Maximizing Profits or Pursuing the Public Good? The Bank of Spain as a Central Bank*

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> *"Il y a de puissants actionnaires qui sont très heureux de recevoir de gros dividendes et qui ne les verraiet pas diminuer avec plaisir; mais l'interêt général doit l'emporter"*
> A. Neymarck, *Société d'Économie politique* (1905), in Sauvaire-Jourdan (1905), p. 302

Abstract

This study examines whether the transition from a system of multiple issuing banks to a monopoly on currency issuance was a step in the Bank of Spain's becoming a central bank in the true sense of the word (a non-profit-maximizing institution); or on the contrary, whether the Bank used its privilege as the only private issuing institution to obtain extra profits while neglecting its duties as a central bank. We find that thanks to the monopoly, the Spanish issuer did make extraordinary profits (above average for the banking industry). Further, the Bank's "private interest" prevailed over the "public interest" (convertibility into gold), while the monopoly was not decisive to its becoming a genuine central bank. The Bank of Spain was a highly profitable financial institution for its shareholders, and little concerned with the public interest. History shows that its transformation into an institution responsible for monetary and financial policy did not come until well into the twentieth century.

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Introduction

The Bank of Spain was established in 1782 as *Banco de San Carlos*. It was renamed *Banco de San Fernando* in 1829, and adopted its current denomination, Banco de España, in 1856. A period with multiple issuing banks began in that year, and continued until 1874, when the Bank of Spain was finally assigned the monopoly of banknote issue for the entire country. Between its founding and its final nationalization in 1962, the Bank was a private credit institution, but subject to heavy government intervention from 1939 on. Although the role of the Bank of Spain in the Spanish economy and its transformation into a genuine central bank responsible for monetary policy has been studied on various occasions (Anes, 1974; Tortella, 1970 and 2006; Tedde, 1988, 1999 and 2015; Martín-Aceña, 2000, 2006 and 2018; Castañeda, 2001; Bank of Spain, 2006, Martín-Aceña *et al.*, 2013), a great deal of research remains to be done.

This study seeks to determine whether the transition from a system of several issuing banks to a monopoly was a step towards the Bank of Spain's becoming a central bank in the true sense of the word (i.e. a non-profit-maximizing financial institution); or whether instead it used its privilege as the only private issuer to obtain extra profits and neglected its duties as central bank. According to the canonical study of Goodhart (1991), the banks of issue established in the nineteenth century gradually turned into genuine central banks, responsible for monetary and financial stability. The primary task, at least until 1914, consisted of ensuring exchange rate stability and guaranteeing the convertibility of banknotes. Central banks in the nineteenth century were committed to maintaining the convertibility of their notes into a certain amount of specie: holders of banknotes could exchange them at the bullion window for gold or silver coins, and vice versa. Convertibility was considered essential for the institution's financial and social reputation and a key feature of its "modus operandi". The ability to maintain parity has often been described by both contemporary and later researchers as a test of good behaviour.[1] The question then was how to reconcile currency convertibility and exchange rate stability, the two overriding objectives of all nineteenth-century private issuing banks, with profit maximization.

First, we discuss the dilemma faced by all European banks enjoying monopoly of currency issue, namely the conflict between private interest (profit maximization) and the public good, represented by the maintenance of the value of the currency. The second section deals with the period between 1856 and 1874, when a system of near free banking with various issuing banks was in place. The third section focuses on 1874, the year the issue monopoly was conferred on the Bank of Spain. The fourth analyzes the period between 1874 and 1914, comparing the Bank's profitability before and after the monopoly and also with other private banks. The fifth section looks at the relationship between profits, overissue and the exchange rate. The sixth section concludes.

The study shows that thanks to the monopoly the Spanish bank of issue made extraordinary profits (above the average for the sector). We also show that the Bank's "private interest" prevailed over the "public interest" (ensuring gold convertibility) and that the monopoly was not decisive towards converting it into a genuine central bank. The Bank of Spain was a highly profitable financial institution for its shareholders, but showed little concern for the public interest. It has been well demonstrated that the Bank's transformation into an institution responsible for monetary and financial policy did not come until well into the twentieth century.[2]

1. Between the private interest and the public good

National banks were founded at the initiative of the public authorities, which accorded them special privileges, including some kind of monopoly on banknote issue, in exchange for financial support. Grant-

[1] Today, by contrast, central banks are assigned inflation targets (Bernanke and Mishkin, 2007).

[2] Feiertag and Martín-Aceña (1999); Martín-Aceña (2000 and 2018).

ing the monopoly of issue was the first step in transforming these institutions into genuine central banks. However, the early issuers were set up as private commercial financial institutions and acted as such immediately, owing to their natural desire to maximize profits. As a result, they tried to use their founding privileges in the most advantageous manner possible so as to expand their business and increase their political and economic influence; in some cases they attempted to limit or prevent competition from other lending institutions. For example, the Bank of England tried unsuccessfully to maintain its status as the only corporation in the London area, and the Bank of France made strenuous efforts to prevent competitors from emerging.[3]

Over time, their dual status as State bankers and privileged issuing banks on the one hand and private profit-making institutions on the other produced a severe dilemma. They were forced to choose between their obligations as "national banks" and their corporate purpose as private companies accountable to shareholders. The extraordinary profits they could earn thanks to the issuance privilege prompted conduct not in accordance with the "common good." A private company that the public authorities had delegated to provide the economy with high-powered money could use this power for its own benefit and ignore the general welfare. The most irresistible temptation was over-issuance. Since profits would increase in line with the bank's ability to put revenue-generating assets into circulation, it was logical to assume that directors and shareholders might abuse their privilege.[4] A second risk also arose: the use that governments made or could make of central banks as sources of financing. The conflict, in this case, was between banks which as issuers had to guarantee the value of their notes, and governments that relentlessly demanded liquid resources to fund their spending, especially in wartime. As a result, relations between the central banks and the monetary authorities were often severely strained.

[3] For a recent overview of the creation of major central banks, see Edvinsson, Jacobson and Waldenström (2018).
[4] Flandreau (2008, pp. 11-17).

A powerful mechanism for avoiding these two risks was instituted: convertibility. The issuing banks agreed to convert their notes into a specified amount of gold and silver, and vice versa. Adherence to some sort of metal-based standard, negotiated between officials of the Bank and the Treasury, was intended to minimize the risk of over-issuance. Convertibility limited the scope for discretionary policy on the part of central banks, i.e. their ability to expand note issue at will, and gave governments a means of controlling the monetary management of the institution responsible for providing the monetary base for the economy. The public function of a national issuing bank, even if privately owned, was to ensure monetary stability – that is, a stable exchange rate. The convertibility of the currency and the maintenance of a fixed exchange rate gave the country international credibility, and were regarded as solid evidence of sound financial performance (Bordo and Rockoff, 1996).

However, convertibility conflicted with the private interest of the issuing bank, namely profit maximization. First, it limited the institution's ability to generate profits, as adherence to a metal standard was a constraint on over-issuance. Also, it required it to hold a large volume of fixed assets yielding no return (gold and silver bullion). Flandreau (2008), inquiring whether private central banks in the nineteenth century preferred convertibility or inconvertibility, considered the answer obvious: maintaining ready reserves of specie means keeping a non-profitable asset on the balance sheet with a high opportunity cost, at least equal to the income that could be obtained from lending the unproductive gold and silver reserves. "*Corso forzoso*" – inconvertibility – would enable these reserves to be reduced or eliminated, and all resources allocated to profitable investments. In the extreme case, profit maximization would be achieved with a reserve ratio of zero. For the owners of the issuing bank, this would be an ideal situation: they could place banknotes in circulation without having to back them with bullion. In fact, an issuing bank that placed its private interests before the "common good" would choose inconvertibility. This preference would distance it from the definition of a central bank. An issuing bank willing instead to prioritize maintenance of the exchange rate (monetary stability) would be much closer to the ideal model of a central bank.

