficiency, Credibility, and Policy Autonomy', *Journal of Monetary Economics*, 53(8): 1979–1995.
- Flores de Lemus, A. (1929) 'Cambio y precios. La experiencia española', *Revista de Economía Nacional*, 28(24), Re-edited in *Revista de Economía Política*, January–April 1959: 132–52.
- Ford, A.G. (1962) *The Gold Standard 1880–1918: Britain and Argentina*. Oxford: Clarendon Press.
- Gallarotti, G.M. (1995) *The Anatomy of an International Monetary Regime: The Classical Gold Standard, 1880–1914*. New York: Oxford University Press.
- Galvarriato, J.A. (1932) *El banco de España, su historia en la centuria, 1829–1929*. Madrid: Banco de España.
- García-Iglesias, C. (2005) 'Ventajas y riesgos del patrón oro para la economía española, 1850–1913', Madrid, *Estudios de Historia Económica*, 47, Banco de España.
- Goodhart, C.A.E. (1988) *The Evolution of Central Banks*. Cambridge: MIT Press.
- Jobst, C. (2009) 'Market Leader: The Austro-Hungarian Bank and the Making of Foreign Exchange Intervention, 1896–1913', *European Review of Economic History*, 13(3): 287–318.
- Jonung, L. (1984) 'Swedish Experience under the Classical Gold Standard, 1873–1914', in Bordo, M.D. and Schwartz, A. (eds), *A Retrospective on the Classical Gold Standard, 1821–1931*. Chicago: Chicago University Press: 361–404.
- Llona, A. (2001) 'Flotar o hundirse: el dilema de la política de cambio en España entre 1850–1913', Sudrià, C. and Tirado D.A. (eds), *Comercio exterior, moneda y crecimiento económico en la España de la Restauración*. Barcelona: Edicions Universitat de Barcelona: 157–76.
- McGouldrick, P. (1984) 'Operations of the German Central Bank and the Rules of the Game, 1879–1913', in M.D. Bordo and A. Schwartz (eds), *A Retrospective on the Classical Gold Standard, 1821–1931*. Chicago: Chicago University Press: 311–59.
- Margairaz, M. (2003) 'Banques centrales, États, marches et sociétés d'une guerre à l'autre (1914–1945)', in O. Feiertag and M. Margairaz, M. (eds), *Politiques et pratiques des banques d'émission en Europe (XVII–XX siècle)*. Paris: Albin Michel: 419–50.
- Martín-Aceña, P. (1984) *La política monetaria en España, 1919–1935*. Madrid: Instituto de Estudios Fiscales.
- Martín-Aceña, P. (1985) 'Déficit público y política monetaria en la Restauración, 1874–1923', Martín-Aceña, P. and Prados de la Escosura, L. (eds), *La nueva historia económica en España*. Madrid: Tecnos: 262–82.
- Martín-Aceña, P. (1994) 'Spain during the Classical Gold Standard, 1880–1914', in Bordo, M. and Capie, F., *Monetary Regimes in Transition*. New Jersey: Rutgers University: 135–72.
- Martín-Aceña, P. (2000a) 'The Spanish Monetary Experience, 1848–1914', in Martín-Aceña, P. and Reis, J., *Monetary Standards in the Periphery: Paper, Silver, and Gold, 1854–1933*. Basingstoke: Palgrave MacMillan: 112–51.

- Martín-Aceña, P. (2000b) 'El Banco de España entre dos siglos: de banquero del Estado a prestamista en última instancia', in Morales Moya, A. (ed), *Las Claves de la España del siglo XX. Las transformaciones económicas*. Madrid: Sociedad Estatal Nuevo Milenio: 95–140.
- Martín-Aceña, P. (2006) 'The Bank of Spain and the Financial System, 1914–1962', *150 Years in the History of the Bank of Spain*. Madrid: Banco de España: 135–64.
- Martín-Aceña, P. and Pons, M.A. (1996) 'Estructura y rentabilidad de las empresas financieras en España, 1874–1975', Comín, F. and Martín-Aceña, P. (eds), *La empresa pública en la historia de España*. Madrid: Editorial Civitas: 325–45.