Our study examines the conflict at the Bank of Spain between the objective of monetary stability and the goal of any private company, i.e. maximizing profit. One way to study the duration and intensity of this conflict of interest is to track the changes in the Bank's profits and how they relate to note issue. The basic aim is to ascertain whether the Bank's extra profits were generated by excess or abuse of issuance, and whether the excess was itself a consequence of the non-convertibility of the peseta into gold. We show that unlike other European central banks, the Bank of Spain as a monopoly issuer did not develop towards the traditional model of a central bank, because its private interests (as a profit-maximizing business) prevailed over the public interest, the common good of monetary stability (the exchange rate and gold convertibility).

2. From plurality of issue to banknote monopoly, 1856-1874: 150 years ago

The modern history of Spanish banking began in 1856, with the approval of the Issuing Banks Act and the Credit Companies Act. The former established the principle of plurality of issue, and at the same time changed the name of the Banco de San Fernando to *Banco de España*, the name it retains to this day. The 1856 law ended the de facto monopoly enjoyed by the Banco de San Fernando since 1849, authorizing the creation of an issuing institution in each province. A series of banks were established under this legislation, and already by 1866, from the original three issuers (San Fernando, Banco de Barcelona and Banco de Cádiz) their number had grown to 21.[5]

[5] The Issuing Banks Act of 1856 established a twofold limit on banks' issuing capacity. They could issue notes for no more than three times their paid-up capital and had to maintain a reserve in specie (gold and/or silver) equivalent to one third of the notes in circulation. The Credit Companies Act led to the emergence of a number of institutions

Table 1 shows the number of issuing institutions operating in 1857 and 1873. In the latter year, just before the Bank of Spain was granted the monopoly, there were 15. Banks of issue were thus multiple, but the Madrid-based institution was the largest by far. Its 50 million pesetas of paid-up capital was more than six times that of Banco de Barcelona, the country's second-largest credit company. Financial institutions such as Bilbao and Santander, now major international financial players, were tiny by comparison. If we consider the quantity of notes in circulation, the conclusion is the same. The Bank of Spain's banknotes accounted for 64 percent of the total in circulation in 1857 and 56 percent in 1873.

Figure 1 shows that the amount of Bank of Spain notes was greater than that of all the provincial banks combined. Although it had only two branches, in Valencia and Alicante, by the middle of the century the Bank of Spain was already a national and para-State financial institution, and not only in name. Thanks to its size, its notes were beginning to be used as a reserve, while it maintained close relations with the Treasury, including tax collection services and its role as the State´s cashier. These links, which dated back to the institution's origins, strengthened over time: in 1857, 59 percent of its total assets consisted in loans, advances and discounts of bills of exchange and promissory notes to the Treasury; and by 1873 the proportion had risen to 70 percent. Although the Bank defended its independence as a private credit institution, contemporary observers acknowledged that the government had a major influence over the decisions of the its Board, not only appointing the governor but also using the Bank's resources to meet the Treasury's financial needs. In return, the Bank's directors demanded special treatment and repeatedly asked for the *de iure* privilege of sole issue.[6]

that could engage in a wide range of activities, from discounting and trade credit to long-term loans and investment in industrial stocks and bonds. The first six credit and discount institutions were founded immediately in 1856, and already by 1866 they numbered no fewer than 32. On the Bank of Spain between 1856 and 1874, see Tedde de Lorca (2015). A detailed and complete study of the provincial banks of issue is in Sudrià (1994) and Sudrià and Blasco (2016).

[6] Tortella (1970), pp. 277-283; Anes (1974), pp. 116-124.

TABLE 1
Spanish issuing banks in the mid-nineteenth century (Thousands of pesetas)[7]

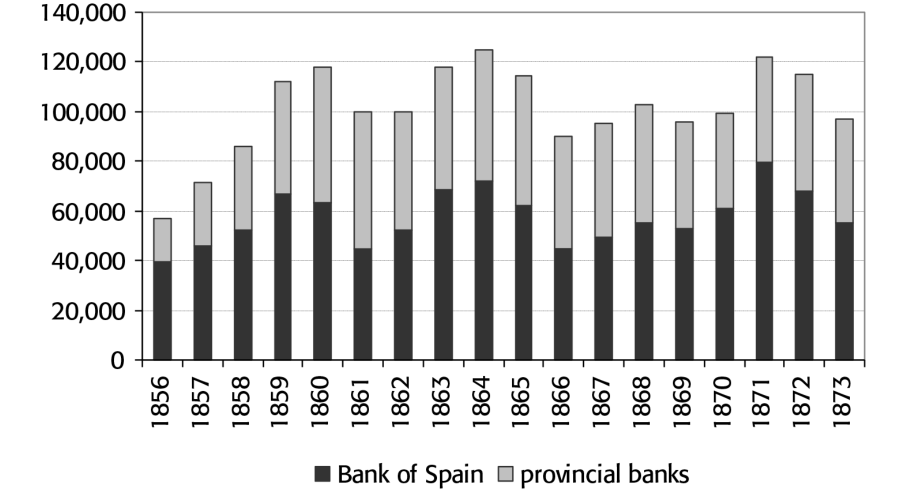
Banks	Paid-up capital		Notes in circulation	
	1857	1873	1857	1873
Bank of Spain	30,000	50,000	45,744.7	54,964.3
Balear	–	1,000	–	2,837.9
Barcelona	5,000	7,500	7,261.1	19,611.3
Bilbao	2,000	2,500	750.0	3,794.6
Burgos	–	–	–	–
Cadiz	3,437	–	9,045.7	–
Coruña	–	1,000	–	1,276.5
Jerez	–	1,500	–	1,113.6
Malaga	2,500	3,125	2,599.4	6,195.2
Oviedo	–	1,000	–	370.4
Palencia	–	–	–	–
Pamplona	–	1,125	–	363.0
Reus	–	625	–	438.1
San Sebastián	–	1,000	–	1,313.9
Santander	1,250	1,750	704.7	2,847.3
Santiago	–	–	–	–
Seville	1,500	–	3,222.3	–
Tarragona	–	750	–	265.8
Valladolid	1,500	–	1,618.5	–
Vitoria	–	1,000	–	644.8
Zaragoza	1,500	1,849	617.3	1,265.3
Total	48,687	75,724	71,564	97,302

Source: Banco de España, *Ensayos sobre la economía española mediados del siglo XIX*, appendix 1.

The plurality of issue and the increase in the number of credit companies throughout the country generated a degree of competition that did not exist prior to 1856, owing especially to the many

[7] The Spanish unit of currency was the *real* up until the adoption of the *peseta* in 1868. In order to present amounts in pesetas for the entire period, the *real* has been converted based on its equivalence (one peseta for four *reales*).

FIGURE 1
Banknotes in circulation, 1856-1873 (Thousands of pesetas)



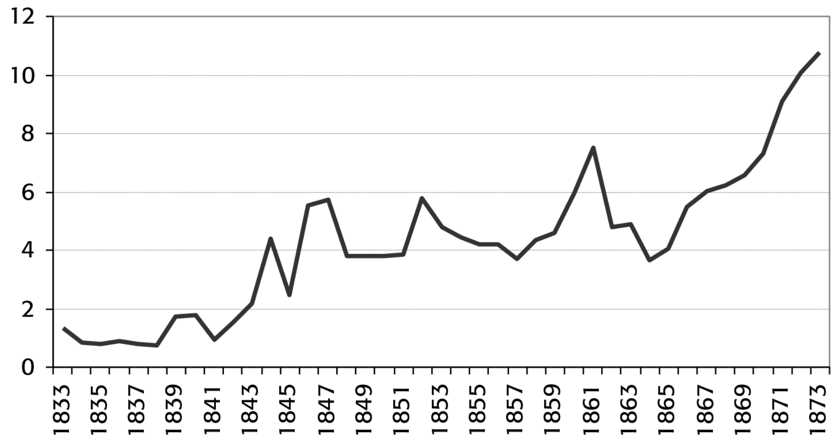
Source: Banco de España, *Ensayos sobre la economía española mediados del siglo XIX*, appendix 1.

private bankers and merchant bankers who met the demand for local credit and even lent to the government. Despite its position of dominance and near monopoly in Madrid, the Bank of Spain had to share the market with new competitors. Nevertheless, the de facto loss of monopoly did not result in a decline in its profits. The annual average for the period 1833-55, before the creation of multiple issuers, had been 2.9 million pesetas; over the next seventeen years, when there were multiple issuing banks, it was around 6 million pesetas, and in some years – such as 1872 and 1873 – the figure reached 10 million pesetas (Figure 2).

As for financial profitability in the same two periods, the average return on equity[8] of the Banco de San Fernando was about 12.2 percent, less than the 15.2 percent averaged by the Bank of Spain in the next decade and a half. These figures suggest that despite the complaints of the directors of the Bank, plurality of issue had no adverse

[8] ROE is calculated as net profits over paid-up capital.

FIGURE 2
Net profit of the Bank of Spain, 1833-1873 (Millions of pesetas)



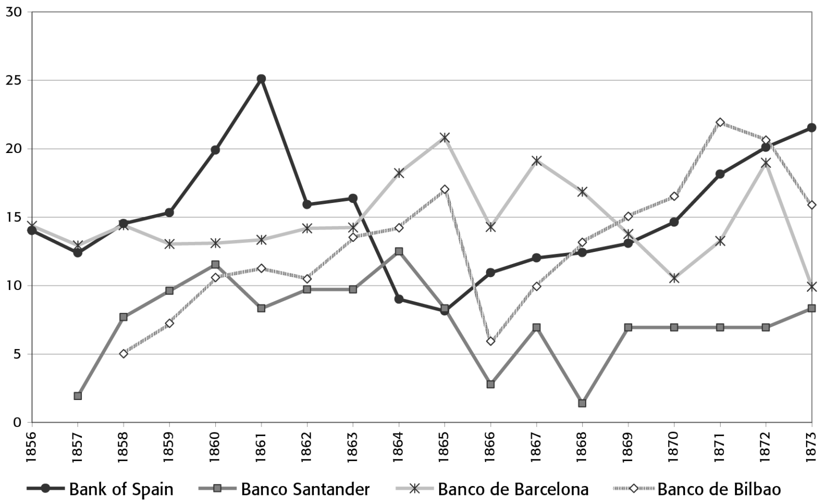
Source: Banco de España, *Memorias*, 1833-1873.

effect on the profits of the institution. One explanation is the more dynamic policy of the Bank of Spain after 1856, compared with the parsimony with which the Banco de San Fernando, a somewhat sluggish institution, had operated.[9] It was also partly due to the exceptional economic situation between 1856 and 1873, when railway construction and investment in mining and modern manufacturing boosted industrial production and GDP. Despite the financial crisis of 1866 and the stagnation of the following three years, the index of industrial production rose by more than 70 percent and GDP also soared.[10] The Bank of Spain's high profitability was due to the increase in its portfolio of government securities from 74 million pesetas in 1856 to 114 million in 1873, a consequence of the ever-present financial weakness of the State.

[9] Tortella (1970); Tedde de Lorca (1999).
[10] On the economy of the period, see Tortella (1973). The figures for GDP and industrial production are taken from *Estadísticas Históricas de España* (2005), vol. II and vol. III, series 1214 and 4730.

Another favorable indication of the Bank's performance as a private corporation, also in the era of near "free banking," derives from comparison with other issuers (the banks of Barcelona, Bilbao and Santander).[11] Figure 3 shows the estimated ROE for the four institutions. Leaving sharp fluctuations aside, it can be observed that rates of return for the Bank of Spain and Barcelona were similar, at an annual average of 15.2 percent and 14.7 percent respectively, and slightly higher than the estimated rate for the Banco de Bilbao (13 percent), while for the Banco de Santander, a smaller institution located in a peripheral provincial city, the average rate was lower but not negligible: 7 percent. The Bank of Spain therefore obtained a re-

Figure 3
Return on Equity (ROE): Bank of Spain and three provincial banks of issue, 1856-1873 (%)



Sources: Banco de España, *Memorias*, 1856-1873; Banco Santander, Martín-Aceña (2007), pp. 28, 53 and 70; Banco de Barcelona, Blasco and Sudrià (2010), pp. 368-375; Banco de Bilbao, *Memorias*, 1856-1973.

[11] *Stricto sensu* the term "free banking" as applied to the multiplicity of issuing banks in Spain from 1844 to 1874 must be taken cautiously, since the banks did not compete with one another throughout the country but were restricted in their transactions to provincial limits (Sudrià and Blasco, 2016).

turn similar to that of the main provincial banks with which it was competing in the national market for banknotes. However, as is shown below, when it gained the monopoly of issue, the Bank of Spain´s benefits would be much higher than those of the provincial banks.

3. 1874: The institution of the national monopoly of issue

On 19 March 1874 the Bank of Spain was awarded the monopoly on banknote issue, a privilege it had sought ever since the enactment of the 1856 law. The decree changed the Spanish financial system radically, so 1874 is a true milestone in Spanish financial history. The end of the plurality of issue saw the disappearance, not without resistance, of fifteen institutions, which were allowed to choose either to merge with the Bank of Spain or to continue as private credit and discount companies.[12] Almost all chose the merger, only four electing to go it alone.[13] The monopoly did not represent the State's surrender to the Bank but resulted from the Treasury's circumstances, as it was unable to finance its expenditures (which rose from 678 million pesetas in 1868 to 789 million in 1873). Three simultaneous wars (civil, cantonal and colonial) produced a considerable rise in both the absolute amount and the relative importance of military spending, from 111 million pesetas in 1870 to 329 million in 1873. The contemporaneous stagnation of public revenue due to the rigid tax system led to an increase in the budget deficit to 227 million pesetas (about 3 percent of GDP), and the public debt rose from 7,289 million pesetas in 1870 to 11,416 million in 1874 (145 percent of GDP).[14] Political instability following the 1868 revolution and the proclamation of the First Republic in 1873 made borrowing abroad

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[12] On the resistance of Banco de Santander, see Martín-Aceña (2007, pp. 34-41) and on that of Banco de Bilbao, see González, Anes and Mendoza (2007, p. 58 et seq.).
[13] Banco de Barcelona, Banco de Bilbao, Banco de Santander and Banco de Reus.
[14] The figures are taken from *Estadísticas Históricas de España* (2005), Vol. II. For a study of public finance of the period, see Comín (1988).

difficult and expensive, and the interest demanded by private Spanish bankers reached unbearable levels. Although other measures had been taken, such as leasing the mercury mines at Almadén for around 42 million and the Rio Tinto copper mines for 94 million pesetas, and the Banque de Paris et des Pays Bas had been authorized to establish a mortgage bank in return for a loan of 100 million pesetas, the Treasury was virtually bankrupt, and turned to the Bank of Spain for salvation: an urgent loan in exchange for the issuance monopoly.