- Martín-Aceña, P. and Pons, M.A. (2005) 'Sistema monetario y financiero', in X. Tafunell, X. and Carreras, A. (coords.), *Estadísticas históricas de España, siglos XIX y XX*. Madrid: fundación BBVA: 645–706.
- Martínez Méndez, P. (2005) *Trabajos de Historia Económica: Tesoro y Banco de España, 1900–1936*. Madrid: Banco de España.
- Martínez-Ruiz, E. (2000) *El control de cambios en la España franquista. El Instituto Español de Moneda Extranjera, 1939–1973*, PhD Dissertation, Universidad de Alcalá.
- Morys, M. (2011) 'Monetary Policy under the Classical Gold Standard'. Unpublished: 1–38.
- Nurkse, R. (1944) *International Currency Experience*. Geneva: League of Nations.
- Ögren, A. (2007) 'Lender of Last Resort in a Peripheral Economy with a Fixed Exchange Rate: Financial Crises and Monetary Policy in Sweden under the Silver and Gold Standard, 1834–1913', in Cottrell, P.L., Lange, E. and Olsson, U. (eds), *Centres and Peripheries in Banking*. Aldershot: Ashgate: 225–52.
- Olariaga, L. (1929) *La intervención de los cambios en España*. Madrid: Biblioteca Nueva.
- Olariaga, L. (1987) 'El Banco (de España) y la regulación monetaria', in Olariaga, L., *El Patrón Oro, la peseta y la economía española*. Barcelona: Orbis.
- Prados de la Escosura, L. (2010) 'Spain's International Position, 1850–1913', *Revista de Historia Económica/Journal of Iberian and Latin American Economic History*, 28(1): 173–215.
- Reis, J. (2007) 'An "Art", not a "Science"? Central Bank Management in Portugal under the Gold Standard, 1863–87', *Economic History Review*, 60(4): 712–41.
- Ródenas, C. and Bru, S. (2006) 'La convertibilidad de la peseta en el siglo XIX', *Revista de Historia Económica/Journal of Iberian and Latin American Economic History*, 24(3): 555–78.
- Sabaté Sort, M. (1993) 'Tipo de cambio y protección en la economía española de principios de siglo', *Revista de Economía Aplicada*, 1(1): 67–86.
- Sabaté Sort, M., Gadea, M.D. and Escario, R. (2006) 'Does Fiscal Policy Influence Monetary Policy? The Case of Spain, 1874–1935', *Explorations in Economic History*, 43: 309–31.
- Sabaté Sort, M. and Serrano Sanz, J.M. (eds) (2006) *Escritos monetarios. Raimundo Fernández Villaverde*. Madrid: Real Academia de Ciencias Morales y Políticas.
- Sardá, J. (1936) *La intervención monetaria y el comercio de divisas en España*. Barcelona: Bosch.
- Sardá, J. (1948) *La política monetaria y las fluctuaciones de la economía española en el siglo XIX*. Madrid: Consejo Superior de Investigaciones Científicas.
- Serrano Sanz, J.M. (2004) *El Oro en la Restauración*. Madrid: Real Academia de Ciencias Morales y Políticas.
- Serrano Sanz, J.M., Gadea, M.D. and Sabaté, M. (1998) 'Tipo de cambios y protección. La peseta al margen del patrón oro, 1883–1931', *Revista de Historia Industrial*, 13: 83–112.
- Tedde de Lorca, P. (2006) 'The Bank of Spain, 1856–1874', *150 Years in the History of the Bank of Spain*. Madrid, Banco de España: 69–108.
- Tena Junguito, A. (1992) 'Las estadísticas históricas del comercio internacional: fiabilidad y comparabilidad', *Estudios de Historia Económica*, 24, Madrid, Banco de España.
- Tortella Casares, G. (1974) 'Las magnitudes monetarias y sus determinantes', *La banca española en la Restauración*, Madrid, Banco de España, I: 457–521.
- Tortella Casares, G. (2006) 'The Bank of Spain: A New Financial Power, 1874–1914', *150 Years in the History of the Bank of Spain*. Madrid: Banco de España: 109–34.
- Triffin, R. (1964) *The Evolution of the International Monetary System: Historical Reappraisal and Future Perspectives*, Princeton Studies in International Finance, Princeton University.
- White, H.D. (1933) *The French International Accounts, 1880–1913*. Cambridge: Harvard University Press.