The justification provided by the finance minister in the preamble to the decree granting the monopoly leaves no room for doubt that the Treasury's problems were what led to the abrogation of the multiplicity of banks of issue: "Our credit has been lost due to abuse, taxes have been exhausted due to administrative vices, the payment of our debt is at present frozen, and as a result we are forced to use other means to consolidate the floating debt and to withstand the huge costs of war that has afflicted most of our provinces for two years..." The sole solution was to "establish a National Bank based on the Bank of Spain ... as a new financial power that can assist the Treasury."[15]

In exchange for the monopoly, the Treasury received an advance of 125 million pesetas at the low interest rate of 3 percent, which it agreed to repay within two years, but which in fact was never repaid and remained forever on the Bank's books.[16] The funds avoided bankruptcy and freed the Treasury from the greed of private bankers. For the Bank of Spain, this process was similar to being refounded, and the privilege made it into a genuine national bank and an unmatched financial power in Spain. At a stroke, it had fourteen branches, enabling it to expand its business and its geographical scope of operations. The Bank was also authorized to double its

[15] The monopoly of issue granted to the Bank of France in 1842 was also driven by the urgent need to obtain financial resources for the Treasury. See Ramon (1929), Dauphin-Meunier (1936) and Leclercq (2010).

[16] For the financial terms of the loan and the contract between the Treasury and the Bank of Spain, see Martínez Pérez (1922), p. 94.

share capital to 100 million pesetas, which it did a few years later, and to increase it to 150 million pesetas when economic conditions made this advisable (the increase took place in 1883). Its capacity for issue was also increased significantly, to five times its capital (up from three times, as set in 1851), while the reserve ratio to notes in circulation was lowered from 30 percent (also set in 1851) to 25 percent.[17]

The 1874 decision made the Bank a powerful institution, completely dominant within the Spanish financial system. In 1900, the issuer's assets amounted to 2,706 million pesetas, accounting for 68 percent of the country's entire credit system.[18] It also made the Bank into one of the country's most successful trading companies, as we shall see in the next section. The Bank of Spain became the most important public-private institution, and the only one present nationwide through its branches and banknotes. It was a kind of (financial) state within the State.

However, if as the theory of imperfect markets suggests the monopoly of issue placed the Bank of Spain in a privileged position to make extraordinary profits, it also made the institution responsible, together with the Treasury (which issued coins), for supplying the monetary base, or high-powered money, and for guaranteeing currency convertibility and exchange rate stability. But as we shall see, despite its national monopoly of issue, the Bank of Spain did not fulfil the latter responsibility.

Once the plurality of issue ended, the Bank reinforced its dominant position within the Spanish financial system. Excess issue was then, as we have suggested, an irresistible temptation. Profits could be easily increased by expanding its portfolio of earning assets (private and government). The risk of overissue was real, and the consequence would be price inflation and currency depreciation, unless GDP could grow at the same pace as the money supply. The only check on such behaviour was convertibility, which would force the

[17] Tortella (1970, pp. 285-287); Anes (1974, pp. 125-133).
[18] Martín-Aceña (1987, table 6.1, p. 113).

Bank to expand its metallic reserves to balance the growth in short-term liabilities (notes and deposits). Mandatory convertibility and the need to maintain adequate gold reserves might have made the Bank less prepared to finance the Treasury deficits passively. Hence any sort of gold standard monetary regime would have acted as a check on both overissue and fiscal profligacy.

What is the evidence for Spain? How did prices and the exchange rate of the peseta actually move? Did the Bank of Spain put its private profit-maximizing goal before its public duty as guarantor of the external value of the currency? Did it take on the role as true central bank, assuming responsibility for monetary policy? The evidence presented in the following sections shows that Spain's central financial institution did in fact overissue, registered historically high profits, distributed very handsome dividends to its shareholders, and paid little or no attention to its public duties. And the Treasury, instead of raising taxes (by reforming the fiscal system) to cover its increasing expenses, resorted to the issue bank for the cash needed to cover the deficits.

4. The Bank of Spain between 1874 and 1900: central bank or profit-maximizing private company?

Figure 4 shows the net profits of the Bank of Spain between 1874 and 1914. At first they increased, from 14 million pesetas in 1874 to 50 million in 1899. Over the subsequent fifteen years, for reasons that will be explained below, they fell slowly but continuously, to a low of 36 million pesetas in 1913. Likewise, dividends increased until 1899 and then declined.[19] The Bank´s share price reflected its business performance, with a rise shadowing that in dividends; the price increased steadily to peak at 502 in 1900 and then declined moderately. From 1874 to 1913 it scored a remarkable increase of 200 percent. The institution's shareholders could not complain about the

[19] Even so, the average over the last thirteen years (112.6 million pesetas) was higher than in the previous twenty (110.1 million pesetas).

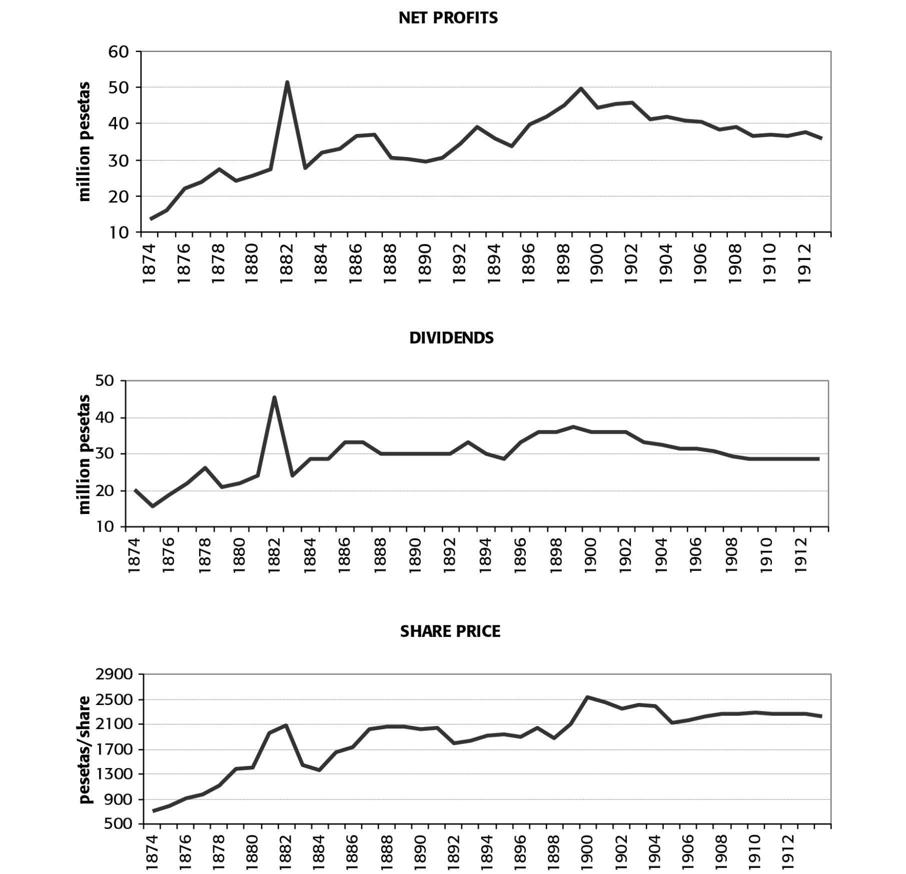
performance of their investment: they received good annual dividends, and their equity tripled. Further evidence of the benefit that the monopoly of issue brought to the Bank is the performance of ROE, which increased spectacularly between 1874 and 1899, from 15 to 33 percent (Figure 6). The average ROE for the period was around 25 percent, and over the next fourteen years, 1900-1914, it rose to 28.6 percent, although after the financial reforms of the early 20th century, the trend was downwards. All in all, the average ROE for the entire period was 25 percent.

A widely used measure for assessing monopoly rents in banking is "Tobin's Q" or charter value.[20] According to Guttentag and Herring (1983), charter value can be taken as the present value of the future profits the bank is expected to earn. A positive charter value arises either because an institution enjoys a special privilege, such as the monopoly of issue, because it operates in a protected environment, or because it has gained a good market reputation due perhaps to past performance. In the case of the Bank of Spain, as Figure 5 shows, the monopoly of issue obviously formed the basis for a considerable increase in charter value, proxied as the market-to-book ratio of its shares.[21] After 1874 we find a sharp rise in the Bank´s charter value, continuing steadily until 1900 save for a decline in the early 1880s. The charter value in fact was at very high levels throughout the period.

The Bank of Spain also posted higher returns than the non-issue banks. Figure 6 shows the ROE for three competitors that converted into credit and discount banks after losing their issuing capacity in 1874: Barcelona, Bilbao and Santander. The differences are significant: compared with the Bank of Spain's average annual return of 25 percent, the Catalan bank returned 12 percent, the Basque bank 15 percent, and the Santander bank 10 percent. So there is no doubt that with the monopoly of issue, the Bank of Spain obtained extraor-

[20] Linderberg and Ross (1981) proposed using "Tobin's Q" to assess monopoly rents.
[21] Saunders and Wilson (1994) explain why the market-to-book ratio of bank equity can be used as a measure of Tobin's Q.

FIGURE 4
Profits, dividends and share price



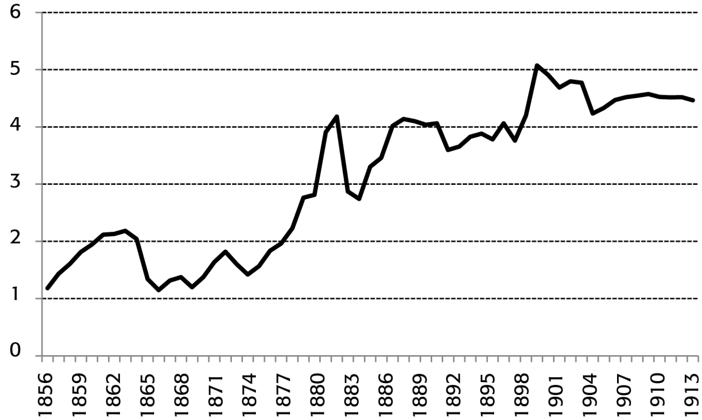
Nominal share value = 500 pesetas.
Sources: Banco de España, Memorias, 1874-1913; Banco de España, *La banca española en la Restauración* (1970), Table III-13.

dinary results, far exceeding those it had obtained in the period of plurality of issue or “free banking”.

Can we attribute the Bank’s exceptional financial returns solely to monopoly of issue, or did they also come from other sources?[22]

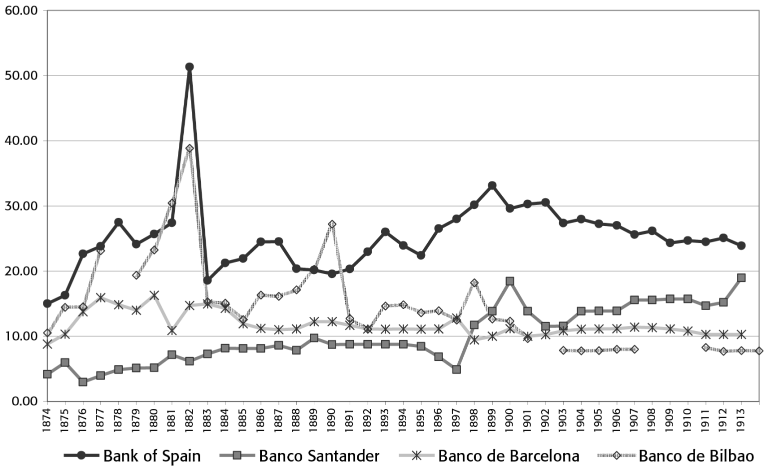
[22] The Bank of Spain also took deposits and made loans, so that the profits from issuing notes were necessarily intertwined with those of regular banking intermediation.

Figure 5
Charter value of the Bank of Spain



From 1856 to 1873 monthly frequency (first-of-month quotation) and from 1874 to 1914 weekly (Friday).
Sources: Banco de España, Memorias, 1856-1913; *Boletín de cotización oficial del Colegio de agentes de cambio*, 1856-1913; and Banco de España, *La banca española en la Restauración* (1970), Table III-13.

Figure 6
Return on Equity (ROE): Bank of Spain, Banco de Santander, Banco de Barcelona and Banco de Bilbao



Sources: Banco de España, *Memorias*, 1874-1913; Banco Santander, Martín-Aceña (2007), pp. 28, 53 and 70; Banco de Barcelona, *Memorias*, 1874-1913; Banco de Bilbao, *Memorias*, 1874-1913.

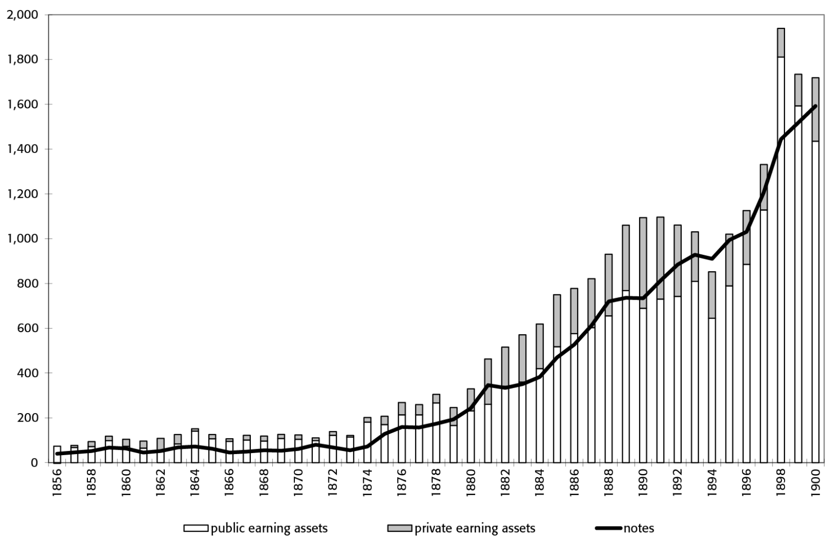
Did the Bank of Spain overissue in order to maximize its profits? To put it another way, did the Bank sacrifice the public good, maintaining the value of the currency, to higher profits? What determining factors, if any, caused the overissue? The monopoly enabled the Bank of Spain to expand its activities throughout the country. With thirty branches in all the major cities, it was able to attract clients, both companies and individuals, and increase its business of bill discounting, personal loans and credits with various guarantees. Its portfolio of private investments increased *pari passu* with its portfolio of investments in public or sovereign debt. As a consequence, its assets grew exponentially, from 254 million pesetas in 1874 to 2,525 million in 1900 and 2,838 million in 1914. However, as shown in Figure 7, until the early twentieth century most of the portfolio consisted of government securities. And although the private portfolio increased with the acquisition of the monopoly, this was not the main source of the extraordinary profits.

The close association between notes in circulation, profitability and portfolio is also shown in Figure 7. Banknotes outstanding soared from 72 million pesetas in 1874 to 1,592 million in 1899. The increase continued afterwards, albeit at a slower pace, to 1,974 million pesetas.[23] Profits and dividends also increased, as we have seen, but only until 1899. In the last decade and a half before World War I, the relationship between the increase of banknotes in circulation and profits was severed. After the loss of the Philippines and the last American colonies (Cuba and Puerto Rico) in 1898, the government cut expenditures, introduced a fiscal reform to raise new revenue, and repaid a very significant proportion of the bonds in the Bank's portfolio. It also prohibited government borrowing without prior written authorization by Parliament. But the Bank did not reduce

[23] The increase was possible because the Treasury raised the issue cap beyond the limit of five times paid-up capital. In 1891 the government raised the limit to 1,500 million pesetas, and again in 1898 to 2,500 million pesetas. In both cases, the increase in the issue was related to the financial needs of the State, which required further assistance from the Bank.

the notes in circulation proportionally to the reduction of its public bond portfolio, since part of the latter was offset by an increase in private asset holdings. However, in the short term there was not enough turnover to fully offset the decline in public assets by expanding private-sector loans and investments.

FIGURE 7
The Bank of Spain's banknotes, earning assets and ROE



Source: Banco de España, *Memorias*, 1856-1900.

5. Profits, overissue, prices and the exchange rate

The close relationship between banknotes in circulation and the trend in profits demonstrates that the Bank of Spain did abuse its issuing privilege, at least during the period 1874-1899. Further evidence of overissue can be found in the positive differential between movements in Spanish and international prices and the depreciation of the peseta, especially after 1891. As can be seen in Table 2, Spanish prices were stable between 1874 and 1880, while international prices fell; both indexes subsequently recorded a negative inflation rate until the late 1890s, but Spanish prices fell less than international prices. In other words, Spanish deflation was milder than in other European economies. The peseta depreciated from a peak of 24.6 to the pound sterling in 1874 to 30.4 in 1896, then collapsed to a low of 39.2 in 1898. In fact, this monetary instability linked to the lack of gold convertibility of the peseta is what enabled the Bank of Spain to conduct an independent monetary policy not bound by the rules of the gold standard.

The situation changed after 1900, when steps were taken to stabilize the economy (elimination of the budget deficit, reduction of the national debt, increases in interest rates). Prices fell, the differential with international prices decreased, and the peseta appreciated. The volume of banknotes in circulation continued its upward trend, albeit at a slower pace than in the previous period, and the Bank's profits declined. The contrasting trends in the currency in circulation and profits corroborate our argument. In the first decade of the twentieth century, Spain undertook a programme of monetary stabilization to halt the depreciation of the peseta and institute the gold standard. Excess issue was terminated and the Bank's extraordinary profits declined, along with its share price. The government's effort to attenuate its financial dependence on the central bank undoubtedly affected profitability, and the Bank consequently tried by all means to prevent or at least slow the liquidation of public assets on its balance sheet planned in the adjustment programme (Martínez-Ruiz and Nogues-Marco, 2014). Given the impossibility of replacing them with other profitable assets, the Bank began to accumulate cash. At any rate, the institution's stance partly frustrated the deflation desired by the government and kept the plan from being a complete success. Nevertheless, although in the end the gold standard was not adopted, the Treasury's plans to restore gold convertibility (the common good) were sufficient to sever the pervasive association between note issue and the Bank's financial returns.

Non-convertibility was good business for the Bank of Spain. Neither directors nor shareholders complained about the currency's depreciation, although there was plenty of criticism from other quarters. A recurring theme among contemporary observers was that the

Bank looked after its own interests (maximizing profits) before the common good, which in this case was a stable external value of the currency. In fact, for the Bank's shareholders, non-convertibility into gold (the expensive metal) was good news. Convertibility into silver was not bad news either, because although it required the maintenance of an adequate level of reserves, the cost was lower and diminished along with the world price of silver. As we know, as the peseta depreciated and the price of silver declined, profits and dividends rose.[24]

Off the gold standard, the Bank's managers had no responsibility for exchange rate stability and needed only to have enough silver to ensure convertibility. As the price of silver collapsed in the last quarter of the century, the incentive for banknote holders to go to the teller's window and exchange a convenient means of payment for a depreciated metal simply disappeared. The movements of the Bank's holdings of specie show that with the exception of a few years, there was little outflow of silver in exchange for notes. The bank of issue could accordingly save its metal resources and devote its capital to more profitable investments.

Actually, the Bank could also have dispensed with its stock of gold, maintaining only the minimum required of it under the Decree of 1874 and subsequent legislation.[25] However, the directors were concerned to expand the gold reserve after it fell to a low of 50 million pesetas in 1882, which was one of the reasons for the limitation on gold convertibility. After the end of that decade, and increasingly up until 1914, the Bank instituted a continuous policy of buying gold to bolster its holdings, which rose from 395 million pesetas in 1899 to 7,674 million in 1913 – quite a considerable amount. The reasons behind this policy included prestige, the desire to strengthen confi-

[24] Martin-Aceña (1994); Serrano Sanz (2004); Ródenas and Bru (2006); Martin-Aceña, Martinez-Ruiz and Nogues-Marco (2011).
[25] For a detailed examination of the legislation concerning minimum and maximum reserves ratios for the Bank of Spain see Galvarratio (1932), pp. 212-215, 236-237; and Martín-Aceña, Martínez-Ruiz and Nogues-Marco (2011).

Table 2
Wholesale prices and the exchange rate of the peseta

Year	Spanish wholesale price index (1913 = 100)	British wholesale price index (1913 = 100)	Nominal exchange rate (pesetas per pound sterling)
1874	92.6	126.1	24.6
1875	84.1	120.5	25.0
1876	90.7	117.7	25.0
1877	92.2	120.5	25.3
1878	93.4	112.5	25.2
1879	94.9	107.3	25.3
1880	90.0	110.7	24.9
1881	90.6	108.7	25.2
1882	93.9	109.6	25.7
1883	89.5	108.1	25.6
1884	81.5	97.9	25.5
1885	80.5	91.8	25.7
1886	79.9	86.7	25.7
1887	77.0	84.8	25.5
1888	78.4	87.4	25.6
1889	79.7	88.8	26.0
1890	79.1	88.7	26.3
1891	78.0	91.8	26.9
1892	80.2	86.8	29.0
1893	78.1	85.3	30.0
1894	75.2	80.3	30.1
1895	79.5	77.9	28.9
1896	75.8	75.7	30.4
1897	82.4	77.3	32.6
1898	90.5	80.0	39.2
1899	92.1	79.1	31.4
1900	96.7	85.8	32.6
1901	96.9	83.0	34.8
1902	94.7	82.7	34.1
1903	97.7	83.2	34.0
1904	99.5	84.3	34.7
1905	100.0	83.8	32.9
1906	97.3	86.5	28.4
1907	101.4	91.0	28.1
1908	98.6	88.4	28.4
1909	97.3	89.4	27.2
1910	98.2	93.4	27.1
1911	94.7	93.9	27.2
1912	99.4	98.6	27.0
1913	100.0	100.0	27.1

Sources: *Estadísticas Históricas de España*, vol. II: 2135 and vol. III: series 4644; *Abstract of British Historical Statistics* (1962), series 5, p. 476.

dence in the value of the peseta, and the efforts of finance ministers to stabilize the currency from 1900 onwards and permit adoption of the gold standard. In fact, the actual reserve of specie (total silver and gold) was always greater than the legal minimum, indicating that the Bank did not in fact minimize its holdings of such unprofitable assets. However, the level and changes in the reserve ratio (gold and silver in the Bank's vaults over notes in circulation and checking accounts) corroborates our initial argument. Despite the bolstering of the gold reserve and the maintenance of a large stock of silver, the Bank of Spain's reserve ratio was in fact lower than those of other European issuing banks, as can be seen in Table 3. The Spanish reserve ratio was far lower than that of the Bank of France or the Reichsbank, and lower even than that of the Bank of Portugal. That is, the saving on metallic reserves enabled the Bank of Spain to channel a larger part of its disposable resources to income-generating assets.

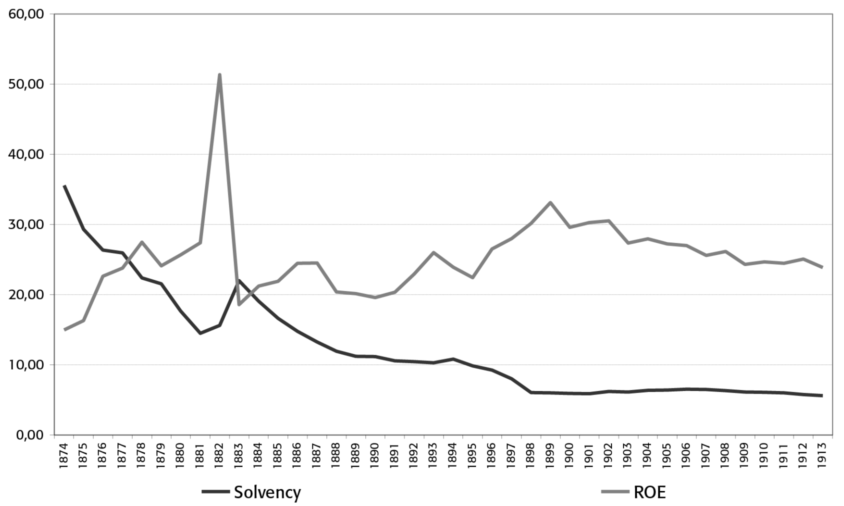
Table 3
Gold reserve ratios of some European central banks (%)

Year	Bank of France	Reichsbank	Bank of Norway	Bank of Denmark	Bank of Portugal	Bank of Spain
1880	85	61	na	56	30	54
1885	74	61	64	56	30	22
1890	80	60	69	62	39	22

na: Not avalaible.
Sources: Reis (1999, Tables 5.2 and 5.3) and Martín-Aceña (1994)

The Bank's high overall returns, a consequence of extraordinary profits, can also be explained by the evolution of its paid-up capital, which although it doubled never exceeded 150 million pesetas, while total assets and banknotes in circulation increased to a much greater extent. The estimated solvency ratio, i.e. paid-up capital over total assets, therefore plunged from 36 percent, a normal ratio for financial institutions in the nineteenth century, to a low of 5.3 percent in 1914, obviously too low not only by historical but even by today's standards. Profitability and solvency thus moved quite differently, as shown in Figure 8. The monopoly of issue, together with the relationship with the State, which implicitly guaranteed stability and continuity, gave the Bank a privilege and a special status that other private financial institutions lacked. It being inconceivable that the State could allow the issuing institution to fail, the Bank of Spain could operate with very low solvency ratios. One could even argue that the higher returns were obtained at the cost of solvency levels that would be considered very dangerous indeed today.[26]

FIGURE 8
Bank of Spain: Solvency Ratio and ROE. In percentages



Solvency = paid-up capital/total assets.
Source: Banco de España, *Memorias*, 1874-1913.

Conclusions

The Bank of Spain was a cornerstone of the Spanish State, in a country where modern administrative mechanisms were late to de-

[26] However, the evolution of the Bank of Spain's solvency ratio is similar to that observed for the other three banks.

velop.[27] As the State treasurer in Spain and abroad and the sole issuer of banknotes with a gradually expanding nationwide network of branches, the Bank of Spain was a key player in the process of market integration and one of the essential pillars of the State.

This task of "nation-building" was comparable to the role played by other national banks established to meet their Treasury's financial needs. As noted by Capie, Goodhart and Schnadt (1994) in their historical review of the development of central banks, both the older institutions, such as the Bank of England (established 1694) and the Bank of France (1800), and their followers all over Europe, such as the Bank of Portugal (1846), the Reichsbank (1876) and the Bank of Italy (1893), helped to shape national identity and consolidate territorial unity, by nationalizing and unifying the monetary system, establishing national payment systems and, of course, helping to finance the public treasury.

However, as we have seen, the Bank of Spain did not become a true central bank, despite having been granted the monopoly of banknote issue as early as 1874. The Bank's notes were distributed throughout the country. By 1900 they accounted for 67 percent of the currency in circulation and 49 percent of the money supply (M2) and were the country's primary means of payment. The monopoly of issue enabled the Bank of Spain to earn high returns and extraordinary profits, but it did not lead it to take on some of the traditional roles assigned to central banks, such as lender of last resort and guarantor of exchange rate stability. As a business institution, the Bank of Spain used its position to maximize profits, giving its own private interest priority over the public interest. It maintained the convertibility of its notes into silver, which was irrelevant in a world ruled by the gold standard. The Bank was comfortable with a monetary system involving a quasi *corso forzoso*, given the substantial depreciation of silver, and never wanted to alter a status quo that enabled it to earn healthy profits and distribute generous dividends. It was

[27] Fusi (2000), pp. 165-166.

only from 1900 onwards, when Spain began to attempt to institute the gold standard, balancing public accounts and limiting the Bank's issuing capacity, that profits and notes in circulation failed to march in step. That is, it was not until the twentieth century that the Bank of Spain – gradually and not without some resistance – ceased to be essentially a commercial bank whose objective was profit maximization and began to concern itself with the common good.

References

Abstract of British Historical Statistics, Cambridge, At the University Press, 1962

Anes R. (1974), "El Banco de España (1874-1914): Un banco nacional", in *La Banca Española en la Restauración*, Banco de España, Madrid, vol. I, pp. 107-215.

Blasco Y., Sudrià C. (2010), *El Banco de Barcelona (1844-1874). Historia de un banco emisor*, LID Editorial, Madrid.

Banco de Barcelona, *Memorias*, 1846-1914.

Banco de Bilbao, *Memorias*, 1857-1914.

Banco de España, *Memorias*, 1833-1914.

– (1970), *Ensayos sobre la economía española*, Ariel, Madrid.

Banco Santander, *Memorias*, 1857-1914.

Bank of Spain (2006), *150 Years in the History of the Bank of Spain*, Banco de España, Madrid.

Bernanke B., Mishkin F. (2007), "Inflation Targeting: A New Framework for Monetary Policy", in *Journal of Economics Perspectives*, 2, pp. 97-116.

Boletín de cotización oficial del colegio de agentes de cambios, Bolsa de Madrid, 1856-1874.

Bordo M., Rockoff H. (1996), "The Gold Standard as 'Good Housekeeping Seal of Approval'", in *Journal of Economic History*, LVI, pp. 389-428.

Capie F., Goodhart C., Fischer S., Schnadt N. (1994), "The Development of Central Banking", in *The Future of Central Banking. The*

Tercentenary Symposium of the Bank of England, Cambridge University Press, Cambridge.

Castañeda L. (2001), *El Banco de España (1874-1900) La red de sucursales y los nuevos servicios financieros*, Banco de España, Madrid.

Comín F. (1988), *Hacienda y economía en la España contemporánea, 1800-1836*, Instituto de Estudios Fiscales, Madrid.

Dauphin-Meunier A. (1936), *La Banque de France*, Ed. Gallimard, Paris.

Edvisson R., Jacobson T., Waldemström D. (eds.) (2018), *Sveriges Riksbank and the History of Central Banking*, Cambridge University Press, Cambridge.

Estadísticas Históricas de España (2005), Fundación BBVA, Madrid.

Feirstag O., Martín-Aceña P. (1999), "The Delayed Modernization of the Central Banks of France and Spain in the Twentieth Century", in C.L. Holtfrerich, J. Reis and G. Toniolo (eds.), *The Emergence of Central Banking from 1918 to the Present*, Ashgate, Aldershot (UK), pp. 37-68.

Flandreau M. (2008), "Pillars of Globalization: A History of Monetary Policy Targets 1797-1997", in A. Beyer and L. Reichlin, (eds.), *The Role of Money: Money and Monetary Policy in the 21st Century*, ECB, Frankfurt, pp. 208-243.

Fusi J.P. (2000), *España. La evolución de la identidad nacional*, Ediciones Temas de Hoy, Madrid.

Galvarriato J.A. (1932), *El banco de España, su historia en la centuria, 1829-1929*, Banco de España, Madrid.

González M-J., Anes R., Mendoza I. (2007), *BBVA ciento cincuenta años, ciento cincuenta bancos*, BBVA, Madrid.

Goodhart C.A.E. (1991), *The Evolution of Central Banks*, The MIT press, Cambridge.

Guttentag J., Herring R. (1983), "The Insolvency of Financial Institutions: Assessment and Regulatory Disposition", in P. Wachtel (ed.), *Crises in the Economic and Financial Structure*, Lexington Books, Lexington, pp. 99-126.

Leclercq Y. (2010), *La Banque supérieure. La Banque de France de 1800 à 1914*, Editions Classique Garnier, Paris.

LINDERBERG E.B., ROSS S.A. (1981), "Tobin´s Q Ratio and Industrial Organization", in *The Journal of Business*, 54, 1, pp. 1-32.

MARTÍN-ACEÑA P. (1987), "Development and Modernization of the Financial System, 1844-1935", in N. Sánchez Albornoz (ed.), *The Economic Modernization of Spain, 1830-1930*, New York.

– (1994), "Spain During the Classical Gold Standard, 1880-1914", in M. Bordo and F. Capie, *Monetary Regimes in Transition*, Rutgers University, New Jersey, pp. 135-172.

– (2000), "El Banco de España entre dos siglos: de banquero del Estado a prestamista en última instancia", in A. Morales Moya (ed.), *Las transformaciones económicas. Las Claves de la España del siglo XX*, Sociedad Estatal Nuevo Milenio, Madrid, pp. 95-140.

– (2006), "The Bank of Spain and the Financial System, 1914-1962", in *150 Years in the History of the Bank of Spain*, Banco de España, Madrid, pp. 135-164.

– (2007), *Banco Santander. 150 Years of History*, Turner, Madrid.

– (2018), *The Banco de España, 1782-2017*, Banco de España, Estudios de Historia Económica, n. 73.

MARTÍN-ACEÑA P., MARTÍNEZ-RUIZ E., NOGUES-MARCO P. (2011), "Floating Against the Tide: Spanish Monetary Policy, 1870-1931", in A. Ögren y L.F. Øksendal (eds.), *The Gold Standard Peripheries: Monetary Policy, Adjustment and Flexibility in a Global Setting*, Palgrave Macmillan, Basingstoke, pp. 145-173.

– (2013), "The Bank of Spain: A National Financial Institution", in *Journal of European Economic History*, XIII (1), pp. 11-45.

– (2014), *Crisis cambiarias y políticas de intervención en España, 1880-1975*, Banco de España-Estudios de Historia Económica, Madrid, n. 66.

MARTÍNEZ PÉREZ E. (1922), *Banco de España. Sus orígenes, operaciones y situación*, Gráficas Reunidas, Madrid.

RAMON G. (1929), *Histoire de la Banque de France*, Bernard Grasset, Paris.

REIS J. (1999), "The Bank of Portugal´s First Century: from 1846 to the Second World War", in C.L. Holtfrerich, J. Reis and G. Toniolo (eds.), *The Emergence of Central Banking from 1918 to the Present*, Ashgate, Aldershot (UK), pp. 144-160.

Ródenas C., Bru S. (2006), "La convertibilidad de la peseta en el siglo XIX", in *Revista de Historia Económica/Journal of Iberian and Latin American Economic History*, XXIV, 3, pp. 555-578.

Saunders A., Wilson B. (1994), "Bank Capital Structure: An Analysis of the Charter Value Hypothesis", Working paper series S-94-14, New York University, Leonard N. Stern School of Business.

Schwartz, P., Tortella G. (eds.) (1974), *La banca española en la Restauración*, Madrid, Banco de España.

Serrano Sanz J.M. (2004), *El Oro en la Restauración*, Real Academia de Ciencias Morales y Políticas, Madrid.

Sudrià C. (1994), "Los bancos de emisión en provincias en la España del siglo XIX", in P. Tedde and C. Marichal (eds.), *La formación de los bancos centrales en España y América Latina, siglos XIX y XX*, Banco de España, Madrid, Servicio de Estudios, Vol. I, pp. 81-107.

Sudrià C., Blasco Y. (eds.) (2016), *La pluralidad de bancos de emisión en España, 1844-1874*, Fundación BBVA, Bilbao.

Tedde De Lorca P. (1988), *El Banco de San Carlos, 1782-1829*, Alianza Editorial, Madrid.

– (1999), *El Banco de San Fernando, 1829-1856*, Alianza Editorial, Madrid.

– (2006), "The Bank of Spain, 1856-1874", in Bank of Spain, *150 Years in the History of the Bank of Spain*, Banco de España, Madrid, pp. 69-108.

– (2015), *El Banco de España y Estado liberal, 1847-1874*, Gadir Editorial, Madrid.

Tortella Casares G. (1970), "El Banco de España entre 1829 y 1929", in *Banco de España. Una historia económica*, Banco de España, Madrid.

– (1973), *Los orígenes del capitalismo en España*, Tecnos, Madrid.

– (2006), "The Bank of Spain: A New Financial Power, 1874-1914", in *150 Years in the History of the Bank of Spain*, Banco de España, Madrid, pp. 109-134.